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INDEX JAN 2019

1 EDITORIAL HIGH RESULTS UP GRADATION OR DEGRADATION OF MEDICAL EDUCATION

Dr Swapnali S Kadam,

ORIGINAL ARTICLES

2 COMPARATIVE STUDY OF TACTILE DISCRIMINATION IN COMPLETELY BLIND BRAILLE READERS & NON BLIND NON BRAILLE READERS

Dr C Maitra, Ms Manasi Bhave, Dr Swapnali Kadam

3 AUDIOLOGICAL FINDINGS IN VARIOUS PERSONAL LISTENING DEVICES USERS AND NON USERS Lopa Vaidya Dr N J Shah

4 EFFECT OF CONTACT LENS CORRECTION ON TEAR FILM: Atanu Samanta, Dr Nitin V Trivedi

5 STUDY OF HEAD INJURY PATIENTS ADMITTED IN THE EMERGENCY ROOM Dr Mehul Gajjar, M, Dr Harsha Makwana, Dr Malhar Madariya, Dr Advait V Thakor

6 A STUDY MANAGEMENT OF ACUTE PANCREATITIS; ROLE OF RECENT CRITERIA IN PROGNOSIS AND MANAGEMENT OF ACUTE PANCREATITIS Kaushal D Suthar, Sruja D Narola, Jay Pandya, Kush Shah

7 A COMPARATIVE STUDY OF CAL (COMPUTER ASSISTED LEARNING) VERSUS CONVENTIONAL METHOD FOR TEACHING EXPERIMENTAL PHARMACOLOGY Dr Gurusharan H Dumra, Dr Chetan Parmar, Dr Sheetal Kamol, Dr A J Singh

8 INTRA-OPERATIVE ASSESSMENT OF LAPAROSCOPIC CHOLECYSTECTOMY Dr Keyur Surati, Dr Aakash Rathod, Dr Anuj S Shah, Dr Chintan Safi, Dr Dip H Joshi

9 FNAC IN DIAGNOSIS OF BREAST LESION DR BIJALI CHAKRABARTI, DR HIMAXI RATHOD, DR J M SHAH,

10 COMPARISON OF INTRAVENOUS TRAMADOL AND INTRAVENOUS CLONIDINE ON POST SPINAL ANAESTHESIA SHIVERING DR GARGI M BHAVSAR , DR RUPAL KAPADIA, DR JYOTSANA SIROHI , DR MULANI AKASH

11 COMPARATIVE STUDY OF 3*ED95 ROCURONIUM VERSUS SUCCINYLCHOLINE A INTUBATING AGENT IN A PEDIATRIC PATIENT DR SHRUTI DESAI, DR MANISHA SKAPDI

12 A COMPARATIVE STUDY ON OUTCOME OF MIDLINE LAPAROTOMY WOUND CLOSURE Dr Pratik HVyas, Dr Jaykumar BPandya, Dr Shruja DNarola,

13 CONSCIOUS SEDATION WITH DEXMEDETOMIDIINE/ MIDAZOLAM INFUSION IN PATIENTS WITH INTRATHECAL BUPIVACAINE FOR INFRAUMBILICAL SURGERIES Dr Devanshi Shah, Dr Manisha kapdi

14 STUDY OF YOUNG ADULTS WITH ACUTE MYOCARDIAL INFARCTION IN REFERENCE TO RISK FACTORS AND SHORT-TERM OUTCOME Dr Brinda Mevada, Dr Avani Chavda, , Dr Hiren Bhadja,

15 CLINICAL AND LABORATORY PROFILE OF PATIENTS WITH SUBCLINICAL HYPOTHYROIDISM Dr Henil Shah , Dr Jay Mehta, Dr Leena Dabhi

16 REPRODUCTIVE TRACT INFECTION (RTIS) RESULTING IN TO GYNECOLOGICAL MORBIDITY Dr Bharatiben C Purohit, DR Sanatkumar T Sahita, Siddhpur Dental college, Siddhpur, Patan

17 ETIOLOGY OF VISUAL IMPAIRMENT AND BLINDNESS AND DEMOGRAPHIC PROFILE OF AFFECTED INDIVIDUALS Dr Sonal Kochhar Suri , Dr Bodhraj Dhawan , Dr Rhutuja Deo , Dr Anmol Kochhar

18 CYTO-HISTOPATHOLOGICAL CORRELATION OF BREAST LESIONS - A RETROSPECTIVE ANALYSIS OF 2 YEARS Dr Kavita Sane Dr Sandhya Bholay, 3 Dr Vaibhav Bari, 4 Dr Shivkumar Kori,

19 A COMPARATIVE STUDY OF USG AND CT SCAN EVALUATION OF PATIENT OF ACUTE AND CHRONIC PANCREATITIS Dr Deepak Rajput, Dr Himani R Virapara, Dr Ravikumar Bokarvadia

20 COMPARISON OF EPIDURAL BUPIVACAINE HYDROCHLORIDE AND BUTORPHANOL TARTRATE Vs BUPIVACAINE HYDROCHLORIDE AND FENTANYL CITRATE FOR POSTOPERATIVE ANALGESIA IN LOWER ABDOMINAL AND LOWER LIMB SURGERY Dr Sujata Patel, Dr Madhuri Bhade, Dr Priti Patel, Dr Jenish Patel, Dr Bhavna Shah

21

PREVAILING KNOWLEDGE ABOUT STROKE SYMPTOMS AND TREATMENT OPTIONS AMONG THE RELATIVES OF NON STROKE PATIENTS Dr Mehul Gajjar Dr Bhavesh Jarwani Dr Adwait Thakor Dr Nolesh Patel Dr Rushi Patel

22 INCIDENCE OF SECONDARY GLAUCOMA AFTER OCULAR TRAUMA CORRELATED WITH THE TYPE OF INJURY Dr Madhavi K Malivad, Dr Reema Raval, Dr Kintu Shah

23 Accommodative Status in Amblyopes and its Effect on Quality of Life, Aloe Gupta, Ria Fulwani, Dr Nitin Trivedi

24 ANALYSIS AND OUTCOMES OF PLATING VERSUS NAILING IN HUMERUS SHAFT FRACTURES: A PROSPECTIVE COMPARATIVE STUDY Dr Gaurav Parikh, Dr Pathik Vala, Dr Bhavik Dalal, Dr Ajay Devda

25 THE EFFICACY OF DEXAMETHASONE ADDED AS AN ADJUVANT TO LOCAL ANESTHETIC IN BRACHIAL PLEXUS BLOCK FOR POST OPERATIVE ANALGESIA
Dr PAURAVI T BHATT Dr REBECCA JACOB, Dr NUPUR DOSHI Dr MAITRY PATEL

26 A STUDY TO ASSESS RELATIONSHIP BETWEEN GESTATIONAL DIABETES MELLITUS AND BLOOD GROUPS Dr Shilpa Menat, Dr Neeta Mehta,

27 PULMONARY EMBOLISM AT A TERTIARY CARE HOSPITAL Dr Yashdip D Patel, Dr Harsha D Makwana, Dr Ronak Joshi, Dr Sanjaykumar Solanki, Dr Advait Thakore

28 ANALYTICAL EVALUATION OF DRUG PACKAGE INSERTS Dr Sanskruti J Patel, Dr Gurusharan H Dumra, Dr Adarshjit Singh

29 FACIO MAXILLARY FRACTURES ATTENDED IN A TERTIARY CARE HOSPITAL DRMeeta Bathla ,DR Hiren Doshi DRAniket Kansara, Maxillo Facial Surgeon DR Atul Kansara DRNeha Baga ,DEPARTMENT OF ENT, LG HOSPITAL

30 DIAGNOSTIC VALUE OF PLAIN ABDOMINAL RADIOGRAPH IN NON TRAUMATIC CAUSES OF ACUTE ABDOMEN Dr Deepak Rajput , Dr Aashaka Patel

31 OUR BASELINE OBSERVATIONS OF MEDICAL CAMP AT ELDERLY HOUSE WITH NSS CADETS OF AMCMET MEDICAL COLLEGE AHMEDABAD DR JANARDAN V BHATT, Saloni, Shekhar ,

32 Conference 2019-04-07: 12TH ACADEMIC MEET on Environment and health

1

EDITORIAL

HIGH RESULTS: UP GRADATION OR DEGRADATION OF MEDICAL EDUCATION

Dr Swapnali S Kadam, Associate Professor, Department of Physiology, Rajiv Gandhi Medical College, Thane, Maharashtra

In recent years, Indian medical colleges have reached a peak for their performance of undergraduate results Most colleges are showing 100% or near 100% results with too many distinctions in each subject If a committee comprising of nonmedical people is appointed to evaluate the trend of results in last 25 years, this trend will be a shock for them Easy passing with high marks is a common trend This trend provokes my mind with a few questions, “Are today’s students are extraordinarily brilliant? Is it that they know everything what they are supposed to know? Is the efficiency of teacher so good, that he/she is able to make every student a competent practitioner? Are we really giving good practitioners to the community?” An anonymous writer mentions,” Practice is related to competence and qualifications and includes cognitive, affective, personal and social factors” Results with flying colours are surely giving qualifications but competency is doubtful It is known all that we get very easily is not

valued much Presently qualification is distributed so easily to students that the development of cognitive, affective, personal & social domains remains questionable As John Cleese says, "But then acting is all about faking We're all very good at faking things that we have no competence with" Students are completing their internship with busy schedule of classes of PG NEET examination But require at the end of internship how many of them are actually competent is a big question Most of them are qualified but requires supervision or assistance after qualification This shows that present medical education system is not able to give competent medical graduates Comparing present and past era students, they show few differences among their qualities Today's students are no doubt smarter than their seniors; advances in technology, exposure to other extracurricular activities and overall improved socioeconomic status of society are some of the causes But no technological advances come without flaws Today's students do face more issues with psychological aspects mainly interpersonal relationships, emotional stability, peer pressures etc These issues do interfere with attitudes, skills and process of acquiring knowledge Previous medical teachers were given more autonomy compared to current medical teachers Most of the former teachers have justified their jobs with rare occurrence of misuse of it The results were in proportion not only to the knowledge but also with the competence of the students This gave inner emotional strength to the students for facing the failure Most students who were cream of their school and colleges have ended up failing miserably during their first examination Failing in first examination usually midterm was routine As stated by Erin Cummings, "At the end of the day, you are solely responsible for your success and your failure And the sooner you realize that, and accept that, and integrate that into your work ethic, you will start being successful As long as you blame others for the reason you aren't where you want to be, you will always be a failure" Most of the successful competent doctors have gone through this phase and have got imbibed with work ethics without getting any formal education in bioethics They have not only learned from their failure, but also inculcated qualities that are needed to become successful Existing medical teachers are facing different challenges during their career Scarcities of jobs have increased competition among teachers with fear of losing job The higher authorities of universities and colleges are also under performance pressure Most of the rules are student friendly including assessment for example giving higher marks to students out of two examiners who have assessed, more grace marks than before This has trickled down to the medical teachers The nightmare of loss of job has made it mandatory for the teachers to prove their efficiency to their superiors by any means like undue leniency in assessment Examiners have been delegated authority of giving the marks but the problem is you cannot delegate moral responsibilities associated with it This has created a wide range of examiners Responsibilities lie within Performance and peer pressures are killing moral responsibilities of the examiners Quality is at high risk AS quoted by APJ Abdul Kalam, "Teaching is a very noble profession that shapes the character, caliber and future of an individual" It is high time that medical teachers to reflect upon this issue Assessment is a big challenge but we can overcome this by achieving uniformity Other than present methods this is possible by incorporating blue printing & model answers along

with marks distribution Presently, university teachers are selected only with the teaching experience We do need to assess the examiner's competency by evaluating his knowledge, skills and attitude We are going to implement competency based curriculum from next academic year which has fantastic vision & planning But, the competency of the medical teachers, who are the core executers, needs to be evaluated for their preparedness for implementation Otherwise, failure of such curriculum should not be shocking to us Inefficiency of our teachers due to any reason will leave our students incompetent We, medical teachers need to be more faithful to the community and shape our students in such a way that we are able to bring out competent medical graduates

Original articles

2

COMPARATIVE STUDY OF TACTILE DISCRIMINATION IN COMPLETELY BLIND BRAILLE READERS & NON BLIND NON BRAILLE READERS

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ABSTRACT:

Background: Braille readers are encouraged for various task which fosters their finger sensitivity Tactile discrimination is ability to distinguish between two touch stimuli on skin The present study was conducted to compare the sense of tactile discrimination in Blind Braille readers who are expertise in braille reading & non blind non braille readers Method: Tactile discrimination was measured by Weber Compass Aesthesiometer in completely Blind Braille readers & Non blind Non Braille readers **Result & Analysis:** Collected data was analyzed by t test It was found that completely blind Braille readers had better tactile discrimination than non-blind non Braille readers **Conclusion:** The present study showed that statistically significant results of higher tactile discrimination in completely blind Braille readers than non-blind non Braille readers These results may help us in rehabilitation of blind Braille readers

Key words: - Tactile discrimination, Braille readers, Non Braille readers

INTRODUCTION:

Blind Braille readers are always a matter of curiosity and admiration in the society. A Braille reader deciphers the dots embossed on a special paper (Braille letters) with fingertips. Thus he continuously uses his sense of tactile discrimination while reading. Tactile discrimination which relies on different types of touch receptors is the ability to recognize two touch stimuli on skin as two separate points. This distance varies on different parts of the body as around 65mm on the back and 2 to 5 mm on the fingertip. It is least on the lips¹. The variation is due to density of skin sensory receptors per sqmm and connections to brain by dorsal column medial lemniscal system. Tactile discrimination for Braille reading is a sequential process. In this, a Braille reader learner starts with three dimensional forms followed by flat shapes, embossed shapes with entire area raised, raised outline shapes & lines and finally Braille letters. They are given various tasks to develop their finger sensitivity and nurture tactile discrimination skills. Lateral inhibition can decrease two-point threshold by reducing the discharge of neuron innervating the receptive field in the center, thus making it apparent to the CNS that two stimuli are present².

The present study was conducted to compare the sense of tactile discrimination in Blind Braille readers who have expertise in Braille reading & non blind non Braille readers.

AIM:

To compare the tactile discrimination at fingertips in blind Braille readers with that in sighted individuals.

METHODOLOGY:

Type of Study: A single observer population based cross-sectional study to compare the tactile discrimination at fingertips in blind Braille readers with that in sighted individuals.

Place of Study: Rajiv Gandhi Medical College, Thane

Sample Size: 20 subjects in group A and 20 in group B

Inclusion Criteria:

Group A: Completely blind individuals within age group 13 to 19 years, proficient Braille readers (have been reading Braille for 6 to 11 years) were selected from a blind girls school.

Group B: Controls of same age group & gender were selected from a secondary school.

Exclusion Criteria:

Partially blind Braille readers

Sighted Braille readers

Exclusion criteria for both groups A and B included history of neurologic disorders known to impair somatosensory function and trauma to the hands or their innervations.

Instrument used: Weber's compass aesthesiometer (range: 0 to 20 mm)

METHOD:

Institutional Ethics committee permission was taken prior to conduction of the study

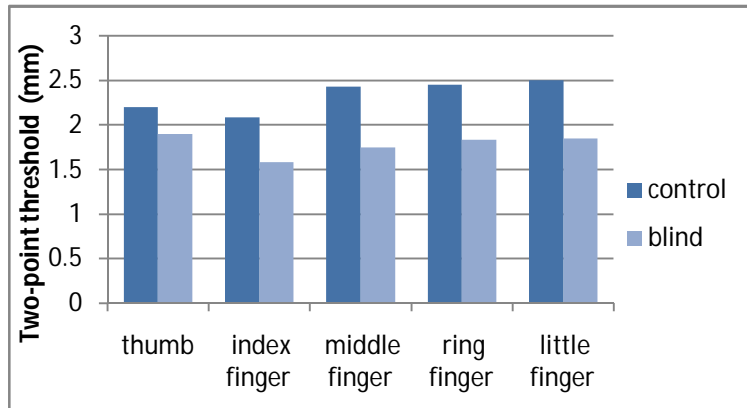
The study was conducted in blind Braille readers and persons with normal vision The method of study was explained to each subject and written informed consent was taken Subjects who voluntarily participated from Kamla Mehta Dadar School for Blind and Saraswati Secondary School, Thane were included Each subject from group A (Blind) was confirmed for complete blindness and Braille reading years more than six years from their registered history They were then asked to read Braille and the finger used for Braille character identification was decided In all 20 subjects, the dominant reading finger was the index finger Each subject from group B (sighted) was blindfolded

The test for tactile discrimination was performed using same Weber's compass aesthesiometer to all the subjects While performing the test forearm was relaxed in a supinated position Two points of the compass were applied perpendicular to distal pads of fingers simultaneously and painlessly⁴Three consecutive readings for fingers with adequate intervals were recorded Mode is considered as final reading Negative tests were also performed in between to reduce bias

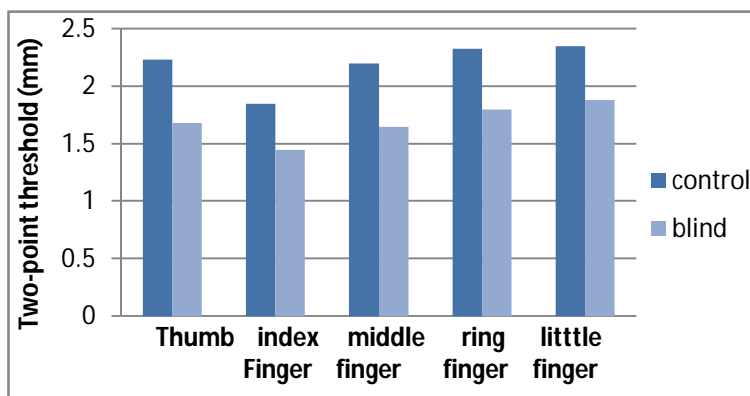
RESULT AND ANALYSIS:

The sample consisted of total 40 girls, 20 each from group A and group B Group A had completely blind girls within age group 13 to 19 years with mean age of 163 years, who were proficient Braille readers (they have been reading Braille for 6 to 11 years) selected from a blind girls school Group B had controls selected from a secondary school of same age group with mean age of 166 years, female gender not exposed to Braille reading

GRAPHICAL REPRESENTATION:



The graph above shows comparison of blinds and controls for right hand



The graph above shows comparison of blinds and controls for left hand

Mean values & t-test were applied to the data collected

Table1 Correlates of right & left all hand fingers of blinds & controls

Finger	Right hand (mm)			Left hand (mm)		
	Blind person (n=20)	Control (n=20)	t value	Blind person (n=20)	Control (n=20)	t value
Thumb	190 ± 048	220 ± 085	136*	168 ± 047	223 ± 088	239†
Index	158 ± 054	204 ± 071	25†	138 ± 056	189 ± 059	222†
Middle	175 ± 034	243 ± 071	4†	165 ± 052	220 ± 066	375†
Ring	183 ± 044	245 ± 081	31†	180 ± 047	233 ± 067	279†
Little	185 ± 040	250 ± 078	325†	188 ± 074	235 ± 067	213†

*p > 005 (Nonsignificant), † p < 005 (Significant), Mean ± SD & t value of tactile discrimination

From the above table, it is concluded that the ability of two-point discrimination is enhanced at fingertips in blinds

DISCUSSION:

This study has demonstrated that the capacity for tactile discrimination at all the fingertips is superior in blind Braille readers as compared to sighted subjects. A similar study performed by R W Van Boven et al contained Grating Orientation Task (GOT)⁵. The mean grating orientation threshold was significantly ($p = 003$) lower in the blind group (104 mm) compared to the sighted group (146 mm). The dominant reading finger in blind subjects had a mean grating orientation threshold of 080 mm, which was significantly better than other fingers tested.

K Sathian and A Zangaladze in their study say that 'the tactile learning is not location specific like visual learning. Instead it gets generalized across other fingers'⁶. The subjects in present study practiced reading Braille for at least six years. This prolonged and consistent reading leads to various adaptive changes in the neural representation. In blind subjects, the sensory homunculus mainly shows increased area of representation for Braille-reading fingers⁷. This may explain why the present study has positive results in other fingers too, though the dominant reading finger is the index finger.

Sadato, N et al performed Functional magnetic resonance test on blind subjects while they were told to read Braille letters. Results show activation of the primary visual cortex by Braille reading in blind subjects⁸. It proves the involvement of unused visual cortex in tactile perception by improving present connections of somatosensory and visual cortex to thus support the concept of cortical plasticity⁹.

The conventional test, the two-point discrimination task, does not measure the minute distances accurately and yields variable results in same subject due to his psychological involvement¹⁰. Statistical insignificance for right hand's thumb may be due to these reason.

These results may help us for rehabilitation of blind Braille readers in occupational tasks involving embossing work, textured surfaces etc where their enhanced tactile sense is used to its optimum. In today's touch-screen era, if we can make embossed computerized surfaces, it will open new doors to the blinds. As this is a pilot study, further experiments can be performed to determine how to improve the sense of touch which may have many applications in later life.

As Braille reading exercises remodeling of neural connections and increased tactile sense. Appropriate exercises, if designed in future, and performed may enhance other senses in human beings by establishment of new neural connections.

SUMMARY:

The present study was conducted to compare the sense of tactile discrimination in blind Braille readers and sighted subjects using Weber's compass aesthesiometer, by applying its two points simultaneously and painlessly on fingertips. Statistically significant results show that the ability of tactile discrimination in blind Braille readers is superior to that in sighted once. These results may help us in rehabilitation of blind Braille readers.

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ORIGINAL ARTICLE**3****AUDIOLOGICAL FINDINGS IN VARIOUS PERSONAL LISTENING DEVICES USERS AND NON USERS****Lopa Vaidya* DrNJShah****

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ABSTRACT

Introduction - It is observed that our young generation is increasingly being exposed to noisy environment, as they remain engage in such recreational activities like listening music on mobile phones, personal music players or through laptops, ipads,ipods They are also attending discotheques, rock concerts and videogames for recreation Unfortunately not much attention is being given to effect of the increasing trend of prolonged exposure to noisy recreational environment in the younger generation of Indians

Aim and Objectives: of this study was to find out mean hearing threshold value and hearing acuity in personal listening devices users and Non users

Materials and Methods – Before commencing pure tone audiometry on total 500 subjects questionnaire was filled by subjects regarding age, sex, self reported hearing problem, duration of usage and type of personal listening devices used by them Pure tone audiometry was performed on subjects Stastical data analysis done by SPSS version 19 and chisquare test

Results- Our results showed that mean hearing threshold level of various personal listening devices were significantly higher than Non users ($P < 0001$) **Conclusion** –Usage of personal listening devices for longer time leads to early hearing loss

Key words: Personal listening devices, mean hearing threshold, hearing acuity

INTRODUCTION –Prolonged excessive noise exposure can induce metabolic and mechanical changes in the organ of corti¹ Occupational noise exposure remains the most commonly identified cause of noise induced hearing loss (NIHL),but leisure time or recreational activities that can produce hazardous noise levels as well Now a days prevalence to occupational noise hazards decreased due to safety measures taken at workplace Unfortunately not much attention is being given to the increasing trend of prolonged exposure to noisy environment,in the younger generation during recreational activity Personal listening devices such as MP3 players,ipods and

mobile phones with music functions has become increasingly popular among younger generation. These personal listening devices can produce sounds up to 120dB at maximum volume settings which is further amplified as much as 6-9 dB with the use of headphones.² Evaluation of hearing threshold across population can be used to observe the difference between people exposed to music from personal listening devices and people who do not use personal listening devices. A study held on Korean adolescents who are using personal listening devices, deleterious effect on hearing threshold is observed.³ A recent study in middle and high-income countries analysed by WHO indicate that among teenagers and young adults aged between 12-35 years, nearly 50 percent are exposed to unsafe levels of sound from the use of personal audio devices.⁴ According to the Indian Council of Medical Research, hearing impairment is on the rise in India. According to a research conducted on 3,000 young adults in Mysore by the All India Institute of Speech and Hearing's audiology department, 66% of them listened to music using modern gadgets, 8% reported reduced hearing temporarily, 97% reported to have ringing sensation in ear, 45% reported blocking sensation in ear, 56% reported heaviness in ear, 7% reported irritation in ear and 134% reported having headaches after listening to music.⁵ The aim and objective of the present study was to assess the hearing acuity of PLD users by measuring mean hearing threshold level by audiometry and compared with Non users.

MATERIALS AND METHODS – Study was carried out in GCS medical college Ahmedabad. Before commencing work ethical clearance was obtained from institutional ethics committee. It is a comparative study held on 500 subjects selected randomly between age group of 18-40 years. Subjects using personal listening devices more than 2 hours included in study and those who are using hearing aids were excluded from the study. Two subgroups were formed: Control group consist of subjects not using personal listening devices and test group consist subjects using

personal listening devices more than 2 hours/day Before commencing audiometry written consent of subjects were taken Test procedure was explained and questionnaire regarding self-reported history of hearing problem, type of listening device used, and duration of usage per day and per year was taken Audiometric test: Performed in sound proof room with (Elkon – Eda – 3n3) pure tone audiometer with headphone Procedure will be demonstrated to subject & instructions will be given to subjects to indicate whether he/she can hear a certain sound or not Pure tone audiometry was performed at frequencies of 250,500,1000,2000,4000 and 8000 HZ And intensity of sound ranges from 10-120dB and audiogram was recorded Stastical analysis was done by SPSS version 19 and chi-square test

RESULTS

Table – I
Demographic details of study subjects

Variables	Groups		Total N (%)
	Test n(%)	Control(n%)	
Male	111(222)	141(282)	252(5045)
Female	139(278)	109(218)	248(496)
Total	250(50)	250(50)	500(100)

Out of 250 subjects of test group 222% were male and 278% were female and out of 250 control group subjects 282 were male and 218 were female

From data obtained from self reported history of hearing problem it was observed that out of 250 subjects using personal listening devices 40% having no hearing problem 1% having defective hearing,38% having complain of ear pain,16% have temporary hearing loss and 36 % complained about tinnitusIn control subjects only one subject having complain about ear pain

Figur1
Type of sound devices used

■Phone ■Phone + Laptop ■Phone + Computer ■ Phone + Computer + Laptop ■Others

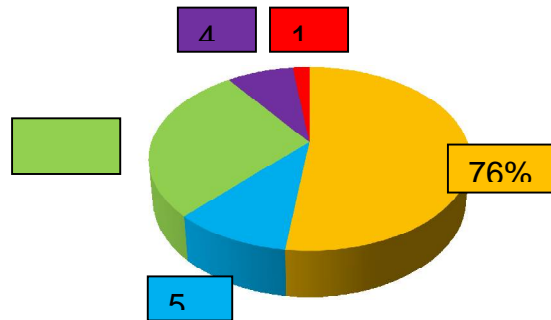
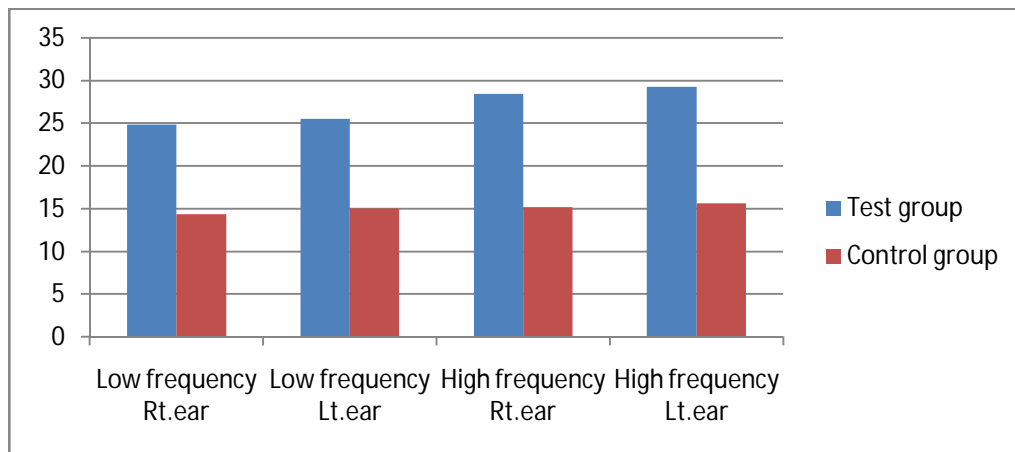


Figure-2
Comparison of mean hearing threshold level in test and control group



Results show stastically significant difference in mean hearing threshold level between test group and control group (P<0001)

Table -II
Audiometric observation regarding hearing loss in Rtear

Observations	Test group n(%)	Control group n(%)	Total (N%)	X2 (P Value)
Normal hearing	116(232)	250(50)	366(732)	18306 (< 0001)**
Minimal hearing loss	61(122)	0	61(122)	
Mild hearing loss	59(118)	0	39(118)	
Moderate hearing loss	14(28)	0	14(28)	
Total	250(50%)	250(50)	500(100)	

Table – II shows degree of hearing loss in test group and control group in left ear Minimal to moderate hearing loss is present in personal listening devices users and hearing loss is not found in non users So results are statistically significant ($P < 0.0001$)

Table – III
Audiometric observation regarding hearing loss in Left ear

Observations	Sound devices users n(%)	Sound devices non users n(%)	Total (N%)	X ² (P Value)
Normal hearing	119(238)	250(50)	369(738)	1735 (< 0001)**
Minimal hearing loss	57(114)	0	57(114)	
Mild hearing loss	58(116)	0	58(116)	
Moderate hearing loss	15 (3)	0	15(3)	
Sever hearing loss	1(0@)	0	1(02)	
Total	250(50%)	250(50)	500(100)	

Table –III shows degree of hearing loss in right ear of test group and control group Results show minimal to sever hearing loss in personal listening devices users and hearing loss is absent in non users So results are statistically highly significant ($P < 0.0001$)

DISCUSSION-

According to the 1990 Noise and Hearing Loss Consensus Conference, “Noise Induced Hearing Loss (NIHL) results from damage to the ear from sounds of sufficient intensity and duration that a temporary or permanent sensorineural hearing loss is produced The hearing loss may range from mild to profound, may result in tinnitus (unwanted head noise) and is cumulative over a lifetime NIHL begins with a temporary threshold shift (TTS) A TTS is defined as a temporary neurosensory hearing loss that recovers almost completely, once the stimulus is removed The extent of TTS depends on intensity frequency, content and temporal pattern of noise exposure⁶ The importance of TTs is that it is rarely apparent to the subject because of its relatively low magnitude & relatively high frequency Repeated TTS over weeks, months & years fail to recover & thereby become a permanent threshold shift TTS are reversible but PTS are not NIHL starts with selective loss of hearing at around 4000HZ³ This is recognized as a V Notch on an audiogram & it is the characteristic audiometric pattern of early NIHL In this study characteristic audiometric V Notch obtained in 14% of personal listening devices users (26 subjects out of 250 subjects) The test group shows higher threshold of hearing compared to control group which is similar to the result of the study of Penge et al, carried his work on 120 Chinese students using personal listening devices and obtained statistically significant difference in pure tone audiometry for hearing threshold level Sulaiman carried his work on 282 PLD users and obtained significantly higher mean audiogram thresholds compared with non-users⁸ Similar results were also obtained in a study done by Manisha et al Outer hair cells are more susceptible to noise exposure than inner hair cells TTS is correlated with decreased stiffness of stereocilia of outer hair cells The stereocilia become disarrayed & floppy TTS may be due to metabolic exhaustion & sometimes referred as a auditory fatigue With loss of stereocilia hair cells die & death of sensory cells¹⁰ can lead to progressive neurodegeneration & loss of primary auditory nerve

fibers. In our study we also found out minimal to moderate hearing loss present in 25.8% of the personal listening devices users.

CONCLUSION-our present study has shown that mean hearing threshold frequency recorded is increased in various sound devices users than Non users. From above tables it is also found out that 57(11.4%) subjects having bilateral minimal hearing loss, 58 (11.6%) subjects having bilateral mild hearing loss and 14 (2.8%) subjects having moderate hearing loss in personal listening devices users while in non users all the subjects having normal hearing.

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Original article

4

EFFECT OF CONTACT LENS CORRECTION ON TEAR FILM:Atanu Samanta¹, Dr Nitin V Trivedi²

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Abstract:

Purpose: This study is conducted to find out changes in tear films take place due to use of contact lenses in Irregular corneal astigmatism. Aim is to evaluate changes in the quantity and quality of tear film with long term use of contact lenses. Method: Slit Lamp Biomicroscopy of the anterior segment (lids, cornea, and conjunctiva) was conducted. During this examination, Bulbar and limbal conjunctiva, lid margins and corneal surface analysis was done. Results: Tear volume: In terms of tear volume Clinically and statistically significant changes are found $P = 189E^{-12}$. Tear film integrity helps to maintain an optically uniform interface between air and the anterior surface on contact lens that would affect visual function. Dogruet *et al*⁴ and Mohd-Ali *et al*⁵ reported that keratoconus patients have poor tear stability compared to normal people. Few studies have reported the effect of RGP contact lens wear on the tear film of eyes with keratoconus. Results from this study showed that prolonged RGP contact lens wear had a significant effect on tear quality of keratoconic eyes. This agreed with a study reported by Moon *et al*⁶ who found that tear film changes in keratoconus could be directly related to contact lens wear. In present study it is clear that all other causes of corneal irregularities also show change in tear volume in contact lens wear. All different RGP lenses as well as soft lens users are showing decrease in tear volume after continuous use of 6 months. TFBT: Thai *et al*⁷ who stated that all contact lenses materials significantly and adversely affected tear physiology by increasing evaporation rate and decreasing tear thinning time. Results from this study agreed Mohd-Ali *et al*⁸ who found minimal changes in tear characteristics after 6 months of continuous wear of Dk value above 90. Present study found significant change in TFBT where the Anova calculation gives the $P = 902E-05$ which is different from the previous finding. All different RGP lenses as well as soft lens users are showing decrease in TFBT after continuous use of 6 months. No significant gender influence was found among the lens wearers. Conclusion: Subjects with irregular corneal astigmatism who wear RGP contact lenses have poor tear stability which needs to be evaluated appropriately during management of such patients; both systemic and ocular signs of dry eye condition should be managed prior and during contact lens wear. In soft lens wearers also tear volume and TFBT shows significant decrease. As per the results practitioner should examine contact lens users in proper follow-up intervals so that if necessary they may manage the tear related alterations if found clinically required. Possible causes could be masking of corneal surface from the lid interactions and reduced sensitivity due to adaptation.

Introduction:

The tear plays very important role in optical performance and the metabolic function of the cornea. In contact lens fitting especially in case of RGP lenses it forms tear lens between the lens back surface and the corneal anterior surface, which mask approximately 90% of the total corneal astigmatism.

As per the study by Jason J Nichols and Loraine T Sinnott on “Tear Film, Contact Lens, and Patient-Related Factors Associated with Contact Lens-Related Dry Eye”¹ suggests that pre lens tear film may get affected with hydrogel lenses but RGP do not alter the quality or quantity of tear film, as the material does not allow much tear film to evaporate through the lens

The normal tear film The tear film is, typically, considered to be a three-layered structure, comprising a mucoidal basal layer, an aqueous component and a superficial lipid layer Functionally, the three major components of the tear film work together to maintain the overall form The lipid and mucus layers have the most influence on the quality of the tear film, while the aqueous layer provides the quantity of tears needed Both quality and quantity of tears are important to maintain the bulk hydration and surface hydration of a soft contact lens The tear film is formed and maintained by blinking As the eye closes during a blink, the lipid layer is compressed between the lid margins The mucin, contaminated by lipid from the tear film breaking up, is moved to the upper and lower fornices from where it is excreted through the tear duct It is replaced by a new layer, which is created by the lids pushing against the eye surface As the eye opens, a new aqueous layer spreads across the now hydrophilic epithelial surface As it is formed, the lipid, which has been squeezed into a thick layer during lid closure, spreads out, producing a new monolayer across the aqueous to reduce tear evaporation The new tear film is a relatively unstable structure Despite the presence of the lipid layer, there is still some tear evaporation that reduces its thickness As this occurs, lipids begin to diffuse towards the mucus The mucus, now contaminated by the lipid, begins to lose its hydrophilicity, and the tear film begins to rupture, leading to isolated islands of tear break-up This is the stimulus for the blink and the cycle to be repeated A normal tear break-up time can be longer than the usual inter-blink period Under non-contact lens wearing conditions, the structure of the tear film can be affected by systemic or ocular medication, general health and a number of ocular conditions, such as keratoconjunctivitis sicca The tears are also affected by age, with changes in both the volume of tear production and stability of the tear film

Method:

Slit Lamp Biomicroscopy: slit lamp biomicroscopy of the anterior segment (lids, cornea, and conjunctiva) was conducted During this examination, Bulbar and limbal conjunctiva, lid margins and corneal surface analysis was done

Tear film evaluation:

To evaluate the tear volume a 35 mm × 5 mm Schirmer test strips was placed at the junction of medial 2/3 and lateral 1/3 of the lower lid in the fornix of the patients eye for 5 min, and after that the strip was removed and the length of moisture part was recorded in millimetres according to the

(<10 mm) and watery (>15 mm) The test was done for both eyes³ Tear film breakup time (TBUT) test was carried using Haag-Streit slit lamp in a bright light and cobalt blue filter The subject's inferior bulbar conjunctiva of the eye was swiped with a saline wetted fluorescein strip The patient was asked to blink several times after that he was asked to stop blinking and his eye was observed through the slit lamp The time between last blink and the appearance of the spots or streaks in the tear film was taken as the TBUT Three readings were taken with

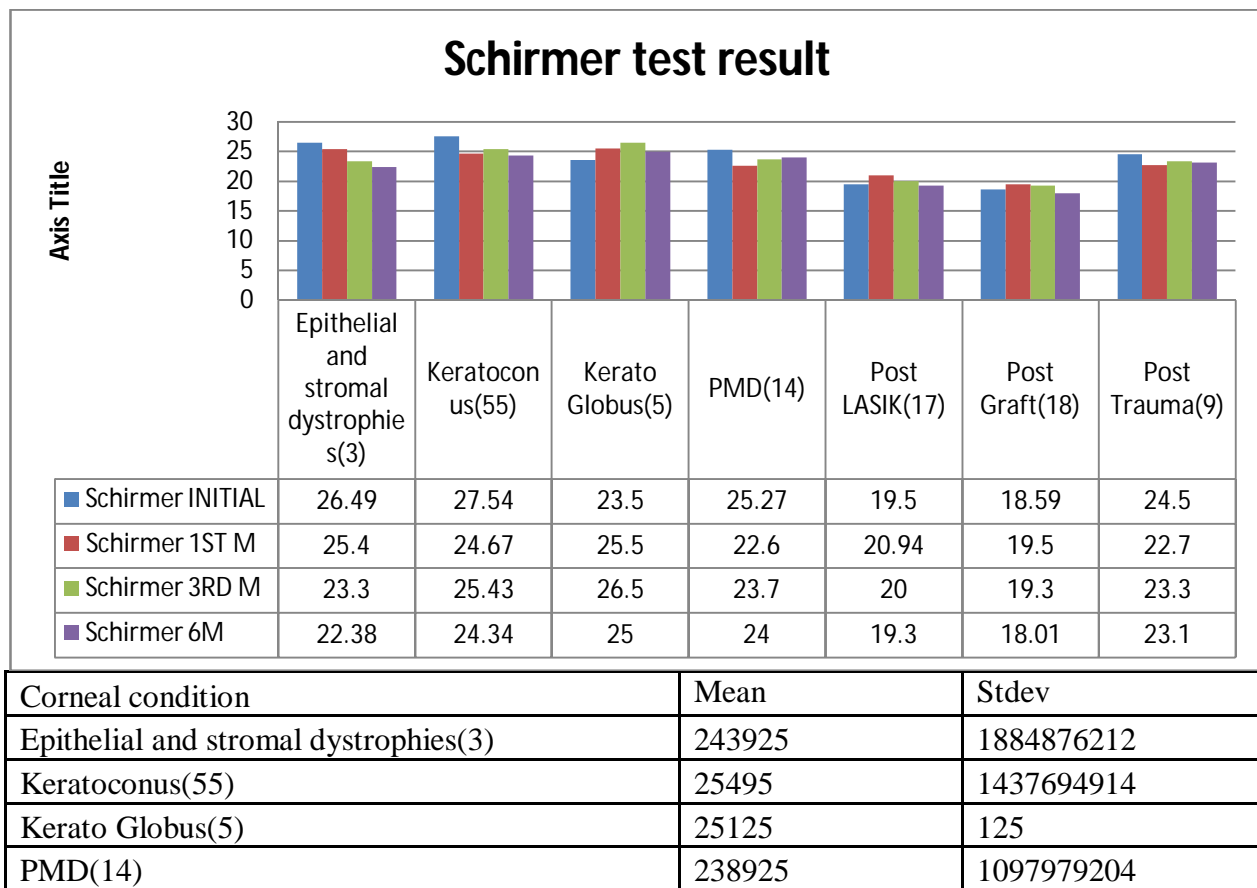
stopwatch, recorded, and then the reading was calculated from the average of these readings. The results were then graded as normal (≥ 10 s) and abnormal (< 10 s).

Statistical Analysis:

One way ANOVA was done with the help of Microsoft excel to compare change in parameters of three follow-up visits. The one-way analysis of variance (ANOVA) is used to determine whether there are any statistically significant differences between the means of two or more independent (unrelated) groups.

Result and Discussion:

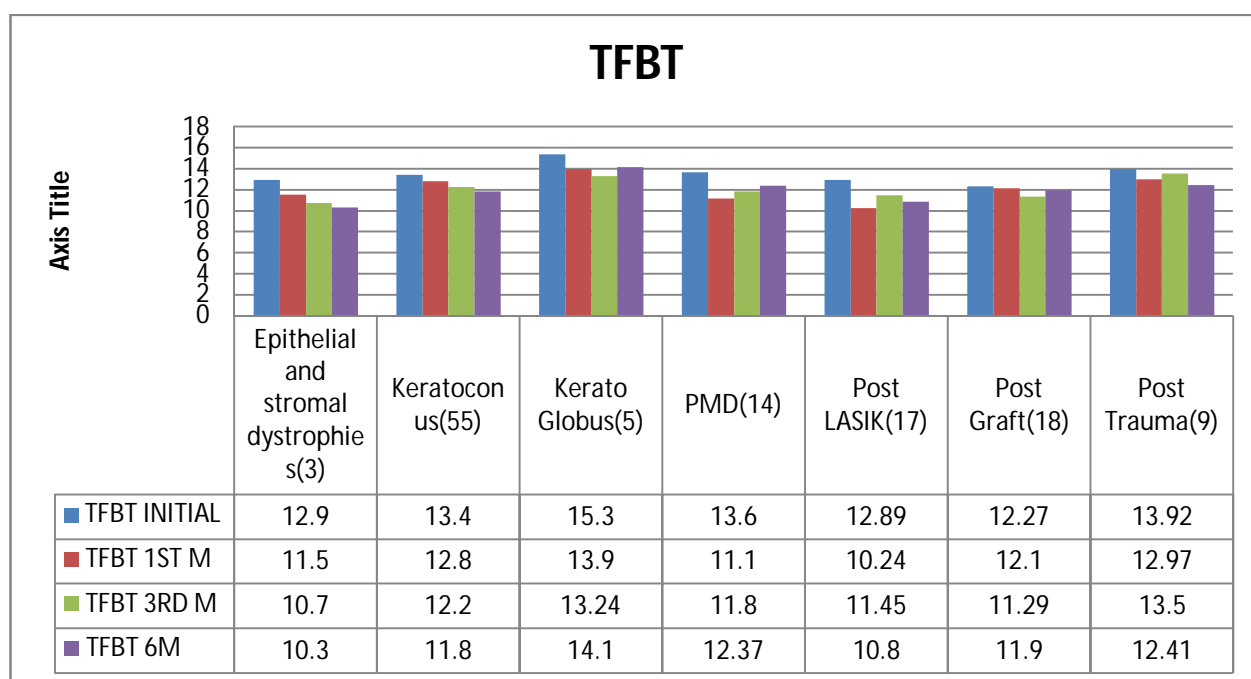
Tear volume: In terms of tear volume, clinically and statistically significant changes are found. $P = 189E^{-12}$. Tear film integrity helps to maintain an optically uniform interface between air and the anterior surface on contact lens that would affect visual function. Dogruet *et al*⁴ and Mohd-Ali *et al*⁵ reported that keratoconus patients have poor tear stability compared to normal people. Few studies have reported the effect of RGP contact lens wear on the tear film of eyes with keratoconus. Results from this study showed that prolonged RGP contact lens wear had a significant effect on tears quality of keratoconic eyes. This agreed with a study reported by Moon *et al*⁶ who found that tear film changes in keratoconus could be directly related to contact lens wear. In present study it is clear that all other causes of corneal irregularities also show change in tear volume in contact lens wear. All different RGP lenses as well as soft lens users are showing decrease in tear volume after continuous use of 6 months.



Post LASIK(17)	19935	0731824205
Post Graft(18)	1885	0682690755
Post Trauma(9)	234	0774596669

TFBT, Thai et al⁷ who stated that all contact lenses materials significantly and adversely affected tear physiology by increasing evaporation rate and decreasing tear thinning time. Results from this study agreed Mohd-Ali et al⁸ who found minimal changes in tear characteristics after 6 months of continuous wear of Dk value above 90. Present study found significant change in TFBT where the Anova calculation gives the $P = 9.02 \times 10^{-5}$ which is different from the previous finding. All different RGP lenses as well as soft lens users are showing decrease in TBFT after continuous use of 6 months.

No significant gender influence was found among the lens wearers.



Conclusion

Subjects with irregular corneal astigmatism who wear RGP contact lenses have poor tear stability which needs to be evaluated appropriately during management of such patients; both systemic and ocular signs of dry eye condition should be managed prior and during contact lens wear. In soft lens wearers also tear volume and TFBT shows significant decrease. As per the results, practitioners should examine contact lens users in proper follow-up intervals so that if necessary they may manage the tear-related alterations if found clinically required. Possible causes could be masking of corneal surface from the lid interactions and reduced sensitivity due to adaptation.

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Original article

5

STUDY OF HEAD INJURY PATIENTS ADMITTED IN THE EMERGENCY ROOM

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Abstract:

Background: Head injury is one of the most frequent presentation of patients in emergency department. Emergency physicians are involved in triage, assessment, investigation and early management of these patients to improve mortality, disability rates, outcome and survival benefit to the patient, their family and society.

Aims and objectives: To study the patients with head injury in view of Glasgow Coma Scale (GCS), presenting symptoms, CT (Computed Tomography) scan findings, severity, associated injuries, disposition and outcome in emergency room.

Materials and method: This observational study included 200 patients above 15 years of age, admitted to the emergency room with head injury. Data was recorded in preformed patient's record form. Data was analyzed by Microsoft Office 2010 and help of a statistician was taken as and when required.

Results: In our study most of the patients were male (74.5%) with age less than 40 years (63.5%). Most common presentation of injured was altered sensorium (32.5%) and commonest mode of injury was road traffic accident (67%). Initial CT scan was normal in 42.5% patients while 18% found subdural hemorrhages, 14.5% contusions, 13.5% extra-Dural hemorrhages and 12% subarachnoid hemorrhages. 91% patients were treated conservatively while 9% required operative intervention. According to GCS, 70% patients had mild head injury while 11% had moderate and 19% had severe head injury.

Conclusion: In our study majority of the patients were of age less than 40 years. Maximum number of patients had history of road traffic accidents as mechanism of injury. Altered sensorium was the commonest clinical presentation. Most of the patients had mild head injury and shifted to the ward while mortality was highest in patients with severe head injury. Immediate assessment and timely intervention by emergency physician helped to grade the severity of head injury and decide further line of management including operative intervention.

Take home message: Early assessment and timely management of head injury patients by Emergency physician can prevent or reduce the rate of secondary brain damage and improve outcome.

Key words: Head injury, GCS, CT Scan, Brain Hemorrhage, emergency physician

Background:

Head injury is one of the most frequent presentations of emergency department following motor vehicle accidents, fall from height, sports and recreational injuries. When patient comes to emergency department, emergency physicians are involved in their Triage, Assessment, Investigation and Early Management. The treatment provided by them plays potential role in outcome of patient as well as family and society¹.

A head injury does not always cause an injury to the brain, and the terms 'head' and 'brain' are used to distinguish between the original injury to the head and consequent injury to the brain respectively. According to the 'Centre for Disease Control'² (CDC), Head Injury (traumatic brain injury-TBI) is defined as:

“Injury to the head, associated with symptoms or signs attributable to injury: decreased level of consciousness, amnesia, other neurological or neuropsychological abnormalities, skull fracture, diagnosed intracranial lesions or death”

Rapid urbanization, industrialization and changing in lifestyle along with various social factors have given rise to many problems amongst which head injury has alarming increase in incidence. Lack of education (illiteracy), awareness and delay in emergency care added further to rising mortality and disability rates so, early management of head injury is critical to survive the patient.

Aims and objectives:

To study the patients with head injury in view of Glasgow Coma Scale (GCS), presenting symptoms, CT (Computed Tomography) scan findings, severity, associated injuries, disposition and outcome in emergency room.

Materials and method:

This is an observational study of 200 patients aged above 15, who came to the emergency department with head injury. In all patients GCS was noted on admission. Detailed history was taken in form of patient's personal data, mechanism of injury. Any history of altered sensorium, any bleeding from ear, nose or throat, convulsion and vomiting was inquired.

Also data were recorded for CT scan findings, presence of skull fractures, mode of treatment, mortality, associated injuries, severity of head injury with immediate mortality, disposition from emergency room. This data was entered in preformed patient record form. The statistical analysis was done by using Microsoft Office 2010. Help of a statistician was taken as and when required.

Observation and result:

Age distribution:

Table-1 shows that majority of the patients (63.5%) were less than 40 years of age with a range of 16-88 years. Our study shows that most of the patients were in the age group of 21-30 years amounting to 22% of total cases. The study done by BP Sharma et al⁴ from Indian Oil Corporation Hospital, Digboi had an incidence of 34% of cases in same group. In our study 63.5% (127)

patients were less than 40 years of age, from productive age group responsible for economy of country

Gururaj et al⁵ had 40% cases of head injury in 21-35 years age group

Sex distribution:

In our study, 745% patients were males and 255% females (Fig 1) comparable to 75% in a study of Gururaj⁵

This male preponderance may be due to the fact that in our country, males are more exposed to automobile and industrial accidents. In most of the Indian families, males are the main source of earning for family. Any mortality & morbidity which affects males predominantly leads to increased economic burden to the family and society.

Mechanism of injury:

Figure-2 shows that maximum no of patients (67%) had road traffic accidents as mechanism of injury followed by fall (25%) and assault (8%)

Various studies are showing different data about mechanism of injury (Table-2)

It shows that our study has maximum no of road traffic accidents as mechanism of injury

Clinical presentation:

Table-3 shows various symptoms present in our patients

1 Altered sensorium:

In our study 325% of patients were presented with altered sensorium, compared to 41% in study done by Sharma A K⁶ et al and 21% by Teemu Louto⁷

2 ENT bleeding:

Any bleeding from ear, nose or oral cavity is a warning sign of basilar skull fracture (Photo-2). In our study 315% of patients had history of ear, nose or oral bleeding at presentation. It was

associated with facio-maxillary injuries and some required tracheostomy for airway management

A study by Anil M Bhole et al⁸ had observed nasal bleeding in 64%, ear bleeding in 18%, ear and nasal both bleeding in 14% of patients

3 Convulsion:

In our study 6% of patients had history of convulsion, which is more in no compared to 2% in a study by klauber⁹ et al at San Diego County Hospital and 45% of Teemu Louto⁷ at Tampere University Hospital, Finland

In head injury patient, convulsion may be caused by increase in intracranial tension due to subarachnoid hemorrhage, subdural hemorrhage or meningeal irritation Focal seizure may be due to discrete cerebral lesion commonly an extradural or subdural hematoma compressing some area of motor cortex

4 Vomiting:

Our study had shown vomiting in 22% (44) patients (table-3) Vomiting alone without loss of consciousness may not be of major importance But in unconscious patients with raised intracranial pressure vomiting is accompanied by bradycardia It may complicate the head injury patient by increasing the risk of aspiration

CT scan findings:

CT scan is the gold standard for diagnosing intracranial hematoma after traumatic head injury (Fig- 3) It allows differentiation between hematoma and contusion, between localized edema and generalized brain swelling In our hospital CT scan was done in all the patients with head injury irrespective of severity of injury Most of the time, ATLS criteria, New Orleans criteria or Canadian head CT rules are followed for advising CT scan for the patients with mild head injury

In our study we found normal CT scan findings initially in 42.5% of patients (Table-4) Amongst all lesions subdural hemorrhage (SDH) was found in 18% (36) patients followed by contusion 14.5% (29), extra-dural hemorrhage (EDH) 13.5% (27), subarachnoid hemorrhage (SDH) 12% (24), cerebral edema 6.5% (13) and Pneumocranium 7% (14) patients respectively (Fig-3) Some patients had multiple findings at same time

Anil M Bhole⁸ et al had studied and found cerebral contusions in 84%, Fractures in 24%, SDH in 22%, EDH in 16% and ICH (intracranial hemorrhage) in 8% of patients while 26% had normal CT scan

Skull fractures:

In our study 12.5% patients had skull fracture, compared to 24% of Anil M Bhole⁸

Skull fractures were seen in X- ray as well as CT scan Our study had a number of patients who remained asymptomatic and alert having skull fracture Those with compound skull fracture are at risk of developing intracranial infection and those with a closed linear fracture have increased risk of developing intracranial hematoma

Mode of treatment and mortality:

According to Table-5, 91% (182) patients were treated conservative or non-operative, while 9% (18) patients were taken for operative management Out of 91% (182) conservatively managed patients, 3% (6) patients with severe head injury were died in emergency department only while no further data recorded for postoperative mortality in patients taken for operative management

Associated injuries:

In our study 20.5% (41) patients had associated other injuries Out of them 14% (28) patients had positive CT Scan findings and associated injuries (Table-6) In 2 patients abdominal injury was detected by FAST but managed conservatively

Severity of head injury with immediate mortality:

In our study 70% of patients had mild head injury and 11% and 19% had moderate and severe head injuries respectively (Table-7) Out of 19% patients with severe head injury, 6 died in emergency room, so mortality rate was 3% in our study

Kohi and Teasdale et al¹⁰ compared the relationship of GCS and outcome of patient in their study and found an unfavorable outcome in 69% of patients with GCS of 3-8 But in their patients they included long term outcome, while in our study we considered only immediate mortality

Miller et al¹¹ had mortality rate of 71% for GCS 3-8; 13% for GCS 9-12 and no mortality for patients with GCS more than 12 but they did not mention duration of observation

Disposition from emergency room:

The patients were received in emergency room, managed and then shifted to other place according to priority

Out of 200 patients 108(54%) patients were shifted to the wards who did not required close monitoring and intensive care, 50(25%) patients required intensive monitoring so shifted to ICU (Table-8) 8(4%) patients with minor head injury had associated extremity fractures so shifted to orthopedic ward 6(3%) patients expired in emergency department itself 18(9%) patients required neurosurgical intervention so they shifted to neurosurgical operation theatre 10(5%) patients had taken discharge against medical advice

Discussion:

Road traffic accidents are a major cause of mortality in India More than 1 million people die due to head injury every year in India In developed countries incidence of head injury has declined due to improved quality of infrastructure, strict laws of driving and awareness amongst people about prevention of accidents and trauma In a developing country like India the situation is

different due to increase in population, poor infrastructure, illiteracy, insufficient facilities, and non compliance of traffic rules such as wearing helmets while on two wheelers So except for prevention nothing can be done for primary damage to brain Early transportation to a well equipped emergency department would result in decrease of mortality & morbidity in trauma patients

Conclusion:

We studied total 200 patients, with maximum no of patients less than 40 years of age and male predominance Majority of cases had history of road traffic accidents and altered sensorium as the commonest clinical presentation Initial assessment by ATLS protocol (ABCDEF), quick neurological examination and Glasgow Coma Scoring helped to grade the severity and decide further line of management CT scan helped to decide further line of treatment and reduce mortality and morbidity Operative intervention was planned depending on Glasgow Coma Scale and CT scan findings Most of the patients had mild head injury and shifted to ward Mortality was highest in patients with severe head injury

Take Home message:

Emergency physician is the first person involved in most of the patient with head injury Immediate transfer of such patients to the facility available, timely intervention and management done by them can prevent or reduce the rate of secondary brain damage

Competing interests: None

Financial disclosure: There is no financial or any other form of support from other persons

Source of funding: self

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Tables:

Table-1 Age Distribution

Age group	No of patients	% of patients
16-20	40	200
21-30	44	220
31-40	43	215
41-50	30	150
51-60	17	085
61-70	14	070
71-80	06	030
81-90	06	030
TOTAL	200	100

Table-2 various study on mechanism of injury:

STUDY	RTA %	FALL %	ASSUALT %	OTHER %
Sambasivan et al ⁹ (1973)	370	3382	1730	1123
Bharti P ³ (1993)	491	2360	2337	0389
Gururaj ⁵ et al (2003)	590	2500	1030	0570
Our study (2014)	670	2500	0800	0000

Table-3 Clinical presentation

Main symptoms	No of patients	% of patients
Altered sensorium	65	325
ENT bleeding	63	315
Vomiting	44	220
Convulsion	12	060

Table- 4 CT scan

findings

CT scan finding	No of patients	% of patients
Cerebral Edema	13	065
Extra-dural Hemorrhage	27	135
Subdural Hemorrhage	36	180

Cerebral Contusion	29	145
Subarachnoid Hemorrhage	24	120
Pneumocranium	14	070
Intra-parenchymal Hemorrhage	02	010
Skull fractures	25	125
Normal	85	425

Table- 5Mode of treatment and mortality

Mode of treatment	No of patient	Mortality
Conservative/Non operative	182	6
Operative	018	-

Table-6Associated injuries

Associated injuries	No of patient	Positive CT Scan finding
Fracture Upper Extremity	09	05
Fracture Lower Extremity	08	05
Fracture Pelvis	04	02
Chest Injury	12	10
Facio-maxillary	04	04
Spine	02	02
Abdominal Injury	02	00
Total	41	28

Table-7Severity of head injury with immediate mortality

GCS	Severity	No of patients	Immediate mortality No of patients
13-15	Mild	140	0
09-12	Moderate	022	0
03-08	Severe	038	6
Total		200	6

Table-8Disposition from emergency room

Disposition	No of patients
Ward	108
Neurosurgical operation theatre	018
ICU	050
Orthopedic ward	008
DAMA*	010

Expired	006
TOTAL	200

*Discharge Against Medical Advice

Figures:

Fig-1 Sex distribution

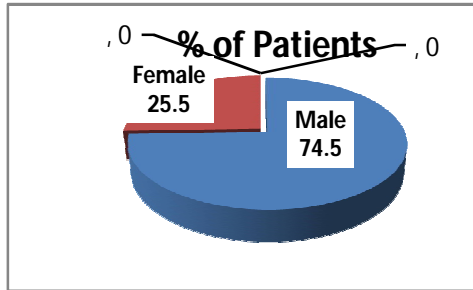


Fig-2

Mechanism of injury

Fig-3: different hemorrhages and fractures of brain



Photo- 1Scalp laceration



Photo-2Periorbital ecchymosis

List of abbreviations:

ATLS- Advanced Trauma Life Support

CT scan- Computed Tomography

CDC- Centre for Disease Control

ENT-Ear, Nose and Throat

GCS-Glass Glow Coma Score

ICH -Intracranial Hemorrhage

ICU- Intensive care Unit

Kg- Kilogram

Mg- Milligram

TBI- traumatic brain injury

Original article**6****A STUDY MANAGEMENT OF ACUTE PANCREATITIS; ROLE OF RECENT CRITERIA IN PROGNOSIS AND MANAGEMENT OF ACUTE PANCREATITIS**Kaushal D Suthar¹, Sruja D Narola², Jay Pandya³, Kush Shah⁴Authors affiliations: ¹associate professor, ² 2nd year surgery resident, ³2nd year surgery resident, ⁴ 1st year resident of oncosurgery Vadilal Sarabhai Hospital, Ahmedabad

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Abstract**Aim :**

- . To compare APACHE-II scoring, C-Reactive Protein (CRP), Interleukin-6 (IL-6) estimation and Contrast Enhanced Computed Tomography in assessing the severity of acute pancreatitis and prognosis of the condition
- . To determine the role of these investigations and the most accurate investigation for the detection of severity of acute pancreatitis and prognosis at 72 hours

Method:

The present study was conducted at the Department of General Surgery, VS General Hospital, Ahmedabad The Study population consisted of first 50 cases of acute pancreatitis fulfilling the inclusion criteria It was a prospective study

Results:

Apache II scoring done at admission predicted severe pancreatitis in 8 cases out of 10 cases which turned out to be severe on Atlanta classification So, there was 2 false negative cases in severe group Apache II score at admission predicted 38 patients as mild pancreatitis thus giving false positive result in 2 cases Pearson Chi-square test of significance was applied for the analysis of the data This clinical scoring done at admission had a sensitivity of 80%, specificity of 95%, positive predictive value of 80%, negative predictive value of 95% and accuracy of 92% Serum CRP level of the patients at admission predicted 7 as severe pancreatitis out of 10 actual cases of severe pancreatitis thus giving false negative result in 3 cases This biochemical assay labeled 26 cases as mild at admission thus giving false positive rate in 14 cases Statistical analysis of the data yielded a p value of 0.07 (Pearson Chi-square test) indicating that the data was statistically insignificant Estimation of serum CRP level at admission had sensitivity of 70%, specificity of 65%, PPV of 33.33%, NPV of 89.65% and accuracy of 66% Serum IL-6 level of the patients at admission predicted 8 as severe pancreatitis out of 10 actual cases of severe pancreatic thus giving false negative result in 2 cases This biochemical assay labeled 36 cases as mild at admission thus giving false positive rate in 4 cases Estimation of serum IL-6 level at admission had sensitivity of 80%, specificity of 90%, PPV of 66.67%, NPV

of 94.74% and accuracy of 88%

Conclusion:

- . Evaluation of the different prognostic indications for the detection of severity at admission showed that Apache II score as well as serum IL-6 were the best indicators of severity. However, due to the complex nature of the calculation, the Apache II score might prove to be cumbersome. Whereas serum IL-6 being costly and not being easily available in the setup is its main drawback. Serum CRP estimation at the time of admission was not accurate to determine prognosis and severity of AP as raised CRP level are dependent of hepatic synthesis secondary to circulating cytokines (IL-6) which usually takes 2-3 days after the onset of disease.
- . Evaluation of the above score again at 72 hours, along with the CTSI score produced an equivocal result. However, when CTSI was compared with Apache II score, IL-6 and CRP for the best possible indicator for detection of severity at 72 hours, CTSI emerged as a favourable prognostic indicator owing to the relative ease of calculation.
- . Key words: APACHE-II scoring, C-Reactive Protein (CRP), Interleukin-6 (IL-6) estimation, Contrast Enhanced Computed Tomography, assessing the severity of acute pancreatitis

INTRODUCTION:

Acute pancreatitis (AP) is a common disease of varying etiology with an overall mortality of 5 to 10%. Most cases (80-90%) are mild and self-limited with a good outcome. The remaining 10 to 20% of patients with severe disease characteristically have pancreatic necrosis or distant organ failure and one can anticipate the need for intensive care and possible operative intervention if required, with a mortality rate of up to 40%. According to the Atlanta Classification, acute pancreatitis can be classified as mild or severe depending on the development of organ failure

and/or local complications¹. The severe form of acute pancreatitis is characterized by the presence of one or more of the following criteria:

- . Ranson score equal to or greater than 3
- . An APACHE II score equal to or greater than 8
- . Failure of one or more systems, such as shock, respiratory insufficiency, renal failure, gastrointestinal bleeding, severe thrombocytopenia and hypokalemia

4 Development of local complications such as necrotizing pancreatitis, abscess formation, or pancreatic pseudocyst²

The severe form of the disease, defined in this way, is present in up to 25% of cases.

Severe acute pancreatitis has two clinical phases. The first phase is characterized by SIRS which lasts for the first ten days. The second phase starts at the end of the second week and is characterized by infectious complications. The first four days are crucial to the evolution of acute pancreatitis, during which 15-25% of patients develop the severe form of the disease. Early aggressive & intensive treatment in the first phase can improve the survival if one can predict the severity at an early stage.

The stratification of injury severity is essential, in order to manage these patients in an intensive care unit with early and aggressive treatment and in order to improve outcome because of its potential for catastrophic deterioration

Both anatomic and physiologic criteria are used to stage the severity of acute pancreatitis^{2,3,4}
The most common anatomic method of staging is based on contrast-enhanced computed tomography imaging Balthazar and Ranson developed a grading system for severity based on CT findings This computed tomography severity index (CTSI) is derived by assessing the degree of pancreatic and peripancreatic inflammation, fluid collection and parenchymal necrosis^{5,6}

Balthazar and Ranson⁶ have shown that contrast-enhanced computed tomography assessment correlated with the clinical course of the disease and with the prediction of mortality They found a 3% mortality rate in patients with a CTSI score greater than 3 whereas patients with a CTSI score greater than 7 had a mortality rate of 17% Similarly, the higher CTSI scores in severe pancreatitis cases with local and/or systemic complications have predicted the complicated course of the disease when compared with the CTSI score of the mild group

Several scoring systems to assess the severity of pancreatitis have been developed Ranson established 11 objective factors in order to identify severity in patients with acute pancreatitis Since 69% of these cases were related to alcohol, Ranson revised the criteria for patients with biliary pancreatitis Imrie modified Ranson's prognostic scoring system and reduced the factors to nine Buter et al modified the Imrie criteria by deleting age factor Blarney et al also modified the Imrie criteria by including the age factor and deleting transaminase The acute physiology and chronic health evaluation II system of disease severity assessment was developed by Knaus et

al² The severity scoring system of the acute physiology and chronic health evaluation (APACHE II) was applied by Larvin and McMahon in the setting of acute pancreatitis and it was

demonstrated that those with scores higher than 7 were likely to have severe disease⁷ The APACHE II system is complex and has a low accuracy rate in identifying local complications

The acute phase reactant C-reactive protein (CRP) is the best established and most available predictor of inflammation^{8,9} Serum CRP is an acute phase reactant, which is elevated in various inflammatory conditions, and serves as a non-specific inflammation marker It is easy and economical to measure the serum CRP level CRP is a proven predictor of severity for acute pancreatitis when serum level over 120 mg/L is measured within 48 hours after the onset of symptoms IL-6 is the principal cytokine mediator of synthesis of acute phase proteins like CRP and fibrinogen Levels of >400 pg/ml is indicative of inflammation¹⁰

The purpose of present study is to assess the predictive value of the various methods for assessing the severity of pancreatitis and to make an attempt to find out the method which can predict the severity at an early stage and help guide the further management and reduce morbidity and mortality related to it

METHODOLGY:

The present study was conducted at the Department of General Surgery, VS General Hospital, Ahmedabad The Study population consisted of first 50 cases of acute pancreatitis fulfilling the inclusion criteria It was a prospective study

Inclusion Criteria:

All patients with diagnosis of acute pancreatitis above 18 years of age were included in the study if they did not fall in the exclusion criteria

Exclusion Criteria:

Patients with previous history of attacks of acute pancreatitis, patients with traumatic pancreatitis and those with immunosuppression were excluded from the study

Methodology:

All patients presenting to the hospital, from August 2014 to May 2016, with diagnosis of acute pancreatitis not falling in the exclusion criteria were evaluated and followed up for 6 months Diagnosis of acute pancreatitis was based on typical clinical history of severe acute onset upper abdominal pain radiating to back, persisting for more than 24 hours and associated with raised serum amylase and/or serum lipase more than 3 times to the upper limit of normal Written informed consent was obtained from all patients for the willingness to participate in the study The patient had the right to opt out of the study without compromising their right to get treatment

All patients underwent the following investigations at the time of admission:

-
- . Hemoglobin, Hematocrit, Total leukocyte count (TLC)
 - . Liver function tests including total serum albumin (in g/dl)
 - . Blood urea and Serum creatinine
 - . Serum Electrolytes
 - . Serum Amylase
 - . Serum Lipase
 - . Random blood sugar
 - . Serum Calcium
 - . Ultrasound Abdomen to rule out any other associated pathology, gall stones, common bile duct stone & size of common bile duct APACHE-II scoring was done at the time of admission and at 72 hours Value of ≥ 8 at admission and at 72 hours was taken as indicator of severe acute pancreatitis CRP estimation was carried at the time of admission and at 72 hours Cut off value of >12 mg/dl was taken as indicator of severe acute pancreatitis IL-6 estimation was done at the time of admission and at 72 hours after Severity of pancreatitis was correlated with serum levels of IL-6, with severity being stamped at >400 pg/ml Contrast Enhanced CT abdomen was done at 72 hours CT severity index (CTSI) was calculated by combining the scores of pancreatic inflammation and pancreatic necrosis An index of 5 & above was taken as severe acute pancreatitis Severity of acute pancreatitis was assessed on the basis of APACHE II scoring, CRP estimation, IL-6 estimation and Contrast Enhanced Computed Tomography findings and compared

with each other to determine the prognosis and further management All these patients were managed as per the standard guidelines for acute pancreatitis Assessment of severity was performed at admission and at 72 hours on the basis of Atlanta classification ie local complications or development of organ failure or both Severe acute pancreatitis was defined based on systemic and local complications

The systemic complications included in the severity were:

- Organ failure: Shock (systolic blood pressure <90 mm Hg), Pulmonary failure (PaO₂ <60mm Hg), Renal failure (creatinine level >2 mg/dl after rehydration) or Gastrointestinal bleeding (>500 ml/24 hours) □
- Systemic fibrinolysis: Disseminated intravascular coagulation (platelets □ 100,000 /cubic mm, fibrin split products >80 □ □ g/dl) □
- Severe metabolic disturbance: Serum calcium level <748 mg/dl

The local complications in the severity were:

- Pancreatic necrosis (an area of more than 3 cm diameter or involving more than 30% of pancreas in CT and contrast density increase < 50 Hounsfield units in the area of necrosis after intravenous administration of contrast medium In addition, pancreatic necrosis or peripancreatic necrosis defined at surgery characterize SAP)
- Acute fluid collections (occur early in the course of AP, and are located in or near the pancreas, and always lack a wall of granulation or fibrous tissue) □
- Abscess (a circumscribed intra-abdominal collection of pus, usually in proximity to the pancreas, containing little or no pancreatic necrosis, which arises as a consequence of AP or pancreatic trauma)
- Pseudocyst (a collection of pancreatic fluid enclosed by a wall of fibrous or granulation tissue, which arises as a consequence of AP, pancreatic trauma or chronic pancreatitis)

Apache-II score

In all the patients diagnosed with acute pancreatitis, APACHE II score was calculated as per the standard guidelines at admission and at 72 hours A score of ≥8 at admission and at 72 hours was considered significant to predict a severe attack

Estimation of CRP:

Serum CRP was determined at admission and at 72 hours at the Dept of Biochemistry Cut off level for CRP was kept at >12 mg/dl

Estimation of IL-6

Serum IL-6 was determined at admission and at 72 hours Cut off level for IL-6 was kept at >400pg/ml

ELISA designed to measure IL-6 in cell culture supernates, serum, and plasma It contains recombinant human IL-6 and antibodies raised against recombinant human IL-6 and has been shown to accurately quantitate the recombinant factor This assay employs the quantitative sandwich enzyme immunoassay technique

Computed Tomography Severity Index

CECT abdomen of the patients was done at 72 hours of admission, in the Dept of Radio-Diagnosis, 64 slice Computed Tomography scanner

Low osmolar, non-ionic, iodinated contrast was used for obtaining the contrast films The contrast was given at a dose of 1 ml/kg body weight

The computed tomography severity index (CTSI) is derived by assessing the degree of pancreatic and peri-pancreatic inflammation, fluid collection and parenchymal necrosis The maximum score of CTSI is 10

A score of ≥ 5 is taken as an indicator of severe acute pancreatitis

RESULTS:

The analysis of the data obtained from this study gave the following results The tests for statistical significance were applied where appropriate A result was considered significant when the p value was less than 05

TABLE 1 AGE DISTRIBUTION OF PATIENTS

Age interval (in years)	Number of Patients
≤ 20	2
21-30	7
31-40	21
41-50	6
> 50	14

The average age of the patients in this study was 42 years The patients in the fourth decade constituted a majority of the population (42%) included in the study A total of 4% patients were ≤ 20 years of age, 14% were 21 to 30 years of age, 42% were 31 to 40 years, 12% were 41 to 50 years and 28% were > 50 years age group The youngest patient in the study was 20 years old and the oldest was 65 years old

TABLE 2 SEX RATIO OF PATIENTS

Sex	Number of patients
Female	15
Male	35

The study included 35 (70%) male patients and 15 (30%) female patients The cases were recruited without any gender bias

TABLE 3 ETIOLOGY OF PANCREATITIS

Etiology	Number of Patients
Gall Stone Disease	11
Alcohol	30
Idiopathic	9

The study consisted of 11 patients of AP secondary to cholelithiasis (22%), 30 patients had alcohol (60%) as the etiology and in 9 patients a clear cause of the disease was not evident (18%)

TABLE 4 SEVERITY OF ACUTE PANCREATITIS

Severity	Number of Patients
Mild	40
Severe	10

The patients were classified into the mild group and the severe group as per the Atlanta Classification as described in the section of material & methods This classification has been considered as the gold standard for this study As per the classification, 40 (80%) patients had mild pancreatitis and 10 (20%) patients had severe pancreatitis

TABLE 5 CLINICAL OUTCOME

Outcome	Number of Patients
Discharge	45
Death	5

A total of 5 (10%) deaths were recorded during the study. Out of five deaths, four were due to multiple organ failure, due to infected necrosis or pancreatic abscess & remaining one death was due to peritonitis resulting from pancreatic ascites. Rest of the patients were discharged when their clinical and biochemical parameters returned to the normal. All mortalities were recorded in the severe group as per Atlanta Classification.

TABLE 6 COMPLICATIONS

Complications	Number of Patients
Multiple Organ Failure	4
Necrosis	5
Infected necrosis	3
Pleural effusion	6
Pancreatic abscess	1
Pseudocyst	2
Infected pseudocyst	1
Pancreatic ascites	1

COMPARISON OF APACHE II SCORE, SERUM CRP AND IL-6 LEVELS AT ADMISSION

IN DETERMINING THE SEVERITY OF ACUTE PANCREATITIS

Criterion	Apache II Score	Serum CRP	Serum IL-6
Sensitivity	80%	70%	80%
Specificity	95%	65%	90%
Positive Predictive Value	80%	3333%	6667%
Negative Predictive Value	95%	8965%	9474%

COMPARISON OF APACHE II SCORE, SERUM CRP, IL-6 LEVELS AND CTSI SCORE AT 72 HOURS IN DETERMINING THE SEVERITY OF ACUTE PANCREATITIS

Criterion	Apache II Score	Serum CRP	Serum IL-6
Sensitivity	80%	80%	80%
Specificity	100%	85%	95%
Positive Predictive Value	100%	5714%	80%
Negative Predictive Value	9524%	9444%	95%

DISCUSSION:

Acute pancreatitis is a common ailment encountered by the surgeons, in any part of the world, and forms a good proportion of emergency admissions in emergency unit. It is of utmost importance to make an early diagnosis and assess the severity of acute pancreatitis in the beginning, to identify those patients with severe or necrotizing disease who will benefit from an early intensive care therapy. Additionally, in view of new therapeutical concepts (eg antibiotic therapy in severe forms) and for the evaluation of new drugs, patients should be staged into mild and severe disease as early as possible. In most cases, it is difficult to assess the severity clinically on hospital admission. This study was conducted to compare between Apache II scoring, serum CRP, serum IL-6 levels and Contrast Enhanced Computed Tomography findings in assessing the severity of acute pancreatitis and to guide prognosis and management. This study was also aimed at identifying the investigation best suited for detection of severity of the condition at 72 hours.

Majority of patients in our study were in the age group of 31-40 years (42%) followed closely by patients over the age of 50 years (28%) The age range was 20-65 years The average age of the patients in our study was 42 years

In our study, males outnumbered females and the male to female ratio was 23:1

AP among males is the fact that alcoholism forms the major cause of pancreatitis Alcohol induced pancreatitis is more often seen in males In our study, also cases related to alcoholism were males Female patients were significantly affected with Gall stone disease as compared to male patients

The commonest etiological factor in our study was alcoholism ie alcohol (60%) followed by gallstones (22%) 9 patients were idiopathic (18%) in nature In a study by W Uhl et al the incidence of biliary tract pathology was in the range of 36-38% Marshall J B, in a study found that biliary pathology and alcohol account for 60- 80 % cases of AP Steinberg et al mentioned that biliary disease is the most common cause of AP in the United States, Asia and most of Western Europe

10 patients (20%) in our study developed severe pancreatitis according to Atlanta classification The remaining 40 patients (80%) had mild pancreatitis Similar results were seen in other studies Marko Lempinen et al noted development of severe pancreatitis in 28% of their cases Winslet et al recorded severe pancreatitis in 27% of admitted patients

Out of the 50 patients in the study, there was mortality in 5 patients (10%) and all of them belonged to severe group according to the Atlanta classification The cause of death was multiple organ failure secondary to sepsis due to infected necrosis or pancreatic abscess in 4 cases and one death due to peritonitis due to pancreatic ascites The multiple organ failure encountered was respiratory failure Steinberg noted a mortality of 2-9% in his study Mannel al, Banerjee et al, and Grönroos et al separately noted that in acute pancreatitis the average mortality rate approaches 2-10% The probable reason for the increased mortality rate in our study may be due to the fact that the sample size in the severe group was small

The various complications noted in our patients belonging to the severe group (n=10) in order of frequency were necrosis (5/10), pleural effusion (6/10), multiple organ failure(4/10), infected necrosis (3/10), pancreatic abscess (1/10), pseudocyst (2/10), pancreatic ascites (1/10) The mild group also showed <30% necrosis in 2 patients (2/20) and one patient of the two presented later during follow-up with infected pseudocyst Beger et al noted the incidence of complications in the natural history of pancreatitis as being pancreaticoedema in 71%, sterile necrosis in 14%, infected necrosis in 6%, pancreatic abscess in 3% and pseudocysts in 6 % cases Viedma et al, Lankisch et al, and Toh et al noted that respiratory failure was the most common type of organ failure in AP

CONCLUSION:

In conclusion, we would like to state that, Apache II score or serum IL-6 can be used as a prognostic indicator of severity of AP at admission, based on which a proper triage and further management can be initiated for the correction of systemic complications Once the condition of the patient stabilizes and 72 hours have elapsed, a CECT abdomen scan of the patient is to be

done for the proper staging of the patient based on local complications and for guiding the management of the same

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Original article

7

A COMPARATIVE STUDY OF CAL (COMPUTER ASSISTED LEARNING) VERSUS CONVENTIONAL METHOD FOR TEACHING EXPERIMENTAL PHARMACOLOGY

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Abstract/Executive summary

Title - A comparative study of CAL (Computer Assisted Learning) versus conventional method for teaching experimental pharmacology

Introduction - CAL or computer assisted learning demonstrates all the steps of the experiment in the form of a simulation The students perform the experiment virtually and observe the effect of different drugs by themselves in computer lab

Aims and objectives - To compare the effectiveness of CAL versus conventional method for teaching experimental pharmacology by assessing the students' understanding of the practical exercise

Methodology – A comparative study was carried out on 102 2nd year MBBS students who were randomized in two groups One group was exposed to conventional method and another group was taught using CAL Both the groups underwent an MCQ test pertaining to the experiment The groups were then crossed over for the next experiment This was also followed by an MCQ test A feedback regarding their perception about CAL v/s conventional teaching was taken from both students and faculty Statistical test was applied to compare the results of the two groups All required ethical permissions were taken

Results – There was a statistically significant difference (p value < 0001) between the MCQ scores of the two groups It clearly indicated that students could understand the experiment better when taught by CAL The feedback given by both students and faculty favored the use of CAL

Conclusion – Results of the study showed that students learn better by using CAL so it should be implemented as the teaching and learning method in experimental pharmacology

Key words – simulation, teaching, experimental pharmacology

Introduction

Pharmacology curriculum is incomplete without practical sessions Practical sessions demonstrate the effect of drugs on isolated tissues or intact animals thus strengthening the theoretical concepts taught in lectures Thus laboratory based practical classes are an important aspect of both teaching and learning pharmacology^(1,2) Previously, a large number of animals were required and were sacrificed during each experiment for demonstrating the already established action of drugs⁽³⁾ There were representations from the organizations like PETA which opposed such cruel use of animals In India, animals for experiments were being procured from unauthorised small vendors but modified CPCSEA guidelines ban the procurement of animals from unauthorized sources⁽⁴⁾ All this made the animal experiments difficult to demonstrate to the undergraduate students The Medical Council of India (MCI) has issued guidelines

underlining that at undergraduate level, animal experiments need not be performed and instead use of CAL should be incorporated

As a CAL laboratory is not available in most institutes, they have replaced the animal experiments with theoretical teaching of the experiment There is lecture on the procedure of the experiment and the response of the drug is shown by drawing it on the blackboard or by showing older tracings of the experiment Many students find it difficult to learn theoretical concepts of autonomic nervous system in the absence of a robust practical experiment

As students are well versed with the use of computers, they find CAL convenient, easier to perform and user friendly It has an interactive interphase where drug effects can be visualized very clearly Students can work in groups and observe the experiment at the same time ^{(5,6)(7)}

There are studies which describe CAL as a teaching-learning tool and students perception about it ⁽²⁾⁽⁸⁾⁽⁹⁾ However, studies regarding its effectiveness are limited ⁽¹⁾⁽⁵⁾⁽¹⁰⁾

This study was undertaken to evaluate the effectiveness of CAL as compared to the theoretical conventional method of teaching experimental pharmacology by assessing the student's understanding of the pharmacology practical on drugs acting on autonomic nervous system A secondary objective was to assess the perception of undergraduate students and faculty of Pharmacology Department regarding CAL

Methodology

A prospective comparative interventional crossover study was conducted at Department of Pharmacology, AMC MET Medical College, Ahmedabad during the period of 6 months from October 2017 to March 2018 The study was approved by Institutional review board The study included 102 undergraduate medical students (2nd year MBBS) A written informed consent for the study was taken from the students

Inclusion criteria

All students who give informed consent

Exclusion criteria

The students who were absent in any of the practical session during the study period

Study procedure

It was decided that two experiments (one in vivo and in vitro each) namely "Effect of drugs on rabbit's intestine" and "Effect of drugs on dogs BP" would be included in the study

Faculty involved in the study was familiarized with CAL software and its use

Authors prepared MCQ tests for both the experiments to test the knowledge and skills acquired about the experiment and mechanism of action of various drugs A feedback questionnaire for both students as well as faculty was prepared to assess their perception regarding CAL was prepared and validated by the senior faculty of the department

The students were divided into two batches A and B of 51 each For the experiment "Effect of drugs on the rabbit intestine" Batch A was taught using the conventional method In conventional method the students were explained the experiment orally and the response of the drug was drawn on the blackboard They were also shown the old tracing of the experiment Batch B was taught using CAL software Ex-Pharm Pro This software has programs of various experiments This software explained the choice of animal for the experiment, equipment used in the experiment, drug of choice for anesthesia in case of in vivo experiment It has an interactive interface showing the effect of various drug and their different doses on the isolated tissue or different parameters like BP, heart rate, respiration in intact animal The user can conduct

experiments and collect data Each program can be run in two modes (a) Tutorial mode (b) Examination mode The students worked in a group of 4 on one computer An MCQ test consisting of 10 items was given in both the batches after the practical Students had the choice of being anonymous and were informed that the marks of the MCQ test will not be included in internal marking The batches were crossed over for the next experiment "Effect of drugs on dog's Blood pressure" after 1 week and were again given an MCQ test of 11 items The same faculty member conducted the experimental practical by conventional method for both the batches Same applied for the experiment conducted using CAL After both the batches had been exposed to CAL a feedback regarding their experience and preference for the teaching methodology was taken from students as well as faculty by using a feedback questionnaire based on Likert Scale

Evaluation was done by assessing the performance of the students in the given test in both the batches Mean score of the students of both the batches for both experiments was calculated Comparison was done between the results of tests of conventional study group and CAL group using unpaired t test and p value was calculated The p value of <005 was considered significant The feedback form filled by students as well as faculty was also assessed and percentages were calculated for different responses on the Likert scale

RESULTS

The marks of both the MCQ test of the 102 students were calculated It was found that the mean score in the MCQ test of 10 marks for the experiment "Effect of different drugs on rabbit's intestine" was 656 ± 158 for the CAL group, while it was 531 ± 2053 for the group taught by traditional method Unpaired t -test was applied and the p value was found to be < 0001 which is statistically significant (Table 1)

Mean score in the MCQ test of 11 marks for the experiment "Effect of different drugs on dog BP" was 541 ± 194 in the CAL group as compared to 387 ± 136 in the traditional teaching group The p value was found to be <00001 which is statistically significant (Table 1)

The response to the feedback questionnaire filled by the students showed that 64.65% students preferred CAL as the teaching learning method as compare to conventional method for experimental pharmacology A majority of the student found CAL a more time efficient (65.51%) and interesting way of learning (66.37%) experimental Pharmacology as compared to the conventional method (Fig1) The result of the questionnaire elucidate that the students prefer CAL over conventional teaching method

In the feedback form students were required to grade CAL as teaching learning method compared to conventional method regarding clarity of procedure, student's involvement, material used and understanding of the concept Majority students graded CAL as "very good" or "good" teaching learning method regarding clarity of procedure (30% & 40.5% respectively) students' involvement (20% & 48% respectively), material used (25% & 50% respectively) and understanding the concept (28.50% & 44% respectively) as compared to the conventional method (Fig2)

Faculty feedback was taken regarding their perception about CAL as teaching learning tool for experimental pharmacology The faculty feedback also favoured the use of CAL as a teaching learning method The faculty felt that student enjoyed the teaching learning experience using CAL They also responded that it was a more time efficient and interactive way of teaching experimental pharmacology The limitations of the use of CAL was that technical support in the form of computer lab, antivirus programme is required Secondly it is a costly software

Moreover, it shows only the preprogramed experiments so any new experiment cannot be performed using CAL

TOPIC	TRADITIONAL METHOD	COMPUTER ASSISTED LEARNING
EFFECT OF DIFFERENT DRUGS ON RABBIT INTESTINE	MCQ (10) 531±2053	MCQ (10) 656 ± 158
	P VALUE <0001	
EFFECT OF DIFFERENT DRUGS ON DOG BP	MCQ (11) 387±136	MCQ (11) 541± 194
	P VALUE <00001	

Table 1 Mean score in MCQ test

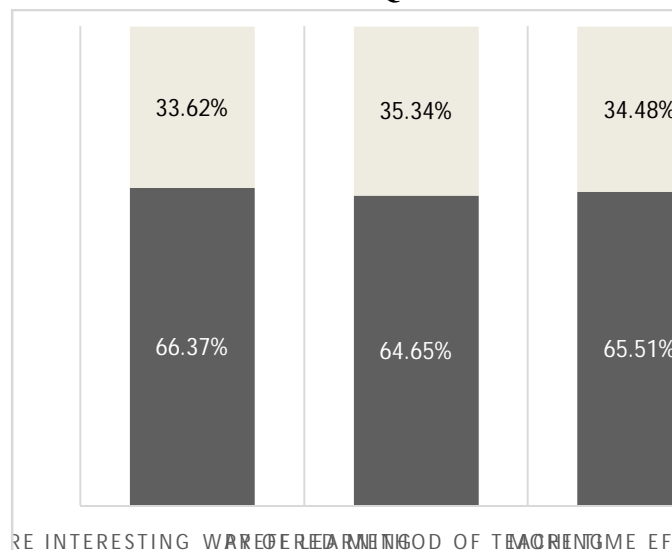


Fig1 students' feedback regarding CAL as compared to conventional method

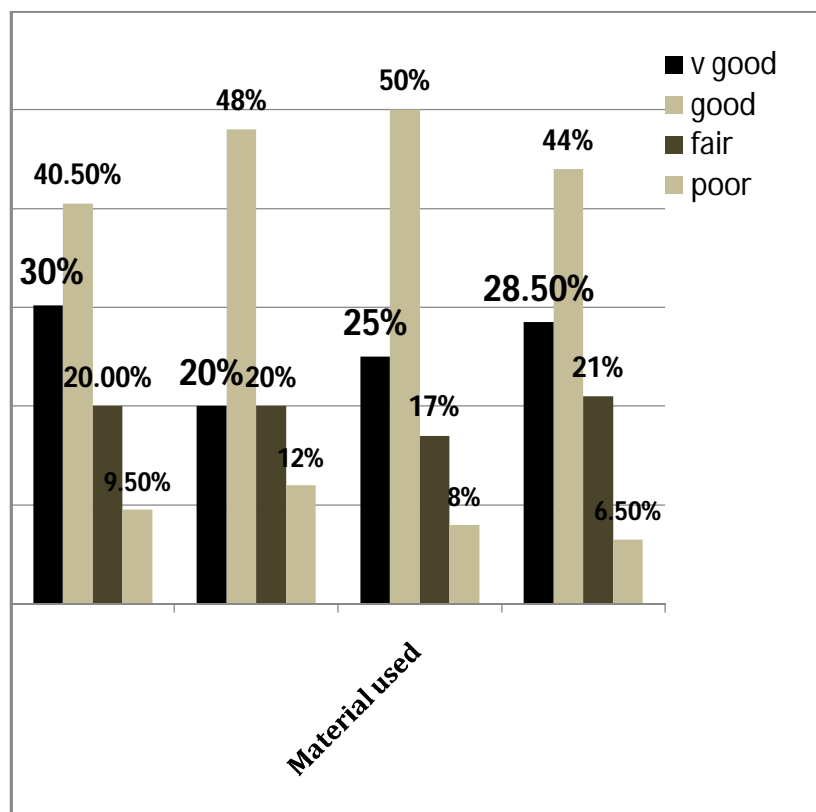


Fig 2 Students feedback regarding CAL on 4-point Likert scale

Discussion

In this study done on the 2nd prof MBBS students it was found that there is statistically significant difference in the performance of the students taught using CAL as compared to the students taught by conventional method in the MCQ test given to both the groups. The feedback given by the students in our study found that students favoured CAL over conventional method of teaching experimental pharmacology. CAL demonstrates the step wise process of the experiments starting from choosing animal, a video of the dissection of the animal in case of isolated tissue experiment, type of anaesthesia in case of in-vivo experiments, instruments used, and an interactive interface showing the effect of drug. The students found there was more clarity of the procedure of the experiment when using CAL as compared to the conventional method. These results concur with previous research done where students gave the feedback that it was much easy to understand the procedure as they were able to visualise the process with CAL⁽¹⁾⁽²⁾

In the feedback given by the student as well faculty in our study CAL was a more time efficient way of demonstrating the experiments. Similar results were reported in the study by A Kuruvilla et al⁽²⁾

In our study there is a statistically significant difference in the scores of the students taught by CAL as compared to those taught by conventional method. In a study done by Amirtha Ret al improved performance of undergraduate students in terms of mean score and number of students

scoring more than 50%, showed superiority of CAL over conventional teaching as a teaching tool⁽⁵⁾

As students nowadays are well versed in technology, they gave the feedback in favour of the material used in CAL. CAL is not only convenient to use but because of the interactive interphase students find this a more interesting way of learning. Similar findings were reported in earlier studies in India, Malaysia and Australia⁽¹⁾⁽⁵⁾⁽¹⁰⁾⁽⁸⁾

Faculty feedback also favoured use of CAL as CAL has better visual recall. They reported that this was an interactive way of teaching. The disadvantage of CAL reported in the faculty feedback in our study was dependence on the computer technical problems which may arise during the session. These findings have also been reported in the earlier studies⁽¹⁾⁽²⁾⁽¹¹⁾

Limitation of this study is that only two experiments were considered for the study. More such studies are required to establish the advantage of CAL over the conventional method of teaching experimental pharmacology.

Conclusion

In this study CAL was found to be more effective than conventional method in teaching the concepts of autonomic experimental Pharmacology. Computer assisted learning of experimental Pharmacology can easily replace the conventional method. CAL is an active method of learning. Students learn by doing thus it improves their performance and overall learning experience. Source of Support: Nil Conflict of interest: None declared

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Original article

8

INTRA-OPERATIVE ASSESSMENT OF LAPAROSCOPIC CHOLECYSTECTOMY

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Introduction:-

Gallbladder-related disease is now one of the commonest indications for elective and emergency surgery Management of cholecystitis and its complications has evolved dramatically¹ There have been significant paradigm shifts in the management of patients since the introduction of laparoscopic cholecystectomy in the mid 1990s² Laparoscopic cholecystectomy is the current gold standard for the treatment of symptomatic cholelithiasis³ But the severity of cholecystitis may be different in every patient and performing laparoscopic cholecystectomy may be difficult accordingly Conversion from laparoscopic to open cholecystectomy is the essential part of the safe surgical practice if the anatomy is unclear, if complications arise, or if there is failure to make reasonable progress in a timely manner⁴ Recently the importance of index admission laparoscopic cholecystectomy has been highlighted⁵ In many large series and meta analyses detailed patient demographics and imaging findings have been recorded A number of international guidelines recommend pathways of care Attempts have been made to standardize definitions particularly relating to cholecystitis^{6,7}

Despite these advances, significant variability in approaches to care and outcomes in gallbladder disease management are reported⁸ While a number of preoperative scoring systems are reported there is no operative classification of findings at laparoscopic surgery^{9,10} This limits the ability to compare outcomes or provide a common benchmark for future research This prospective study was aimed to assess and grade the degree of difficulty in laparoscopic cholecystectomy and their postoperative outcome using intraoperative scoring system devised by Sugrue M et al

Aims & Objectives:-

- ✓ To study a scoring system for intra-operative findings at laparoscopic cholecystectomy, to grade the degree of difficulty in the surgery

Methodology:-

Sample Size: 50 Patients

Sources of Data: Patients undergoing major general surgical procedures, admitted under department of general surgery of AMC MET Medical College, Ahmedabad from June 2017 to June 2018

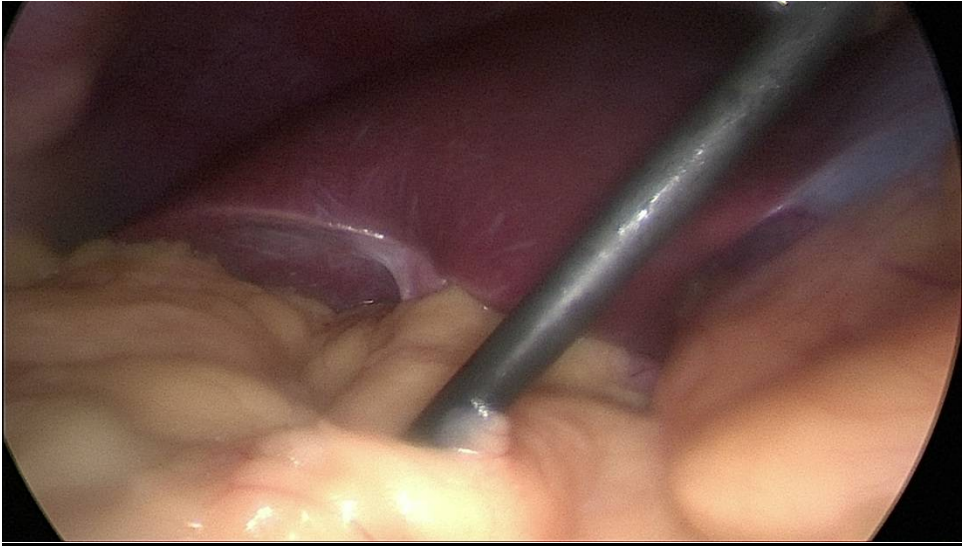
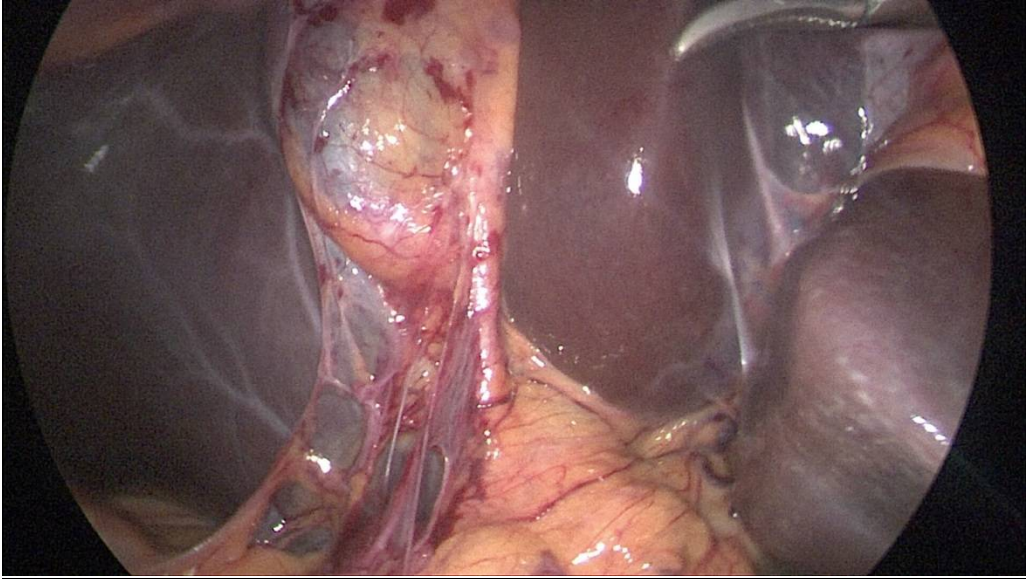
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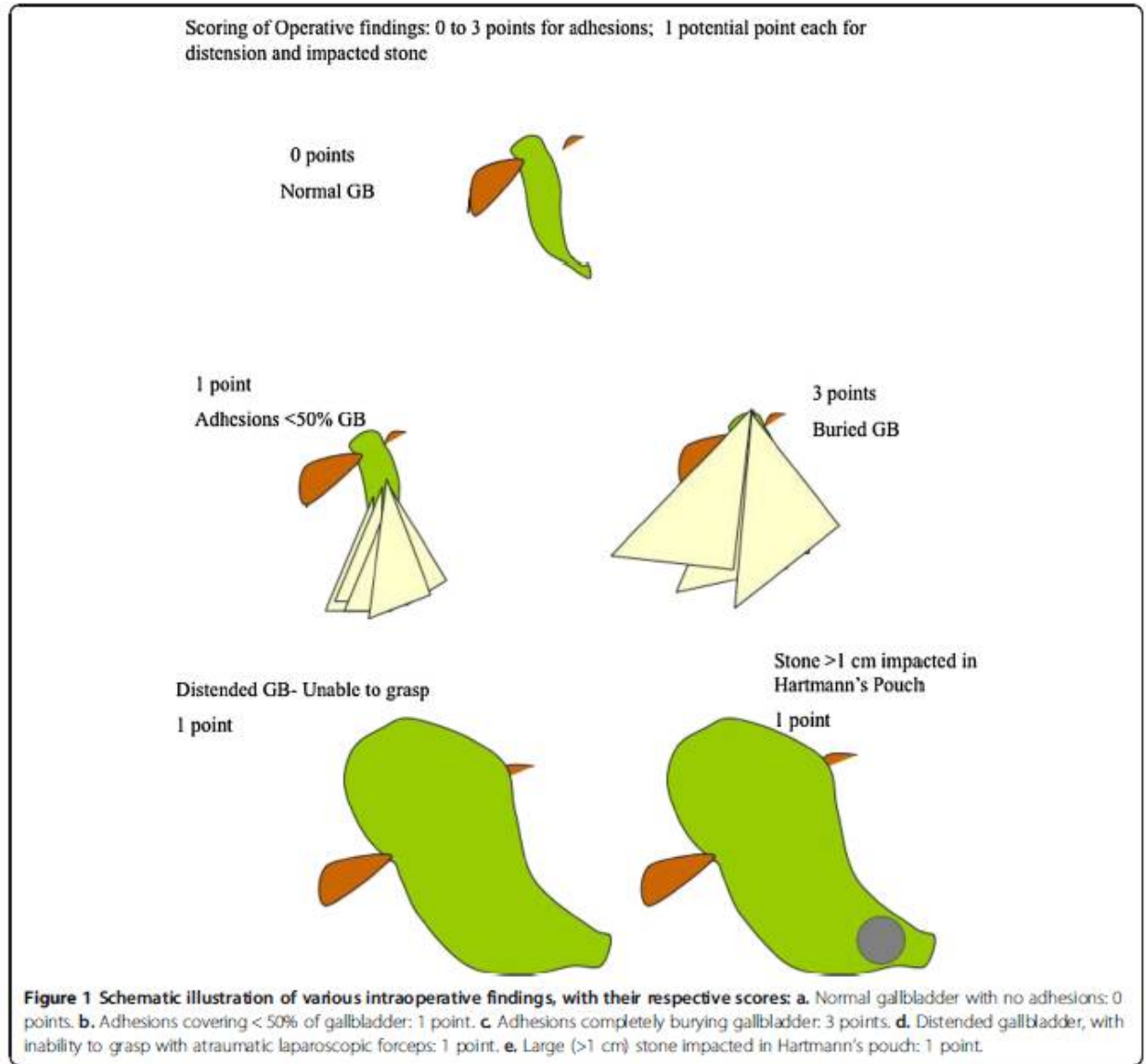
The prospective study protocol was approved by local Ethical Committee Informed consent was taken from all the participants included in the study Total 50 consecutive patients who underwent elective laparoscopic cholecystectomy at our Institute from 1st June 2017 to 30th June 2018 were included in the study Preoperative workup of all the cases was done Some cases were diagnosed as acute cholecystitis All the cases were taken for elective laparoscopic cholecystectomy

Intraoperative findings were assessed on the basis of five key aspects which includes: 1) Appearance of gallbladder and amount of adhesions; 2) Distension/contraction of the gallbladder; 3) Access to peritoneal cavity; 4) Any local/septic complications; and 5) Time taken to dissect the Calot's triangle

Intraoperative scoring was done in all the patients and based on these findings grading of the degree of difficulty and outcome of the surgery assessed according to the following scoring system

Operative Predictors	Score
Difficulty in Access	
BMI >30	1
Adhesions from previous surgery limiting access	1
Gallbladder and Omental Adhesion	
No adhesion	
Adhesions < 50% of GB	
Adhesions burying GB	Max 3
*Score 0 for no adhesion; Score 1 for <50% adhesion; Score 2 for adhesion in between 50% and completely buried GB; and Score 3 when gallbladder is completely buried in adhesion.	
Appearance of GB	
Distended GB or contracted shriveled GB	1
Unable to grasp with atraumatic laparoscopic forceps	1
Stone impacted in Hartman's Pouch	1
Severe Sepsis or Complications	
Bile or pus outside GB or gangrene of GB	1
Time to identify cystic artery and duct >90 minutes	1
Total Max	10
Grading of Degree of Difficulty	
A-Mild	<2
B-Moderate	2-4
C-Severe	5-7
D-Extreme	8-10





Result:-

The study enrolled 50 consecutive cases of laparoscopic cholecystectomy in which 35 were female (70%) and 15(30%) were males Majority of the female were between the age group of 28-55 years and males between 40-65 years Various operative findings were scored from 1 to 10 as per the operative predictors for difficult laparoscopic cholecystectomy, shown in table

Patient with symptomatic cholelithiasis (biliary colic) were 28 (56%) and their mean intraoperative score were 2 In majority of these cases mild degree of difficulty encountered Duration of laparoscopic cholecystectomy in symptomatic cholelithiasis (biliary colic) was between 25-38 minutes

Total 16 (34%) cases of acute cholecystitis were operated and their mean severity score found to be 33 Laparoscopic cholecystectomy is done in these patients with moderate degree of difficulty and without any morbidity Average duration of laparoscopic cholecystectomy in these 27 cases was between 30-51 minutes

3 (6%) cases of mucocele gallbladder were operated and their mean severity score was 46 In all these five cases, laparoscopic cholecystectomy was done without any morbidity Moderate to severe degree of difficulty encountered in these cases in performing laparoscopic cholecystectomy In one of these cases, conversion into open cholecystectomy had to be done Average duration of laparoscopic cholecystectomy in mucocele gallbladder was between 55-80 minutes

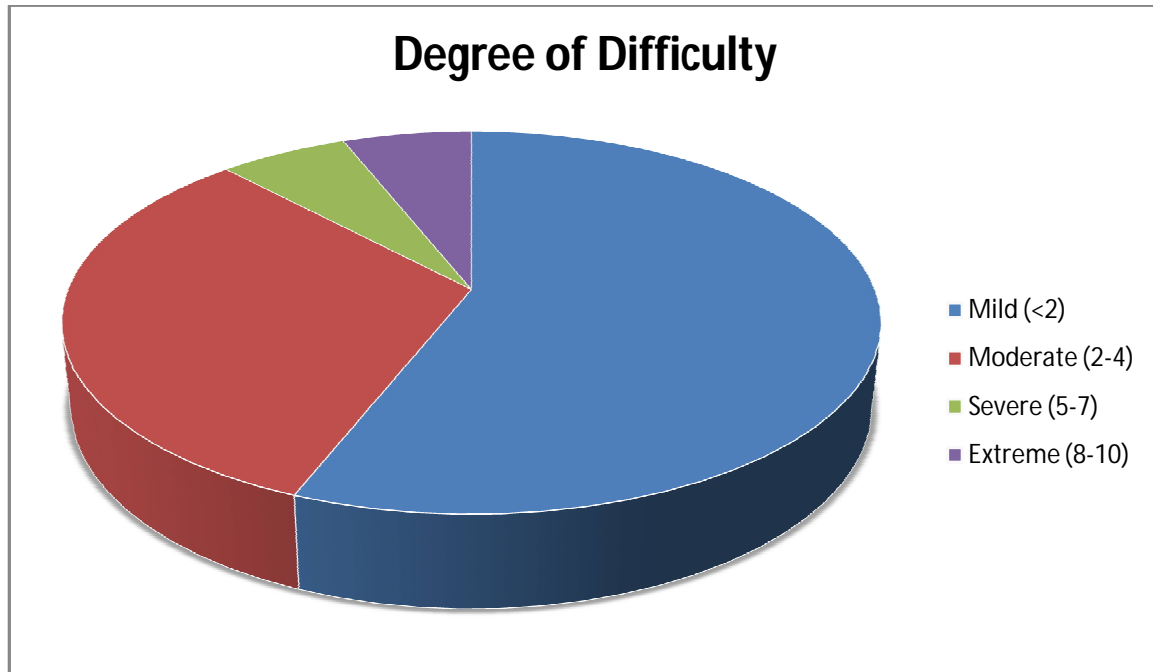
Cases with empyema of gallbladder were 2 (4%) and we encountered severe to extreme degree of difficulty in all these cases In one of the cases of empyema, open cholecystectomy done The severity score in that case was 7 The indication for conversion was frozen Calot's with dense adhesion, subtotal cholecystectomy was done

In 1 (2%) case we found gangrene of the gallbladder with dense adhesion at Calot's and pus spillage outside the gallbladder The severity score in this case was 8 and extreme degree of difficulty encountered Open Cholecystectomy was done

Intra-operative Finding	Number of Cases	Mean Severity Score	Mean Duration of Surgery (in Minutes)	Number of Cases converted into Open Cholecystectomy
Cholelithiasis	28	2	25-38	0
Acute Cholecystitis	16	33	30-51	0
Mucocele of Gall Bladder	3	46	55-80	1
Empyema Gall Bladder	2	7	65-112	1
Gangrenous Gall Bladder	1	8	98	1

Out of these 50 cases, laparoscopic cholecystectomy was done in 94% (47 patients) and degree of difficulty was from mild to severe In the majority, we encountered moderate degree of difficulty in performing laparoscopic cholecystectomy whereas conversion to open cholecystectomy and subtotal cholecystectomy was done in 6% (3 patients) and degree of difficulty were found to be severe to extreme

Degree of Difficulty	Severity Score	No of Cases
Mild	<2	28
Moderate	2-4	16
Severe	5-7	3
Extreme	8-10	3



So, as the intraoperative severity score increased, the severity of cholecystitis increased and more difficulty encountered in performing cholecystectomy safely Conversion to open surgery indicated in severe to extreme degree of difficulty

Discussion:-

Laparoscopic cholecystectomy is one of the most unpredictable operations in general surgery due to variability in the natural history of gall stone and operative findings at laparoscopic cholecystectomy¹¹ In some cases, cholecystectomy may be very easy and in some there may be unexpected degree of surgical difficulty¹² The reported conversion rate of laparoscopic cholecystectomy to open surgery is about 6%-35%¹³ Our study also showed conversion rate of 6% Major cause of conversion to open is dense adhesion due to severe cholecystitis or inability to delineate anatomy^{14,15} There are many preoperative scoring systems to predict the difficult cholecystectomy with some degree of accuracy¹⁶

Nowadays, there is increasing pressure to perform laparoscopic cholecystectomy at index admission of acute cholecystitis Intraoperative scoring system will provide indications for conversion to open surgery and allow for assessment of outcome¹⁷ Scoring and grading surgical conditions provide a uniform tool for reporting the severity of disease In addition it may provide a trigger to prompt earlier conversion or link specific outcomes measures to specific operative scores

In our study, we encountered mild to severe degree of difficulty in 94% (47) patients When the score was <6, we were able to complete the laparoscopic cholecystectomy but when it was > 6 conversion to open surgery done In three of our patient's (6%) extreme degree of difficulty encountered with score of 8 and conversion to open subtotal cholecystectomy done

Sugrue M et al, also reported the moderate degree of difficulty when the score was between 2-4 and severe degree of difficulty at score 5-7, which is very similar to our study

Conclusion:-

This intraoperative scoring system is useful and reliable in assessing the severity of cholecystitis and grading the degree of difficulty in performing laparoscopic cholecystectomy. It also gives indication for conversion in severe degree of cholecystitis.

But also this is a short term and single centre study. Further, long term and large multicentric study is required.

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Original article

9

FNAC IN DIAGNOSIS OF BREAST LESION (FOR PUBLICATION)

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ABSTRACT:

INTRODUCTION: Breast carcinoma is the leading most common malignant tumor and leading cause of carcinoma death with more than 1000000 cases occurring world wide annually¹ FNAC (Fine Needle Aspiration Cytology) has become widely accepted as a reliable diagnostic tool for diagnosis of breast masses³The aim of the study was to classify Breast lesions & correlate with histopathology Report

MATERIALS & METHOD: This was a retrospective observational study done over a period of one year (Jan 17- Dec 17) in Cytology Division of Department of Pathology of AMC MET Medical College at LGHospital Campus ,a tertiary Health Care located in Maninagar Ahmedabad Of total 1104 FNAC were done in the department among these 215 were Breast Lesions Breast lesions were categorized into Inflammatory, Benign with No Risk, Benign with moderate Risk, Suspicious & Malignant

RESULTS: The Maximum number of cases was in the age group of 18-30 in Benign Breast Lesion Malignant Breast Lesion was found in the age group of above 41

CONCLUSION: FNAC is **minimally invasive,produces speedy results and is inexpensive**

KEY WORDS: Breast Lesions, Fine Needle Aispiration, Cytology, Fibroadenoma

INTRODUCTION :

Breast carcinoma is the leading most common malignant tumor and leading cause of carcinoma death with more than 1000000 cases occurring world wide annually ¹It is the second most common cancer in women after cervical cancer The most important risk factor is a history of breast cancer in a close relative ² The risk of breast cancer is minimally increased in women who take hormonal contraceptives but risk is no longer present 10 years after cessation of medication ² By 2020 breast cancer is set to overtake cervical cancer as most common type of cancer among all women in india ³ FNAC (Fine Needle Aspiration Cytology) has become widely accepted as a reliable diagnostic tool for diagnosis of breast masses ³ FNA can be performed with only a needle or with a needle syringe It is least expensive method of diagnosis As FNAC does not require anesthesia or hospitalization and it takes only few minutes to perform , A preliminary judgement as to adequacy of sample and in many instances diagnosis can be done in minutes thus alleviating anxiety that woman inevitably experiences when informed that she has a mammary lesion Thus FNA may save anxiety , trauma and money FNA is particularly valuable when the level of clinical suspicion is low ² A significant advantage of FNB is low cost and the ability to render a diagnosis to the clinician and patient at the time of procedure thus allowing treatment decision to be made immediately ⁴ Limitation of aspiration cytology : FNAC is highly reliable for the diagnosis of cancer If however the FNAC is judged to be atypical or suspicious the procedure should be repeated or another opinion should be sought or the lesion should be excised for histological examination ^{5,6,7}

The aim of scheme Proposed by wang and Ducatman is to categorise a lesion according to likelihood of being a carcinoma on basis of FNA findings rather than predict precise histological diagnosis ⁸ Early Diagnosis helps to prevent patient discomfort and anxiety ^{9,10,11}

The aim of the study was to:

- 1) Find out various causes of Breast Lesion
- 2) To classify the FNAC findings into cytological Categories – Inflammatory ,Benign Lesion with No Risk of Cancer,Benign Lesion with Mild to Moderate Risk of Cancer, Suspicious for Malignancy and Malignant
- 3) To Compare the result of FNAC with Histopathology report of same Patient

Materials & Method: This was a retrospective observational study done over a period of one year (Jan 17- Dec 17) in Cytology Division of Department of Pathology of AMC MET Medical College at LGHospital Campus ,a tertiary Health Care located in Maninagar Ahmedabad Of total 1104 FNAC were done in the department among these 215 were Breast Lesions A detailed clinical history of each patient regarding age, sex, chief Complains physical examination of Breast was carried outUSG Reports & Mammography repots were recorded Axillary Lymph node were palpated for enlargement Written informed Consent of each patient was taken & Fine Needle aspiration was done with 22 gauge Needle & 10 ccOf total1104FNAC, 215 were Breast Lesions Both Females & Males were included in the study, 54 patients had Follow up excision biopsy or lumpectomy or Mastectomy done at out institution Wet fixed smears were stained with Haemotoxylin & eosin stain

III OBSERVATIONS AND RESULTS

Of total 1104 FNAC, 215Breast FNACs cases were collected along with Clinical History & Radiological findings Histo Pathological Correlation was found in 54 Cases

- 1) Out of 215 Breast lesions, 9 were Males patients Rest 206 were females

- 2) 6 Cases were Bilateral
- 3) Histopathological correlation was found in 54 Cases
- 4) The Maximum number of cases was in the age group of 18-40 in Benign Breast Lesion Which is comparable to the study of shrestha aet al (21-30Yrs) & puja et al (31-40) yrs
- 5) Malignant Breast Lesion was found in the age group of above 41 (range 41-70years) Which was comparable to Shresth aet al (41-50) and Puja aet al (41-50)

Most Common Breast lesions was Fibroadenoma (32%) Followed by Proliferative lesion of Breast (225%)
Ductal Carcinoma was found in (22%) Cases

Table I

Diagnosis in 215 Breast FNAC

Breast Lesion	No of cases
A Benign Lesions with no risk of Cancer	
I Unsatisfactory	5
II Inflammatory Breast Lesion	
Mastitis	16
Abscess	12
III Non Proliferative Breast Disease	
Fibrocystic change & Simple cyst	03
Mild epithelial Hyperplasia	01
IV Miscallaneous	
Lactational change/ Galactocele	03
Gynecomastia	13
B Benign Lesion with Mild Moderate risk of Cancer	
I Proliferative breast disease without atypia	
Epithelial Hyperplasia, Moderate	01
Papilloma	01
Fibroadenoma	64
Phylloid	01
II Proliferative Breast disease with atypia but Benign	45
C Suspicious & Malignant	
Suspicious & Malignancy	06
Ductal Carcinoma	44

Table II

Sex	No
Male	9
Female	206

Table III Age Distrubution

Age	Benign	Malignancy
< 20 years	11	-
Up to 20 years	45	-
21-30 years	57	02
31-40 years	36	09
41-50	19	13
51-60	3	07
>61	-	13

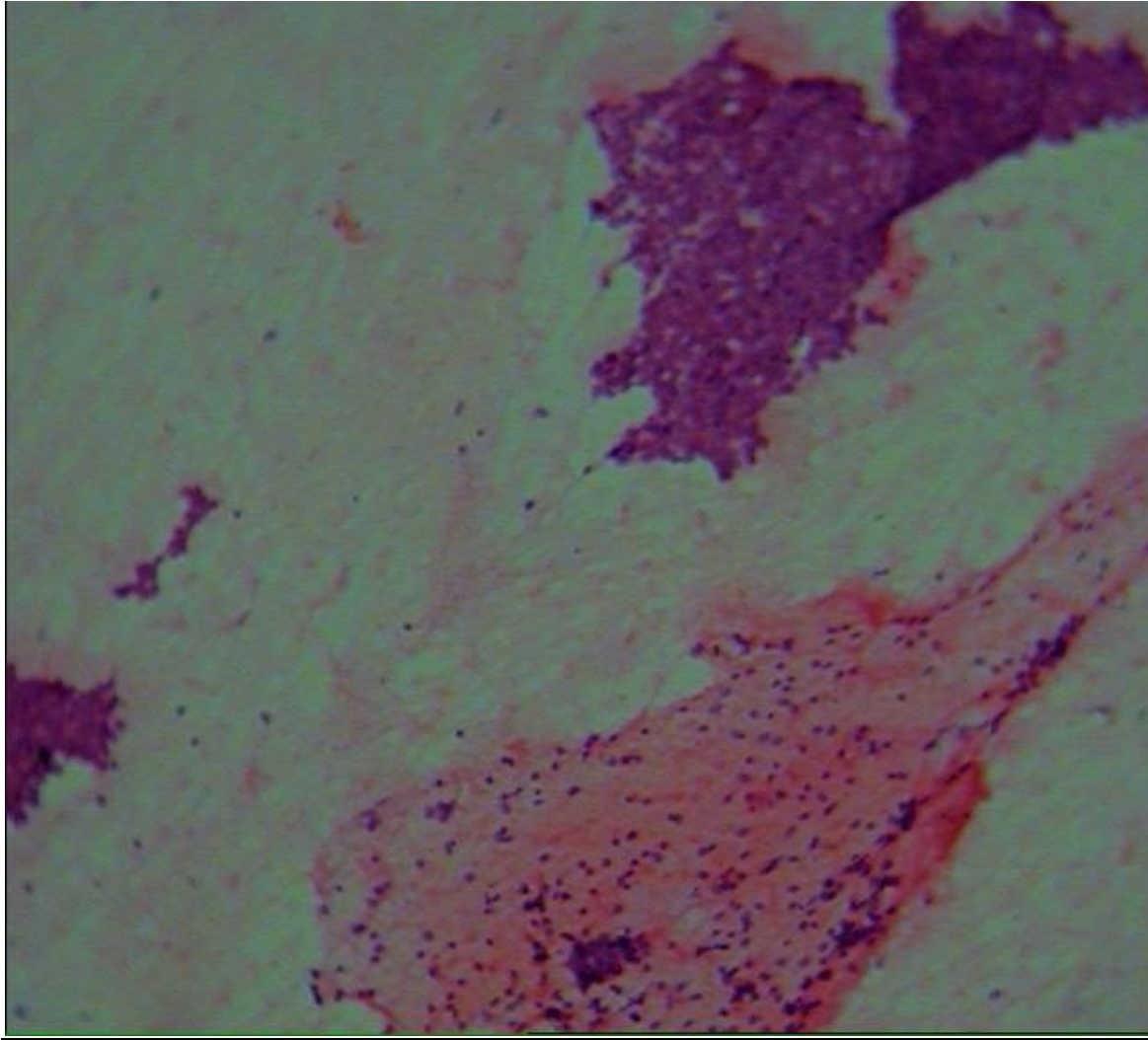
Table IV FNAC and Histo Correlation

Sr No	Breast lessions	FNAC	Histopathology
1	Positive	44	22
2	Suspicious	6	5
3	PBD with atypia	45	10
4	Fibroadenoma	64	14
5	Phylloid	1	1
6	Gynecomastia	13	2

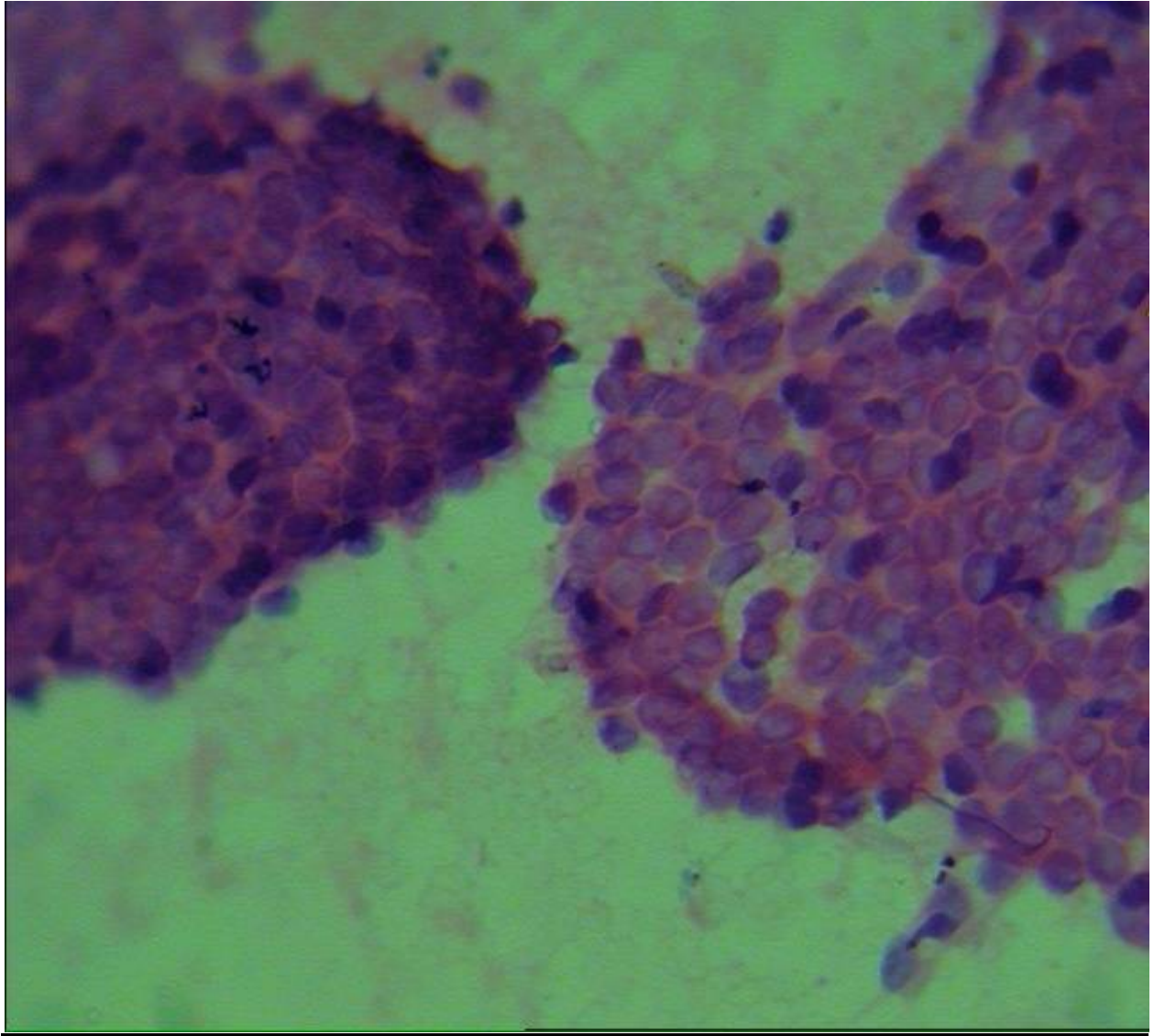
Table V

FNAC		HISTOPATHOLOGY	
Diagnosis	No of Cases	Diagnosis	No of Cases
Ductal Carcinoma	22	Ductal Carcinoma	22
ProliferativeBreast disease with atypia	10	ProliferativeBreast disease with atypia	8
		Tubular adenoma	1
		Ductal carcinoma	1
Suspicious	5	Ductal Carcinoma	5
Phylloid tumour	1	Phylloid tumour	1
Gynecomastia	2	Gynecomastia	2
Fibroadenoma	14	Fibroadenoma	14

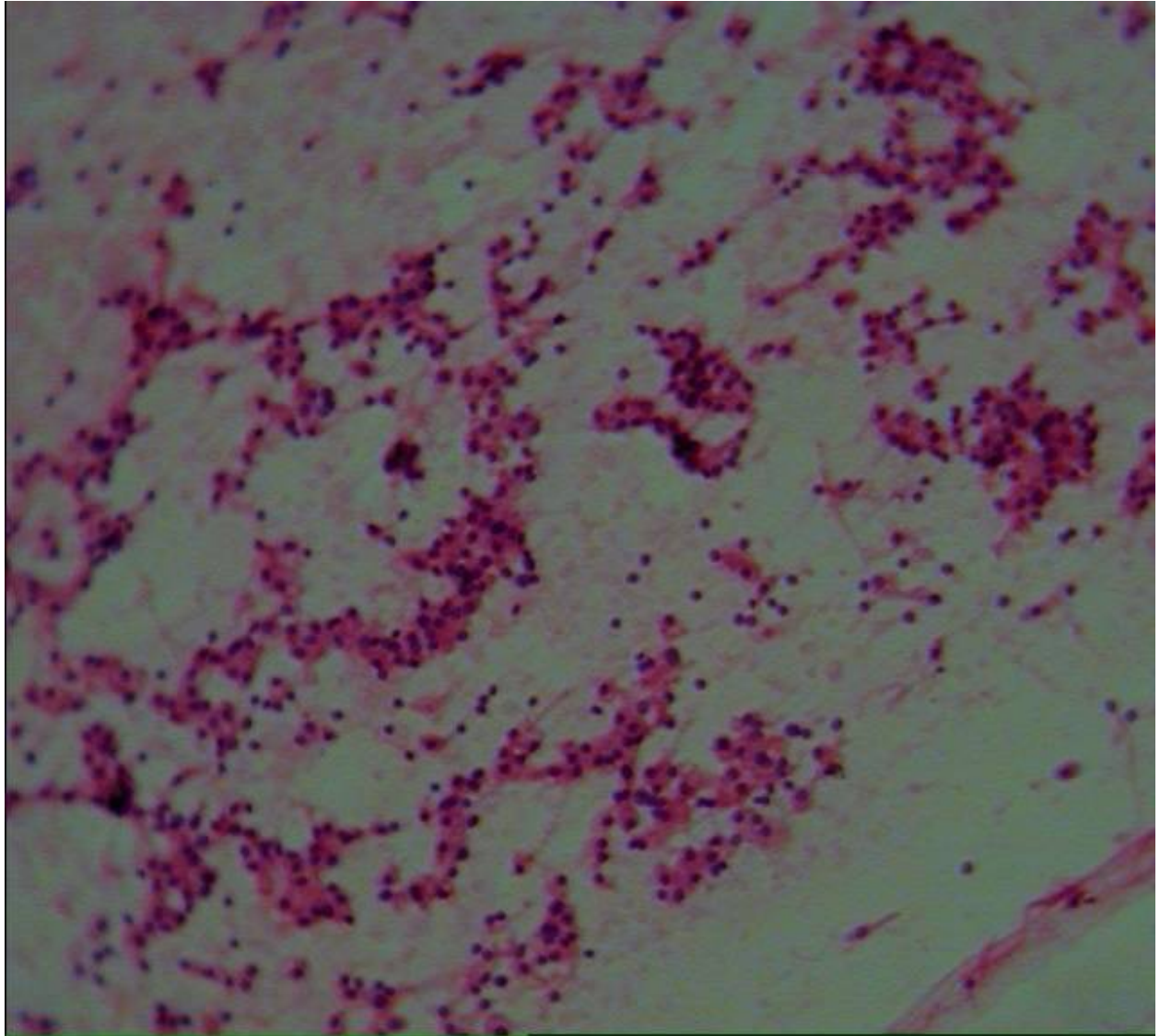
FNAC IMAGES



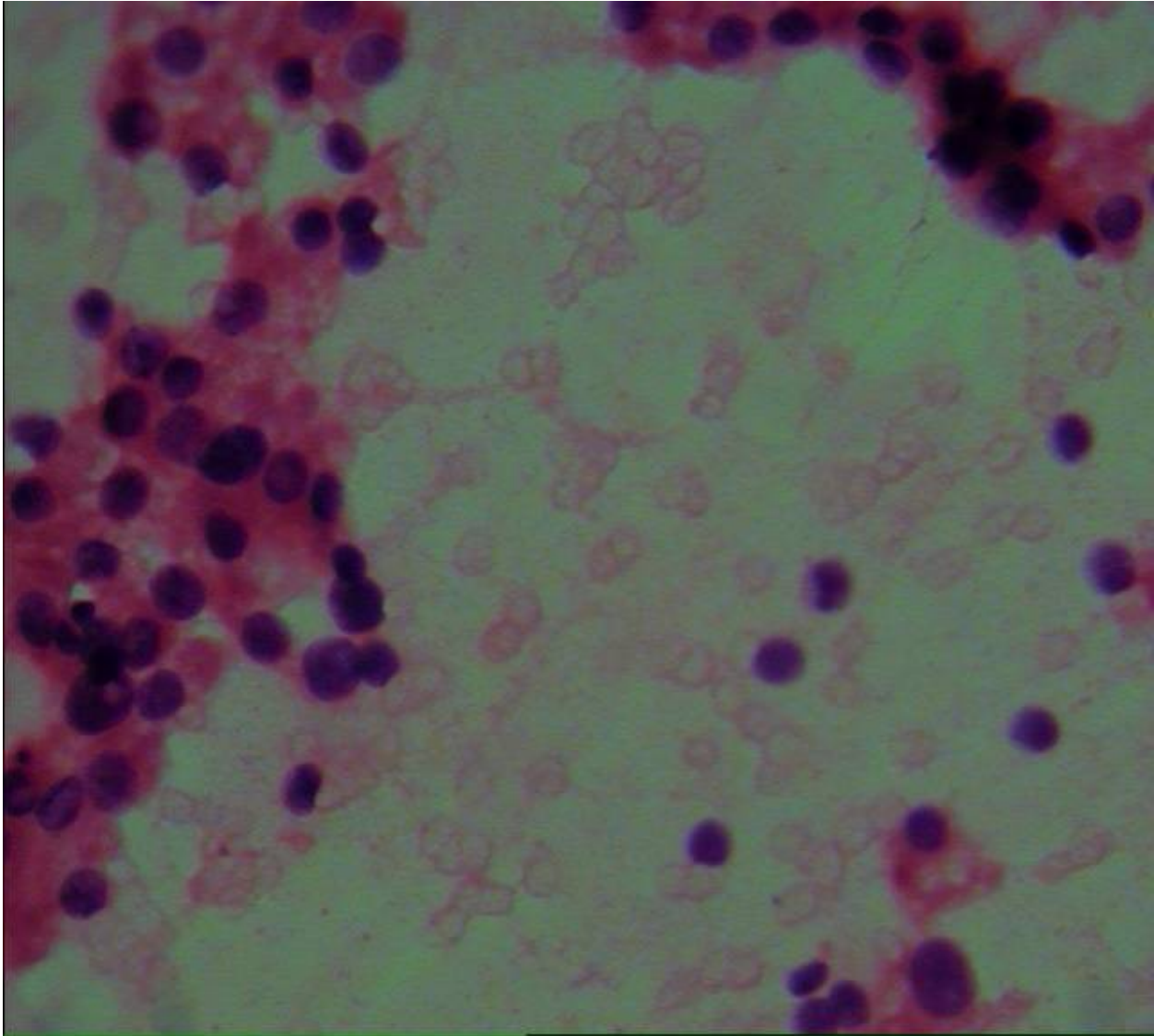
Fibroadenoma low power 10x



Fibroadenoma High power (40x)



Ductal carcinoma low power(10x)



Ductal Carcinoma High power(40x)

Discussion:

Breast Cancer is the commonest Cancer of Urban women and second commonest in the Rural women next to cervical cancer Owing to lack of awareness of this disease and in absence of Breast Cancer Screening Programme, the majority of Breast Cancer are diagnosed at a relatively advanced stage^{11,12} We had 44 cases of Ductal Carcinoma, Out of which 19 were in age group of 41-50, 3 in age group of 51-60 & 17 patients above 61 years

During the study the Breast lesions were classified as Inflammatory, Benign Lesion with No Risk of Cancer, Benign Lesion with Mild to Moderate Risk of Cancer, Suspicious for Malignancy and Malignant

Following observations were made

1) In present study, 02% cases were unsatisfactory for reporting 41% patients were males and 958% patients were females

2) In the present study, Fibroadenoma is the commonest Benign Breast lesion followed by Benign Proliferative lesion of Breast which is comparable to study by Shrestha et al Benign Breast lesion was common in the age group of 21- 40 which is comparable to the study by Shrestha et al¹²(21-30 years) and Jarwani Puja² et al (31-40 years)

3) Invasive Duct Carcinoma was commonest Malignant Breast lesion in the age group above 41 years which was comparable to Shrestha et al¹²

4) In Comparative Analysis of FNAC and Histopathology, Out of 6 Cases of FNAC suspicious for Malignancy, 5 were positive for Malignancy, 1 did not turn up

5) Out of 44 Malignant cases in FNAC, 22 were confirmed Malignant Histopathologically in our Institute

6) 2 Cases were Reported as false negative, 1 reported as Benign Proliferative lesion with Epithelial Hyperplasia turned out to be Malignant, & another Reported as Benign Proliferative lesion turned out to be Tubular Adenoma

CONCLUSION: This study like other studies also suggests that diagnosis of atypia is clinically significant because it is associated with increased likelihood of Malignancy & such cases should be evaluated for Histology⁵¹¹ FNAC Breast is low cost and the ability to render a diagnosis to the clinician and patient at the time of procedure thus allowing treatment to be made immediately FNAC is minimally invasive produces speedy results and is inexpensive All cases of Proliferative lesion of Breast with atypia and suspicious Malignant cases should be followed by histopathological examination

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Original article:**10****COMPARISON OF INTRAVENOUS TRAMADOL AND INTRAVENOUS CLONIDINE ON POST SPINAL ANAESTHESIA SHIVERING**

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KEYWORDS:- IV TRAMADOL, CLONIDINE, POST SPINAL ANAESTHESIA SHIVERING

Abstract :

INTRODUCTION:- Post anesthesia shivering is very unpleasant, uncomfortable to the patient as well as to the operating room personnel It is spontaneous, involuntary, rhythmic, tremor-like muscle hyperactivity that increases metabolic heat production upto 600% after general or regional anesthesia There are various methods available to control shivering during anaesthesia, which include non-pharmacological methods and pharmacological methods using drugs which have anti-shivering properties We conducted this randomised study to compare the relative efficacy of Tramadol and Clonidine for control of intraoperative shivering under spinal anaesthesia

AIMS AND OBJECTIVES:- The present study is undertaken to clinically compare the efficacy, haemodynamic effects, complications and side effects of Clonidine & Tramadol on control of postspinal shivering

MATERIAL AND METHOD:- After obtaining written and informed consent, We conducted a randomised study in 60 patients (30 in each group) and compared the efficacy of Tramadol and Clonidine for controlling postspinal shivering

Patients were given injection Tramadol (Group T – IV Tramadol 1 mg/kg) or injection Clonidine (Group C IV Clonidine 1mcg/kg) when shivering of grade 2 to 4 was noted which lasted for minimum period of 2 minutes after institution of subarachnoid block

CONCLUSION:- Both Tramadol and Clonidine effectively treated patients with post spinal shivering, but time taken for complete cessation of shivering was earlier in Tramadol From our study we conclude that, IV Tramadol is a better alternative than IV Clonidine in treatment of postspinal anesthesia shivering with prophylactic administration of Ondansetron 4mg IV to prevent nausea and vomiting

INTRODUCTION:- Spinal anaesthesia is widely used as a safe anaesthetic technique for both elective and emergency operations Post anesthesia shivering is very unpleasant, uncomfortable to the patient as well as to the operating room personnel It is spontaneous, involuntary, rhythmic, tremor-like muscle hyperactivity that increases metabolic heat production upto 600% after general or regional anesthesia[18]It is a potentially serious complication, resulting in increased metabolic rate; increased oxygen consumption along with raised carbon dioxide (CO₂) production; increase in minute ventilation and cardiac output to maintain aerobic metabolism causing arterial hypoxemia, lactic acidosis, increased intraocular and intracranial pressure, and interferes with pulse rate, blood pressure and ECG monitoring by causing artifacts[3]The mechanism of origin of shivering is not clear, various hypothesis have been proposed Perioperative hypothermia is the primary cause, which occurs due to neuraxial anaesthesia-induced inhibition of thermoregulatory mechanism temperature to maintain internal body temperature within a narrow range, thus optimising normal body function There are various methods available to control shivering during anaesthesia, which include non-pharmacological methods and pharmacological methods using drugs which have anti-shivering properties We conducted this randomised study to compare the relative efficacy of Tramadol and Clonidine for control of intraoperative shivering under spinal anaesthesia

AIMS AND OBJECTIVES:- The present study is undertaken to clinically compare the efficacy, haemodynamic effects, complications and side effects of Clonidine & Tramadol on control of postspinal shivering

MATERIAL AND METHOD:- After obtaining written and informed consent, we conducted a randomised study in 60 patients and compared the efficacy of Tramadol and Clonidine for controlling postspinal shivering Patients were divided randomly in two groups with 30 patients in each group

A. Patient selection and exclusion criteria

Patient Inclusion criteria

- Patients from either gender

- Aged between 18 to 65 years
- ASA grade I or II
- Undergoing various elective surgeries like Hernioplasty, TURP, Tibia nailing, PFN, Abdominal Hysterectomy, Vaginal Hysterectomy, etc under subarachnoid block who developed shivering after anaesthesia
- Patients with no prior medications
- Shivering of grade 2 to 4(CROSSLEY & MAHAJAN) lasting for a minimum period of 2 minutes
- Patients who have a valid informed written consent

Patients exclusion criteria

- Patients who did not give a valid informed consent;
- Patients not belonging to the above mentioned age or ASA grade;
- Patients with fever, significant cardiovascular, renal, hepatic, respiratory, thyroid, neurological disorders, autonomic neuropathies, a need for blood transfusion during surgery
- Patients with known hypersensitivity to Tramadol or Clonidine;
- Patients with known history of alcohol and substance abuse;
- Patients who develop shivering even before administering spinal anaesthesia;
- Patients requiring supplementation with general anaesthesia;
- Surgeries which lasted for more than 3 hours

B. Preanaesthetic evaluation

Preanaesthetic evaluation of all patients consisted of detailed history, physical examination and routine investigation A written informed consent was taken after proper counselling

C. Anaesthetic protocol

- 1 Preoperative preparation

- All patients were fasted overnight
- No sedatives or anxiolytics were given on previous night
- Vital parameters noted in preoperative room were considered as baseline values

2 Premedication

- No premedication – sedative/anxiolytics/antiemetics was given on day of surgery

3 Study groups

- Patients were randomly divided into two groups and each group consisted of 30 patients
- Patients were given injection Tramadol or injection Clonidine, when shivering of grade 2 to 4 was noted which lasted for minimum period of 2 minutes after institution of subarachnoid block

Group C – injection iv Clonidine 1mcg/kg

Group T – injection iv Tramadol 1 mg/kg

4 Anaesthetic technique

- The ambient temperature of operation theatre measured by a wall mounted thermometer was maintained at 24-26°C
- All preloading fluids and drugs were stored and administered at room temperature
- Baseline temperature of patient was recorded using a mercury thermometer in the axilla
- IV access was obtained with 18G cannulae
- All patients were preloaded with lactated Ringer's solution 8-10 ml/kg
- Monitors attached – pulse oximeter, NIBP, ECG
- Vital parameters noted and monitoring was done throughout the procedure
- Subarachnoid block was instituted

- under strict aseptic and antiseptic precaution
- in sitting position
- in L3-L4 intervertebral space
- with 25G quincke's spinal needle
- 35 ml of 0.5% hyperbaric Bupivacaine was used in all cases, to achieve a desirable level of sensory block (T8-T10 dermatome) in accordance with the surgical procedure
- Onset of sensory block was assessed by pinprick method
- Motor block was assessed according to MODIFIED BROMAGE SCALE
- Surgery was allowed once desired sensory block level and motor block of bromage grade 3 was achieved
- After induction of spinal anaesthesia, patients were observed for occurrence of shivering and Time of onset of shivering after spinal anaesthesia was noted
- Intensity of shivering was graded according to CROSSLEY & MAHAJAN SCALE
 - Grade 0: No shivering
 - Grade 1: No visible muscle activity but Piloerection, Peripheral vasoconstriction, or both are present (other causes excluded)
 - Grade 2: Muscular activity in only one muscle group
 - Grade 3: Moderate muscular activity involving two or more than two muscle groups but not involving whole body
 - Grade 4: Violent muscular activity that involves the whole body and bed shaking
- Study drug was administered for shivering of grade 2 to 4 which persisted for min 2 minutes
- Shivering response was defined as
 - ◆ Complete : when post treatment the shivering grade declined to grade 0

- ◆ Incomplete : when post treatment the shivering grade declined but shivering did not cease completely
- ◆ Failed : if no change in shivering grade was observed
- Time taken for cessation of shivering and haemodynamic changes were recorded at regular 5 minutes intervals upto 15 minutes postdrug administration
- Recurrence was defined as any rise in shivering score post treatment
- Sedation score was assessed with a four-point scale as per Filos: [13]
 1. Awake and alert
 2. Drowsy, responsive to verbal stimuli
 3. Drowsy, arousable to physical stimuli
 4. Unarousable
- Episodes of recurrence or incomplete response were treated with active warming measures using convection heaters, infusing moderately warm fluids and covering the patient
- Complication and side effects were also noted and treated
 - ◆ Hypotension was defined as fall in systolic blood pressure (SBP) \geq 30% from baseline value or SBP < 90 mm of hg
 - ◆ If hypotension occurred, it was treated with injection iv Mephentermine 6 mg
 - ◆ Bradycardia was defined as fall in pulse rate \geq 30% from baseline value or pulse rate < 60 per minue
 - ◆ If bradycardia occurred, it was treated with injection iv Atropine 06 mg
 - ◆ Nausea : it was evaluated using a 5 point scale
 - 1 – no nausea and vomiting
 - 2 – mild nausea
 - 3 – moderate nausea

- 4 – severe nausea, treatment is necessary
- 5 – intractable nausea, patient complains despite treatment
- ◆ Nausea & vomiting treated with injection iv Ondansetron 4 mg
- ◆ Respiratory depression was defined as Spo₂ <90% on room air and/or respiratory rate <8/minute

Statistical analysis was done using suitable statistical software Interpretation of observations and results were done using unpaired Student *t* test

A *P* value of

- ◆ <0001 : highly significant
- ◆ <005 : significant
- ◆ >005 : non significant

OBSERVATION AND RESULTS:-

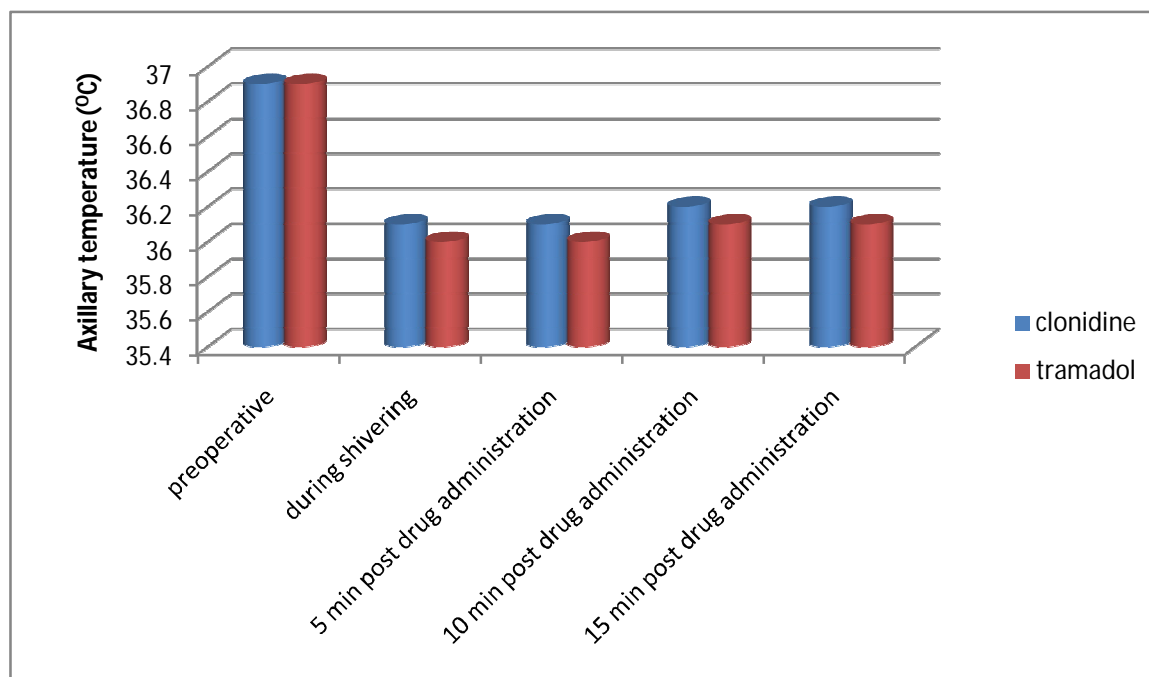
After studying 60 cases, observation and results were summarized in tabulated form and described below Both groups comprised of 30 patients

TABLE 1: DEMOGRAPHICAL PROFILE OF THE PATIENTS OF BOTH THE GROUPS

Groups	Group C (n=30)	Group T (n=30)	P value	INFERENCE
Age in years (mean ± SD)	378 ± 98	368 ± 1007	>005	NS
Sex (male/female)	15/15	15/15		
Weight in Kg (mean ± SD)	624 ± 972	631 ± 1287	>005	NS
ASA grade I/II	15/15	15/15		
Duration of surgery in mins (mean ± SD)	1101 ± 2027	1096 ± 2088	>005	NS
Grade of shivering (III/IV)	13/17	15/15		

No significant difference was seen in age, sex, weight, ASA grade, duration of surgery and grade of shivering

COMPARISON OF AXILLARY TEMPERATURE(0C) AT DIFFERENT TIME INTERVALS IN TWO STUDY GROUPS

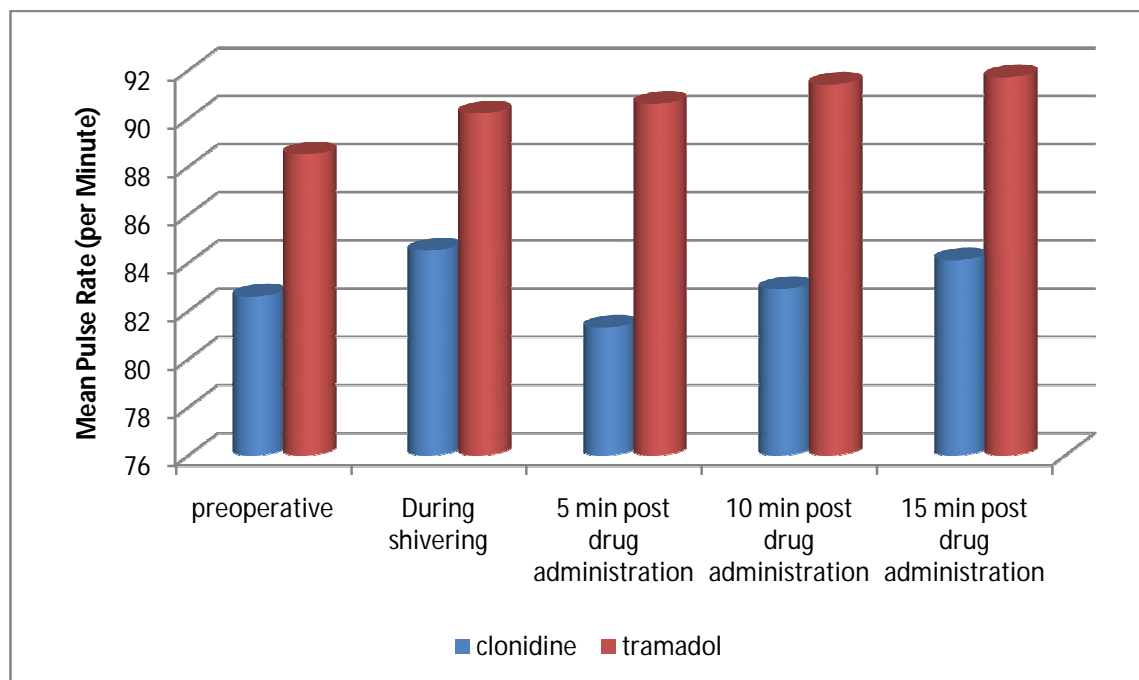


The axillary temperature in both groups fall significantly during shivering compared with the baseline values, but the values between two groups did not differ significantly

TABLE 2: CHANGES IN PULSE RATE (PER MINUTE) (MEAN \pm SD)

Time	Group C (n=30)	Group T (n=30)	P value	INFERENCE
Preoperative	826 \pm 105	885 \pm 147	>005	NS
During shivering	845 \pm 115	902 \pm 150	>005	NS
5 min post drug administration	813 \pm 111	906 \pm 160	<005	S
10 min post drug administration	829 \pm 119	914 \pm 174	<005	S
15 min post drug administration	841 \pm 101	917 \pm 158	<005	S

COMPARISON OF MEAN PULSE RATE (PER MINUTE) AT DIFFERENT TIME INTERVALS IN TWO STUDY GROUPS



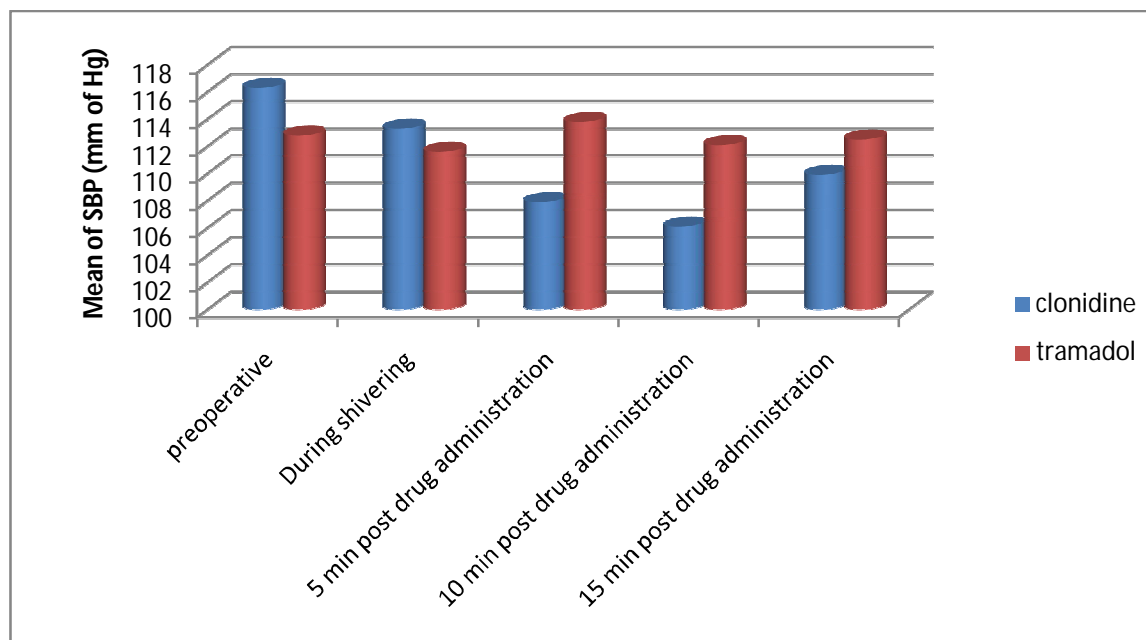
At the onset of shivering, the haemodynamic variables were comparable in both groups. After receiving the study drug treatment, a propensity toward a slight fall in pulse rate was observed in Clonidine group in contrast to Tramadol group, in which no significant haemodynamic changes were observed.

TABLE 3: CHANGES IN SYSTOLIC BLOOD PRESSURE (MM OF HG) (MEAN)

Time	Group C(n=30)	Group T(n=30)	P value	Inference
Preoperative	1163 ± 803	1128 ± 746	>005	NS
During shivering	1133 ± 573	1116 ± 795	>005	NS
5 min post drug administration	1079 ± 873	1138 ± 779	<005	S
10 min post drug administration	1061 ± 1189	1121 ± 70	<005	S
15 min post drug	1099 ± 101	1125 ± 750	>005	NS

administration				
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**COMPARISON OF MEAN OF SBP (MM OF HG) AT DIFFERENT TIME INTERVALS
IN TWO STUDY GROUPS**



After receiving the study drug treatment, a propensity towards a slight fall in SBP was observed in Clonidine group in contrast to Tramadol group, in which no significant haemodynamic changes were observed

TABLE 4: COMPARISON OF AVERAGE TIME TAKEN FOR CESSATION OF SHIVERING, % OF INCOMPLETE RESPONSE, % OF NO RESPONSE AND % OF RECURRENCE IN STUDY GROUPS

Event	Group C		Group T		P value
Onset of shivering after spinal anesthesia in minutes (mean±sd)	325 ± 642		309 ± 789		>005 (NS)
Time taken for cessation of shivering in minutes (mean ± sd)	352 ± 052		258 ± 055		<0001 (HS)
Type of response	No Of	%	No Of	%	

	patient		patient		
Complete response	24	80	30	100	
Incomplete response	4	133	0	0	
No response	2	66	0	0	
Recurrence	8	266	2	66	

Time for onset of shivering after spinal anaesthesia was not statistically significantly different between the two groups. The time taken for complete cessation of shivering was significantly higher in Group C than in Group T for which p value was <0001 indicating that difference is highly significant. The complete response rate was significantly higher for patients treated with Tramadol. The Incomplete response rate, failure rate, recurrence rate was significantly higher for patients treated with Clonidine.

TABLE 5 : COMPLICATIONS IN BOTH GROUPS

Complications	Group C(n=30)		Group T(n=30)	
	No Of patient	%	No Of patient	%
Nausea	0	0	15	50
Vomiting	0	0	6	20
Bradycardia	2	66	0	0
Hypotension	6	20	0	0
Sedation score 2 or more	12	40	2	66

Incidence of Nausea and vomiting were significantly higher in Tramadol group, whereas Bradycardia and hypotension were higher in clonidine group. Tramadol was found to have less

sedation Episodes of oxygen desaturation or respiratory depression were not detected in any patient of any group during the study

DISCUSSION :- Postspinal Shivering is a common problem faced by anaesthesiologist, incidence being 19%-33% Probable mechanisms could be decrease in core body temperature secondary to sympathetic block ; peripheral vasodilatation ; increased cutaneous blood flow ; which leads to increased heat loss through skin; cold temperature of operation theatre, rapid infusion of cold iv fluid ; and effects of cold anaesthetic drugs upon the thermosensitive receptors in the spinal cord[1, 9]Pharmacological intervention resets the shivering threshold to a lower level, thereby decreasing rigors and its episodesThe neurotransmitter pathways involved in shivering involve opioids, α -2 adrenergic, serotonergic, and anticholinergic receptors[6, 14] In present study, we compared the efficacy of Clonidine and Tramadol for postspinal shivering

Tramadol is a novel analgesic It has opioid effect mediated by the mu receptor, with minimal effect on kappa and delta receptors It inhibits 5-HT₃ reuptake and promotes its releaseIt also inhibits synaptosomal noradrenaline reuptakeIt also activates the monoaminergic receptors of the descending neuraxial inhibiting pain pathway The antishivering action of Tramadol is probably mediated via its opioid or serotonergic and noradrenergic activity or both [5]

Clonidine is an α 2-adrenoceptor agonist It exerts its anti-shivering effects at three levels: Hypothalamus where it decreases the thermoregulatory threshold for vasoconstriction and shivering, at locus coeruleus -a pro-shivering centre in pons, it reduces spontaneous firing, and at the spinal cord level, it activates the α 2-adrenoreceptors and release of dynorphine, norepinephrine and acetylcholineIt is highly lipid-soluble and easily crosses the blood-brain barrier and provides a significant reduction in the incidence of post-extradural shivering without clinically relevant adverse side effects [8, 17]

INTRAOPERATIVE ENVIRONMENT-Potential risk factors for hypothermia in spinal anaesthesia include aging, level of sensory block, temperature of operation theatre and iv solutions

VArvind et al as well as **Usha Shukla et al**, conducted a comparative study of Clonidine and Tramadol for control of post spinal shivering In either of their study, temperature of iv fluids, drugs and temperature of operating room were not tightly controlledHowever, in our study, the

ambient temperature was maintained at 24-26 °C All preloading fluids and drugs were stored and administered at room temperature Demographic factors such as age, gender, duration of surgery and anaesthesia have also been matched to reduce any confounding bias

STUDY DRUG AND DOSE- **VARvind et al**, compared efficacy of 1mg/kg Tramadol iv and 1mcg/kg iv Clonidine on post spinal shivering We compared the effect of 1 mcg/kg of Clonidine vs 1mg/kg of Tramadol on postspinal shivering

TEMPERATURE MONITORING- We recorded axillary temperature at regular intervals intraoperatively

PATIENTS INCLUDED, RESPONSE CRITERIA AND RECURRENCE- **Usha Shukla et al**, included those patients who developed shivering of grade 3 or 4 in their study In our study, patients with shivering of grade 2 to 4 lasting for min period of 2 minutes were included **Usha Shukla et al**, defined response rate as shivering ceasing within 15 minutes after treatment In our study, shivering control was defined according to grade of shivering after drug administration as either complete, incomplete or failed response

VARvind et al, treated recurrence with additional doses of Clonidine 1mcg/kg iv or Tramadol 1mg/kg iv in respective groups In our study, recurrence or incomplete response were treated with active rewarming measures using convection heaters & infusing moderately warmed iv fluids We avoided additional doses of study drug and/or multimodal treatment for recurrence so that it does not interfere with intraoperative vital parameters

TIME FOR CESSATION OF SHIVERING- In study by **VARvind et al**, Tramadol took less time (458 ± 059 min) than Clonidine (802 ± 515 min) to control shivering In our study, cessation of shivering with Tramadol was achieved earlier (258 ± 055 min) than with Clonidine (352 ± 052 min) Contradictory to this result, **Usha Shukla** noticed longer time with Tramadol (501 ± 102 min) as compared to Clonidine (254 ± 076 min) for control of shivering

RESPONSE RATE- **VARvind et al**, found Tramadol has significant advantage (100%) over Clonidine (85%) for stopping shivering early ie at 10 min post shivering We too found higher incidence of complete response with Tramadol (100%) as compared to Clonidine (80%) In

contradiction, **Usha Shukla et al** noticed higher success rate in Clonidine group (975%) as compared to Tramadol group (925%)

INCOMPLETE RESPONSE- **Pranav Bansal et al** found lower incidence of incomplete response of Tramadol group (266%) compared to Clonidine group (466%) We too observed incomplete response in 133% patients of Clonidine group whereas 0% in patients in Tramadol group No response was seen in 66% patients of Clonidine group

RECURRENCE- **Prerna Attal et al**, found a higher recurrence rate in Clonidine group (133%) than in Tramadol group (66%) Our study shows similar findings with higher recurrence in Clonidine group (266%) than Tramadol group (66%)

COMPLICATIONS-

- **BRADYCARDIA-** **Usha Shukla et al**, observed incidence of bradycardia was higher in Clonidine group (5%) compared to Tramadol group (0%) Our incidence of bradycardia was also higher in Clonidine group (66) than in Tramadol group (0%)
- **HYPOTENSION-** Hypotension was seen more frequently in Clonidine group (75 %) than Tramadol group (0 %) in **Usha Shukla et al** observation We observed even higher incidence of hypotension with Clonidine (20%) compared to Tramadol (0%)
- **NAUSEA AND VOMITING-** **Usha Shukla et al** found a higher incidence of nausea (775%), vomiting (20%) and dizziness (555%) with Tramadol group than Clonidine (0%) Our observation also correlates with above study Incidence of nausea and vomiting with Tramadol was 50% and 20% respectively which is higher than Clonidine (0%)
- **SEDATION-** **Prerna Attal et al** observed sedation score of ≥ 2 in more number of patients with Clonidine group (60%) than Tramadol group (20%) In our study, we also found higher incidence of sedation score ≥ 2 in Clonidine group (40%) in contrast to Tramadol group (66%)

LIMITATION- A limitation of this study is that we could not measure the core body temperature as the probe needs to be put in the oesophagus or near the tympanic

membrane Both these are uncomfortable and unacceptable to the patient who has been given spinal anaesthesia

CONCLUSION:- In conclusion,

- Both Tramadol and Clonidine effectively treated patients with post spinal shivering, but time taken for complete cessation of shivering was earlier in Tramadol than Clonidine ; difference being statistically highly significant
- Incidence of complete response was more in Tramadol compared to Clonidine
- Incidence of failure rate,incomplete response and recurrence was less with Tramadol compared to Clonidine
- Incidence of Complications like nausea & vomiting were higher in Tramadol, whereas bradycardia & hypotension were higher in Clonidine
- Tramadol was found to have less sedation than Clonidine

From our study we conclude that, iv Tramadol is a better alternative than iv Clonidine in treatment of postspinal anesthesia shivering with prophylactic administration of Ondansetron 4mg iv to prevent nausea and vomiting

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Original article

11

COMPARATIVE STUDY OF 3*ED95 ROCURONIUM VERSUS SUCCINYLCHOLINE A INTUBATING AGENT IN A PEDIATRIC PATIENT

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Key words : neuromuscular relaxant, succinylcholine, pediatric patients, rocuronium TOF guard

TOF : TRAIN OF FOUR, IOP : INTRAOPTIC PRESSURE

Abstract

Abstract

Background: succinylcholine is routine muscle relaxant for paediatric patients

Rocuronium is newer non depolarising muscle relaxant

Aims & objectives: To assess time, course and duration of both relaxants as well as intubation conditions

Material & Methods:

The randomized blind study was carried out to evaluate the intubating condition with two different muscle relaxants in 50 ASA grade I and II pediatric patients with age group of 2-6 years, having duration of surgery less than 30 minutes. Patients were anaesthetized with injection rocuronium 0.9 mg/kg iv or with injection succinylcholine 15 mg/kg after injection fentanyl 1 µg/kg and injection thiopentone 5 mg/kg. Neuromuscular blockade was assessed by twitch response of adductor pollicis longus after supra-maximal stimulation of ulnar nerve. Tracheal intubating conditions were assessed by blinded anaesthetist after 60 seconds and then after every 15 seconds, till patient got intubated. Along with this, time of onset and percentage of neuromuscular blockage was also assessed.

Observations and results:

Time course and duration of action were more in case of rocuronium group as compared to succinylcholine group. Intubating conditions are comparable in both groups.

Key words: 3*ED95 Rocur IIM, succinylcholine, paediatric patients, TOF guard

Introduction

The randomized blind study was carried out to evaluate the intubating condition with two different muscle relaxants in 50 ASA grade I and II pediatric patients with age group of 2-6 years, having duration of surgery less than 30 minutes. Patients were anaesthetized with injection rocuronium 0.9 mg/kg iv or with injection succinylcholine 15 mg/kg after injection fentanyl 1 µg/kg and injection thiopentone 5 mg/kg. Neuromuscular blockade was assessed by twitch response of adductor pollicis longus after supra-maximal stimulation of ulnar nerve. Tracheal intubating conditions were assessed by blinded anaesthetist after 60 seconds and then after every 15 seconds, till patient got intubated. Along with this, time of onset and percentage of neuromuscular blockage was also assessed. Onset of time and duration of action were more in case of rocuronium group as compared to succinylcholine group.

TOF : TRAIN OF FOUR, IOP : INTRAOPTIC PRESSURE

Succinylcholine is a depolarising muscle relaxant for rapid endotracheal intubation used since decades, but its use is associated with a number of complications, eg Bradycardia, asystole, malignant hyperthermia, raised IOP etc, so need of depolarizing neuromuscular relaxants with which the onset of action is rapid is there. Because of danger of hyperkalemic cardiac arrest after succinylcholine in children with unrecognized muscular dystrophy 1-4 there have now seen moves to limit the use of succinylcholine in children 7-8. Hophkins 8 has indicated that there would be good reason not to use succinylcholine if another drug had the same advantage with fewer side effect.

Rocuronium is a steroidal, non depolarizing neuromuscular blocking agent having rapid onset of action and intermediate duration of action and good hemodynamic stability, having neuromuscular potency about 1/5th of vecuronium.

Objective of the study was to evaluate in blinded fashion the intubating condition with rocuronium after administration of 3 *ED 95 09 mg/kg, in comparison to succinylcholine 15 mg/kg

Present study was done in ASA grade I and II children to assess the onset of action and intubating conditions with rocuronium, so that whether we could use it when succinylcholine is relatively contraindicated. We have used TOF guard as main parameter to assess the neuromuscular blockage

Methods

After approval of ethical committee and informed consent of parents, this randomized double blind study was carried out in ASA grade I and II patients of age 1-5 years. This study was carried out with 50 patients. Patients with airway problems, neuromuscular disorders or receiving medication known to interact with neuromuscular blocking agents were excluded. IV lines secured, & All patients premedicated with injection atropine 0.01 mg/kg and injection fentanyl 1 µg/kg after premedication, pulse oximeter and noninvasive BP monitor were attached. Vitals of patient evaluated. Electrodes of nerve stimulator TOF guard were applied to forearm to stimulate the ulnar nerve. Active electrode on the palm at apex of interphalangeal space between thumb and index finger. Reference electrode placed on palmar surface of base of index finger. Test hand was immobilized in supine position using arm board. Free movement during evoked thumb adduction was allowed by fixation of the extended ulnar fingers by adhesive tape.

Patients were preoxygenated with 100% oxygen. Anaesthesia was given with injection thiopentone sodium 5 mg/kg and injection rocuronium 0.9 mg/kg or injection scoline 15 mg/kg. Before administration of any relaxants, supramaximal stimulus was determined with the help of TOF guard by contraction of adductor pollicis and flexor digitorum. The thumb adduction was quantified via force displacement transducer. Time of injection of relaxant was noted. Every one second single twitch was given till 100% suppression of control of twitch response. Same blinded anaesthetist assessed intubating conditions by using Goldberg scale. Maintenance of anaesthesia was carried out with 40% oxygen and 60% nitrous oxide and 0.5% to 0.8% intermittent sevoflurane. After the surgery, in R group neuromuscular blockade was reversed with injection atropine 0.02 mg/kg IV and injection neostigmine 0.05 mg/kg IV. Significance of difference between two groups was determined by Chi square test. Significance assessed by <0.05. During operation heart rate and non invasive blood pressure were determined by cardio cap monitor at one minute interval during the first 30 minute of operation, and then 3 minutes thereafter. Oxygen saturation and expiratory carbon dioxide monitoring done through out the operation. Normocapnia and normal body temperature maintained through out operation.

Results

Demographic characteristics

	R (n = 2 5)	S (n = 2 5)	P value
A g e (y r s)	4 1 5 +/- 1 2 8	4 + / - 1 2 9	> 0 0 5
W e i g h t (k g)	1 2 2 0 +/- 2 2 8	1 2 1 5 +/- 2 6	> 0 0 5
S e x (M / F)	1 6 / 9	1 8 / 7	> 0 0 5

Statistical significance of different variables were determined by TURKEY'S TEST or STUDENT' TEST for paired and unpaired variables as indicated P < 005 was considered significant

Time, course and action(in minutes)

	R (n = 2 5)	S (n = 2 5)	P value
O n s e t t i m e	9 0 +/- 3 0 4 7	6 2 8 +/- 1 1 2	< 0 0 0 1
Clinical duration	2 8 + / - 6	9 + / - 3	< 0 0 0 1

In rocuronium group, 18patients had 100% suppression of supramaximal stimulus and 7 had 95 % suppression While in scoline group, 20patients had 100% suppression and 5 had 94% suppression With intubating dose of rocuronium, 20patients were intubated in 60 seconds and 5 patients in 90 seconds In scoline group all the 25 patients were intubated within 60 seconds Onset time was shorter with scoline (5325 +/- 1025 seconds) than with rocuronium (1012 +/- 2798 seconds)P<0001

Scoring of intubating conditions

s c o r e	j a w r e l a x a t i o n	v o c a l c o r d s	Response to intubation
0	p o o r	c l o s e d	severe coughing
1	M i n i m a l	C l o s i n g	Mild coughing
2	M o d e r a t e	M o v i n g	Slight diaphragmatic movement
3	g o o d	O p e n e d	n o n e

Total score of 8-9 excellent, 6-7 good, 3-5 fair, 0-2 poor

In both R and S group, total score of 8-9 was observed(P>005)

Discussion

The aim of our study was to compare the intubating condition by using 09 mg/kg rocuronium or with scoline 15 mg/kg to confirm that rocuronium could provide good intubation condition as compared to scoline,& be the ideal choice in case scoline is contraindicated MALIGNANT HYPERTHEMIA association of US and Germany, strongly advises discontinuation of scoline because of its side effects like intractable cardiac arrest, hyperkalemia, rhabdomyolysis, acidosis and even death in apparently healthy children

O' Kelly B et al 12 studied pharmacokinetics of rocuronium in pediatrics patients and concluded that weight rather than surface area is more useful for calculations of doses in pediatric patients Depending on these , we choose the bolus dose of rocuronium 09 mg/kg (3*ED95)

Quality of neuromuscular block at larynx was comparable by intubating score

Earlier blockage of laryngeal muscles rather than adductor pollicis by rocuronium and ease of intubation could not be judged by depression of single twitch All tha patients in rocuronium

group had excellent or good intubating conditions when no diaphragmatic activity. It is very useful when scoline is relatively contraindicated.

JFCurl (11) and colleagues observed good intubating conditions with rocuronium at 45 sec with 0.6 ug/kg with propofol and fentanyl with 2ug/kg. Here we used fentanyl as analgesic agent. Fentanyl is short acting opioid and has hypnotic effect on patients. Curl and associates also used propofol, which relaxes laryngeal muscles, so they could intubate in 45 seconds as we were in 60 seconds.

Fuch's Budder and Tassonyi (9) documented that increased dose of rocuronium 0.6 to 0.9 mg/kg in children significantly decreased onset of action and prolonged duration of action.

Susan Woelfel (13) found clinical duration of 267 +/- 19 minutes with 0.6mg/kg. Stoddart observed 242 +/- 66 minutes. In our study duration of action was 28 minutes, which was with dose of 0.9mg/kg rocuronium. Effect could be prolonged due to more doses and also due to summative effect of rocuronium and fentanyl.

Considering the longer duration of onset with rocuronium our study seems surprisingly special, especially if one considers that succinylcholine was administered with a dose of 45*ED95. While rocuronium was administered with a dose of 2 * ED95 (17).

Our results support the hypothesis that onset of motor blockage of vocal cords and diaphragm after rocuronium does not significantly differ from succinylcholine (21).

Pre induction administration of opioids significantly improved condition of intubation with rocuronium.

In nutshell, we conclude that injection rocuronium 3*ED95 (0.9 mg/kg) can be used as an alternative to scoline in pediatric patients where scoline is contraindicated.

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Original article

12

**A COMPARATIVE STUDY ON OUTCOME OF MIDLINE LAPAROTOMY WOUND
CLOSURE**
(Original Article)

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ABSTRACT

Abdominal wound dehiscence is a common complication of emergency laparotomy in Indian setup Factors as relates to burst abdomen and they recommended certain surgical measures These measures included control of nausea and vomiting, decompression of distended abdomen, choice of appropriate sutures, control of infection and use abdominal drains Wound dehiscence is related to the technique of closure of abdomen and the suture used it is interned to study the closure of abdomen with non-absorbable (Polypropylene, Nylon) versus delayed-absorbable (Polydioxanone)in cases operated at VS Hospital , Ahmedabad with respect to the effectiveness of these different suture materials in our setup

METHODS AND MATERIALS:The present clinical Prospective comparative study was carried out at the surgery department of VS hospital from June2014 to Jan 2017 Patients underwent both elective and emergency laparotomy through midline vertical incisions First 50 cases of midline laparotomy closure were studied with these three suture materials; Polydioxanone (PDS), Nylon and Polypropylene (PPL) with/without retention suture The patients were followed regularly after surgery up to 6 months

RESULT: Wound infection is the most important single factor in the development of burst abdomen and incisional hernia⁶1The incidence of wound infection was in Polypropylene (Prolene)(125%), in Polydioxanone (PDS) (20%) and in Loop Nylon(125%) The incidence of wound infection was related to type of surgery As in over study infections were higher in emergency surgery then planned surgery, it was 10% in PDS group,125% in PPL group and 125% in loop nylon group And in planned surgery only one case had wound infection, which was in nylon group

CONCLUSION: continuous suture technique using no1 loop Polydioxanone (PDS) had comparatively higher incidence of wound infection, and also report a case of burst abdomen, but had low incidence of scar pain for closure of midline laparotomy incision, No1 Polypropylene had high incidence of stitch granuloma and Loop nylon no1 had a low incidence of infection and stitch granuloma but high incidence of scar pain Burst abdomen had high incidence in high risk

patient irrespective of suture material used, however this incidence can be reduced by prophylactic retention suturing

KEY-WORDS: Abdominal wound dehiscence , Burst abdomen, Incisional hernia, Stitch granuloma

INTRODUCTION:

Whether inflicted by chance or sustained during a surgical procedure, every wound is simply a disruption of the normal continuity of tissue. When tissue has been disrupted so severely that it cannot heal naturally (without complications or possible disfiguration) it must be held in opposition until the healing process provides the wound with sufficient strength to withstand stress without mechanical support. Although the skill and technique of the surgeon is important, so is the choice of wound closure material^[1,2]. Every surgeon's dream is to close the abdominal incisions securely, so as to prevent complications, such as wound infection, dehiscence, incisional hernia, suture sinuses^[3]. Abdominal wound dehiscence is a common complication of emergency laparotomy in Indian setup. Wound dehiscence carries with it a substantial morbidity and mortality in addition to increase in cost of care. Its prevention is important to reduce postoperative morbidity and mortality. This however has not deterred continuing research in attempts to eliminate the problem^[4]. Factors as relates to burst abdomen and they recommended certain surgical measures. These measures included control of nausea and vomiting, decompression of distended abdomen, choice of appropriate sutures, control of infection and use abdominal drains. In this study surgeon's experience and use of more than two abdominal drains were factors significantly associated with wound dehiscence^[8]. Many patients have a poor nutritional status and the presentation of patients is often delayed. This makes the problem of wound dehiscence more common and graver. Wound dehiscence is related to the technique of closure of abdomen and the suture used. While the choice may not be so important in elective patients who are nutritionally adequate, do not have any risk factor for dehiscence and are well prepared for surgery, however it may prove crucial in emergency patients who often have multiple risk factors for developing dehiscence and strangulation of sheath is the proverbial last straw in precipitating wound failure^[9]. Since decades Polypropylene and loop nylon have been widely used for closure of laparotomy wound. Both are a monofilament, non-absorbable suture. Tensile strength of both lasts >1 year^[10]. A suture material Polydioxanone (PDS) was introduced to reduce the complication rate of laparotomy by its newer properties. Polydioxanone (PDS) is a monofilament, delayed absorbable suture^[5]. So it is interned to study the closure of abdomen with non-absorbable (Polypropylene, Nylon) versus delayed-absorbable (Polydioxanone) in cases operated at VS Hospital , Ahmedabad with respect to the effectiveness of these different suture materials in our setup.

METHODS AND MATERIALS: The present clinical Prospective comparative study was carried out at the surgery department of VS hospital from June 2014 to Jan 2017. Patients underwent both elective and emergency laparotomy through midline vertical incisions. First 50 cases of midline laparotomy closure were studied with these three suture materials; Polydioxanone (PDS), Nylon and Polypropylene (PPL) with/without retention suture. The

patients were followed regularly after surgery up to 6 months A predesigned proforma was used to collect the information for individual cases Data was collected, based on post-operative wound complications including post-operative wound infection, wound dehiscence, stitch granuloma, scar pain and incisional hernia

Inclusion criteria:

- Both male and female patients
- Patients older than 15years
- Consent to participate in study
- Study included both emergency and elective laparotomy
- Only continuous suture technique was used
- Only vertical midline abdominal incision closures were included

Exclusion criteria:

- Age < 15 years
- Patients with Pre or Postoperative diagnosis of advance stage malignancy
- Patients who have abdominal skin infection
- Patients who have previous history of laparotomy operation
- patients who have HIV infection

RESULTS:A total of 50 patients randomly selected were included from June 2014 to Jan 2017 After midline incisions , closure was performed with PDS loop , Polypropelene and Loop Nylon in 50 cases Preference to mass closure was given to all patient proper skin care was taken and pre-operative and intra-operative antibiotic was given in all laparotomy

TABLE – 1 : DISTRIBUTION ACCORDING TO AGE

AGE IN YEAR	NUMBER OF PATIENTS	CLOSURE WITH PPL	CLOSURE WITH PDS	CLOSURE WITH NYLON
16 – 25	14(28%)	5	4	5
26 – 35	11(22%)	3	3	5
36 – 45	12(24%)	6	1	5
46 – 55	8(16%)	1	2	5
56 – 65	4(8%)	1	0	3
66 – 75	1(2%)	0	0	1
TOTAL	50	16(32%)	10(20%)	24(48%)

PPL= Polypropelene, PDS= Polydiaxanone

The mean age is 32 years and ranges from 16 to 75 years

Majority of the study participants are in the age group of 16 – 25 years constituting 28 %

TABLE – 2 : DISTRIBUTION ACCORDING TO SEX

SEX	PATIENTS	PERCENTAGE(%)
FEMALE	16	33
MALE	34	67
TOTAL	50	100

In our study, no of male patients operated for laparotomy were more as compared to no of females

Here Male to female ratio is 194: 1

TABLE 3 : DISTRIBUTION ACCORDING TO NATURE OF OPERATION AND SUTURE MATERIAL

	EMERGENCY	PLANNED	PERCENTAGE
LOOP PDS (out of 10)	4	6	20%
POLYPROPYLEN E (out of 16)	10	6	32%
LOOP NYLON (out of 24)	20	4	48%
TOTAL (50)	34	16	100%

PPL was used in 6 planned & 10 emergency laparotomy Loop PDS was used in 6 planned & 4 emergency laparotomy Loop Nylon was used in 4 planned & 20 emergency laparotomies

TABLE – 4 : INCIDENCE OF COMPLICATIONS

	PDS LOOP Out of 10	PROLENE Out of 16	LOOP NYLON Out of 24	TOTAL Out of 50	%
WOUND INFECTION	E=2 P=0 20%	E=2 P=0 125%	E=2 P=1 125%	6	12 %

BURST ABDOMEN	E=1 P=0 10%	E=0 P=0 0%	E=1 P=0 4%	2	4%
STITCH GRANULOMA	E=1 P=0 10%	E=2 P=2 25%	E=2 P=1 125%	8	16%
SCAR PAIN	E=0 P=0 0%	E=1 P=1 125%	E=3 P=1 1666%	6	12%
INCISIONAL HERNIA	0	0	0	0	0

E=emergency operation, P= planned operation

The early and late wound complications encountered in all three suture materials used were as follows

- Wound infection is the most important single factor in the development of burst abdomen and incisional hernia^[6] The incidence of wound infection was in Polypropylene (Prolene)(125%), in Polydioxanone (PDS) (20%) and in Loop Nylon(125%) The incidence of wound infection was related to type of surgery As in over study infections were higher in emergency surgery then planned surgery, it was 10% in PDS group, 125% in PPL group and 125% in loop nylon group And in planned surgery only one case had wound infection, which was in nylon group
- The incidence of stitch granuloma was 1 (10%) in Polydioxanone (PDS loop), 4 in Polypropylene (Prolene) sutures (25%) and 3 in loop nylon (125%)
- The incidence of scar pain was 2 in Polypropylene (Prolene) sutures (125%) and 4 in loop nylon (166%) Incidence of scar pain was more in loop nylon group then polypropylene group, however no pain was observed in PDS group Pain which occurred, was mild pain(2-3) according to VAS scoring system and relieved by analgesic medicine Similar study demonstrated a statistically higher incidence of scar pain in the Nylon group^[6]
- There were 2 case of burst abdomen in the present study, which was done on an emergency basis in Polydioxanone (PDS) group and loop nylon group, both patient had high risk for burst abdomen^[6] There was no case reported with burst abdomen in prolene group one similarly study shows that there was high risk of burst abdomen with PDS group compare to other group^[6]
- Incidence of burst abdomen was 10% in high risk group if prophylactic retention suture not taken Total 20 high risk patients were operated in them 2 patients had burst abdomen in whom prophylactic retention suture not taken Retention suture was beneficial in high risk patients for prevention of burst abdomen irrespective of suture material used Our conclusion that prophylactic retention sutures can decrease the incidence of abdominal wound dehiscence without imposing remarkable postoperative complications^[5,6]
- There was no incidence of incisional hernia in any group till 6 months follow up The short follow up period (6 months) may be a possible reason for the absence of incisional hernias in this

study since > 5% of incisional hernias have been reported to occur after 6–12 months⁶⁴ So this study required more follow up period for any comment on incisional hernia

CONCLUSION:Based on the observations made in this study, it has been concluded that continuous suture technique using no1 loop Polydiaxanone (PDS) had comparatively higher incidence of wound infection, and also report a case of burst abdomen, but had low incidence of scar pain for closure of midline laparotomy incision, No1 Polypropylene had high incidence of stitch granuloma and Loop nylon no1 had a low incidence of infection and stitch granuloma but high incidence of scar pain Burst abdomen had high incidence in high risk patient irrespective of suture material used, however this incidence can be reduced by prophylactic retention suturing

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Original article

13

CONSCIOUS SEDATION WITH DEXMEDETOMIDIINE/ MIDAZOLAM INFUSION IN PATIENTS WITH INTRATHECAL BUPIVACAINE FOR INFRAUMBILICAL SURGERIES

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Key words:CONSCIOUS SEDATION ,DEXMEDETOMIDIINE/ MIDAZOLAM INFUSION ,INFRAUMBILICAL SURGERIES

ABSTRACT

Background: spinal anesthesia is very much common regional anesthesia Assurance and conscious sedation is required to make patients calm and co-operative We have also assessed effect of dexmedetomidine/ midazolam infusion on sensorimotor characteristics of spinal bupivacaine

Material and methods :

We selected 50patients for the study, 25 in each group

Group-D : Received a loading dose of IV dexmedetomidine 05mcg/kg by infusion pump over 10 min + 05mcg/kg/hr infusion till the end of surgery

Group-M : Recieved a loading dose of IV midazolam 002mg/kg by infusion pump over 10 min + 004mg/kg/hr infusion till the end of surgery **Observation** The pulse rate & SBP in group D was significantly lower as compared to group M from 10 minutes to 120 minutes after subarachnoid block Significant difference was seen between group D and group M There was no statistically significant change in pulse rate between 120mins to 24 hrs postoperatively between the groups

There was no statistically significant difference up to 24 hrs post operatively

There was no significant change in RR and SPO₂ in any group

Highest sensory level and duration of sensory and motor blockade and duration of analgesia and No Of analgesic requests in 24 hrs were compared

Intraoperative and postoperative adverse effects were noted

Higher sensory level (T₅ 28% and T₆ 72%) is achieved in Group D as compared to Group M (T₆ 44% and T₈ 56%)Time to regression by two dermatome (min) in group D is 211 ±114

where as in group M is 162 ± 113 which is highly significant ($p < 0001$) Time of 1st rescue analgesic (min) in group D is 325 ± 237 where as in group M is 218 ± 153 which is highly significant ($p < 0001$) Time of motor block to Bromage 1 (min) in group D is 246 ± 165 where as in group M is 236 ± 166 which is statistically significant ($p < 005$) Analgesic requests in 24 hrs (no) in group D is 196 ± 035 where as in group M is 34 ± 050 which is highly significant ($p < 0001$) In group D hypotension occurred in 2 (8%) patients and bradycardia in 5 (20%) patients No other adverse effect noticed in group D In group M respiratory depression occurred in 4 (16%) patients and shivering in 2 (8%) patients

Conclusion: DEXMEDETOMIDIINE is more effective supplementation then Midazolam in terms of sedation as well as prolonged sensorimotor characteristics of intrathecal bupivacaine

Key words: conscious Sedation, dexmedetomidine infusion, midazolam infusion, intrathecal bupivacaine

INTRODUCTION

Multimodal anesthesia techniques are available for infraumbilical and lower limb surgeries eg- regional anesthesia (spinal, epidural), local anesthesia, peripheral block, general anesthesia Subarachnoid block is popular among them

Bupivacaine is the most commonly used local anaesthetic agent having satisfactory sensory and motor blockade with limited duration of action Various intrathecal adjuvant have been tried with local anaesthetic agents

“Pain” is an unpleasant sensory and emotional experience associated with actual / potential tissue damage or described in terms of such tissue damage¹¹ Many factors modify pain

Concept of post operative analgesia is gaining importance now-a-days So the aim of anesthesia technique should be;- minimum invasive, causes minimum adverse effect, provide prolonged analgesia and economically acceptable

CONSCIOUS SEDATION only some of the centers in the medullary reticular formation and thalamus are depressed in a dose dependent manner Thus this level of sedation additionally provides the benefit of preservation of protective airway reflexes, especially in monitored anesthesia care¹⁹

Dexmedetomidine a parenteral selective α_2 agonist³⁹ with sedative anxiolytic and analgesic properties without causing respiratory depression The sedative and analgesic effects

are mediated by α_2 adrenergic receptors in the brain(Locus ceruleus)¹⁵ and spinal cord So it provides adequate sedation after spinal anesthesia, reduces anxiety level, physiological and psychological stress and patient and surgeon satisfaction It also alleviates position related discomfort Most importantly it has an opioid sparing effect so does not significantly depresses respiratory drive Few studies suggest that IV dexmedetomidine supplementation prolongs the effect of spinal anesthesia¹⁸ Dexmedetomidine has unique pharmacodynamic properties it is suitable for peri-operative care during general and regional anesthesia It is used as adjuvant to regional anesthesia¹⁴

Midazolam is a water soluble short acting benzodiazepine which is used for pre-operative medication and conscious sedation The amnestic effect of midazolam is more potent than its analgesic effect Thus patients may be awake following administration of midazolam but remains amnestic for events and conversations for several hours^{27,28,29}

The present study was undertaken to evaluate efficacy and potency of midazolam and dexmedetomidine infusion administered intra-venously just after induction with intra thecal bupivacaine for effect on sensory and motor blockade, sedation hemodynamic stability, duration of effective analgesia, post-operative pain relief, post-operative analgesic requirement and adverse effect of drugs used

AIMS OF STUDY

present study was designed to compare the effect of intravenous dexmedetomidine (Group-D), intravenous midazolam (Group-M) administered just after giving spinal anesthesia with 30 ml bupivacaine in various infraumbilical and lower limb surgeries for the following points:- To evaluate the efficacy of IV dexmedetomidine and IV midazolam on subarachnoid block by intrathecal bupivacaine, To evaluate the effect of both IV drugs on sensory and motor blockage, To observe intraoperative and postoperative hemodynamic stability in both the groups, To observe intraoperative and postoperative sedation, Duration of effective analgesia, To observe any perioperative adverse effect, Duration of postoperative analgesia

MATERIAL AND METHODS

A randomized controlled study was conducted on 50 patients (ASA grade I or II) aged 20-60 years scheduled for infra-umbilical surgeries after taking informed consent

Study Protocol:-

Detailed preoperative history and physical examination of patient done Patients having h/o allergy to any study drug and contraindications for spinal anesthesia are excluded from study All the patients were evaluated pre-operatively and laboratory investigations complete blood count, blood sugar, renal function tests, serum bilirubin, serum electrolytes and chest x-ray, ECG were reviewed

Procedure was explained to patient Patient was informed about perception of pain and perception of any discomfort during surgery VAS score was explained to the patient on 1-10 scale

Written informed consent of patient and their relative taken

EXCLUSION CRITERIA :

Patient's age less than 20 years and above 60 years, Pregnant patients,

Infection at site of block History of allergy to local anaesthesia drug, Patient with severe cardiac or respiratory disease, Patient with coagulation disorder, Patients who were selected and posted for surgeries were randomly allocated in two groups

Group-D : Received a loading dose of IV dexmedetomidine 05mcg/kg by infusion pump over 10 min + 05mcg/kg/hr infusion till the end of surgery

Group-M : Received a loading dose of IV midazolam 002mg/kg by infusion pump over 10 min + 004mg/kg/hr infusion till the end of surgery

PREPARATION

All the patients were fasted for minimum 6 hours prior to scheduled time of surgery Psychological preparation was done and the procedure explained to all the patients in advance

On arrival in the operating room an IV access was secured using an 18G cannula Each patient preloaded with infusion of 10 to 15 ml/kg of lactated Ringer's solution Standard monitoring included continuous electro-cardiogram, pulse-oximetry, non-invasive blood pressure measurements and visual assessment of respiration Inj Ondansatrone 008 mg/kg iv and inj Glycopyrolate 0004mg/kg IM given as premedication 30 min before dura puncture

PROCEDURE

In all the patients, under strict aseptic and antiseptic precautions, lumbar puncture was performed (after giving local anaesthesia with a 26G hypodermic needle) using a 25-gauge Quincke's needle positioned midline at the L3-L4 interspace in lateral position

Patients of both the group received 3 ml (15 mg) hyperbaric bupivacaine 0.5% in subarachnoid block. After completion of injections the patients were immediately returned to the supine position, pillow was placed under head of the patient and time of injection was noted. Then afterwards no change in patient's position done^{9,25}. Just after giving supine position patients of group D received a loading dose of IV dexmedetomidine 0.5 mcg/kg by infusion pump over 10 min + 0.5 mcg/kg/hr infusion till the end of surgery and group M patients received a loading dose of IV midazolam 0.02 mg/kg by infusion pump over 10 min + 0.04 mg/kg/hr infusion till the end of surgery.

Sensory block was assessed by the loss of sensation to pinprick. Time to onset of sensory block, maximum level of sensory block achieved and time to achieve maximum sensory block were noted in minutes. Sensory level in between T₅ - T₈ was achieved. Time from subarachnoid injection to second sacral dermatome (S₂) was assessed by pinprick and recorded in minutes.

Motor block was assessed by Modified Bromage score.

Time for onset of grade-3 motor blockade was noted.

Total duration of grade-3 motor blockade was noted.

DATA COLLECTION

Pulse, BP, SPO₂ and RR were recorded on 1, 5, 10, 20, 30, 45, 60, 90 and 120 minutes after giving spinal anaesthesia.

INTRA OPERATIVE ADVERSE EFFECTS:-

Patients of both the group are observed for adverse effects like,

Sedation, Hypotension, Bradycardia, Respiratory depression

Nausea, Vomiting, shivering, Dryness of mouth, Involuntary (paradoxical) movements⁴⁰. Sedation levels were assessed using Ramsay's sedation score.

Hypotension (defined as 30% fall in systolic BP from the baseline systolic BP) was treated with intravenous fluids and inj Mephentermine 6 mg iv. Bradycardia (defined as pulse rate < 60 beats per minute) was treated with inj Atropine 0.6 mg iv. Shivering was treated with 100% O₂, warm fluids and adequate patient covering⁷. No other sedative or analgesic drug was given to the patients intraoperatively. Respiratory depression (defined as RR < 12 / min or SPO₂ < 90%) was treated with 100% O₂. In addition to the loading dose of intravenous fluids, patients received

a maintenance infusion of lactated ringer's solution as calculated according to the conventional formula

Shivering, nausea, vomiting if present treated accordingly

Duration of surgery for each case was noted

After completion of surgery patients are monitored every 30 min upto 2 hrs then at 4 hrs, 6 hrs, 12hrs and 24hrs

Pain measurement was done using VAS scale

When VAS score was >3 cm, the patients were given inj Tramadol 1 mg/kg IV + inj Ondansatrone 008 mg/kg IV and 'Time to first rescue analgesic' recorded in minutes Patients were inquired about neurological deficit 7 days post-operatively

STATISTICAL ANALYSIS

Statistical analysis done using the SPSS software Inter-group comparison was done, using paired 't' test as well as comparing mean and standard deviation A 'p' value < 005 was taken as significant an 'p' value < 0001 was taken as highly significant

OBSERVATIONSAND RESULTS

The present study was undertaken to evaluate efficacy and potency of midazolam and dexmeditomedine administered intra-venously just after induction with intra thecal bupivacaine for effect on sensory and motor blockade, sedation hemodynamic stability, duration of effective analgesia, post-operative pain relief, post-operative analgesic requierment and adverse effect of drugs used We have evaluated 50 patients randomly divided in two groups of 25 each

Table 1

DEMOGRAPHIC CHARACTERISTICS			
	Group D	Group M	Inference
Sex(M/F)	15/10	13/12	NS
Age(Years)	4608 \pm 590	4348 \pm 577	NS
Height(cm)	1646 \pm 6034	16404 \pm 574	NS
Weight(kg)	6684 \pm 450	6572 \pm 483	NS
ASA I/II	13/12	12/13	NS
Duration of	954 \pm 1283	980 \pm 1021	NS

surgery (min)			
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Demographically both groups are comparable There was no significant difference between them Haemodynamics;

There was significant difference in HR 5 min after administration of the study drugs In group D ,HR and SBP remain 20% less than baseline from 10 to 120 min in comparison to Group M(P<0001)There was no change in haemodynamics in Postoperative period

RSS score:

Mean RSS of the D group was 34 whereas of M group was 54 after 15 mins(p<0001)

Table 2

CHARACTERISTICS OF SPINAL BLOCK				
	Group D	Group M	P-Value	Inference
Time to regression by 2 dermatome (min)	211 ± 114	162 ± 113	< 0001	HS
Time of 1 st rescue analgesic (min)	325 ± 237	218 ± 153	< 0001	HS
Time of motor block to Bromage 1(min)	246 ± 165	236 ± 166	003	S
Analgesic requests in 24 hrs (no)	196 ± 035	34 ± 050	< 0001	HS

Table 2 shows characteristics of spinal block in the two groups Statistically highly significant difference was present between the two groups for time to regression by 2 dermatome, time of 1st rescue analgesic and analgesic requests in 24 hrs (no)

Highest sensory level:

Significantly higher sensory level is achieved in Group D 72% patients have T6 level, In group M 44% patients have T6 level

Adverse effects:

In group D 6 patients have bradycardia & 2 have Hypotension, In group M 4 patients have Respiratory depression, 2 patients have shivering like various adverse effects

Postoperative Monitoring :

We have monitored all patients in post-operative period till 24 hrs for HR, BP, SpO₂ , RR, RSS and VAS every 30 mins till 2 hrs then at 4 hrs, 6 hrs, 12 hrs and 24 hr Post operative Vital parameters of All patients were in normal limits

Analgesics were repeated after VAS was more than 3

All patients were conscious and co-operative

No adverse effect noted during post-operative monitoring

Discussion

Spinal anaesthesia is the preferred anaesthesia technique for lower abdominal and lower limb surgeries Bupivacaine is the most commonly used local anaesthetic in spinal anaesthesia The use of adjuvants with local anaesthetics provides prolonged and superior quality of anaesthesia and postoperative analgesia with relatively small doses of individual drugs with less requirement of postoperative analgesia Duration of analgesic action of local anaesthetics can be prolonged by mixing them with certain pharmacologic agents called additives or adjuvants A wide variety of centrally active drugs are used to provide sedation, anxiolysis and amnesia Dexmedetomidine is an attractive alternative to anesthetic adjuvant used at present due to its anesthetic sparing and hemodynamic stabilizing effects Used along with regional anesthesia, dexmedetomidine prolongs the action of local anesthetics along with providing analgesia and sedation without causing respiratory depression Dexmedetomidine is also used as a sedative for monitored anesthesia care due to its analgesic properties, co-operative sedation and lack of respiratory depression³⁶

Current literatures suggest a ceiling effect on prolonging post-spinal analgesia after 0.5 mg /kg boluses With increasing the dose beyond 0.5 mg /kg resulted in unwanted side effects notably bradycardia and excessive sedation Dexmedetomidine has linear pharmacokinetics and dose dependent sedative action, when a loading dose of dexmedetomidine 1 mcg/kg administered over 10 min, the average peak concentration was reached in 17 min with terminal half-life of 2 hr 10 min So a single bolus dose might be sufficient for procedure lasting less than 60 min whereas continuous infusion is needed for longer procedure

DEMOGRAPHIC CHARACTERISTICS :

Table 1 shows demographic characteristics of both the groups The two groups were comparable ($p > 0.05$)

In 2015 **Surjya Prasad Upadhyay et al³⁷**, study shows same comparable demographics

Haemodynamic characteristics :

Heart rate :HR (bpm) variation in two study group Base line (grp D 993 ± 652 , grp M 993 ± 692) and 1 min (grp D 990 ± 468 , grp M 986 ± 688) values in both the group are comparable and statistically not significant ($p > 0.05$) After 5 mins in Group D and as compared to Group M fall in HR is statistically highly significant ($p < 0.001$)

Lower heart rate in Group D can be explained due to decreased sympathetic outflow by activation of post-synaptic α_2 receptors in CNS and decreased circulatory levels of catecholamines caused by dexmedetomidine

In 2014 **Swati Bist et al³⁸**, observed that the reduction in heart rate was more in group D than in group M, 5 mins afterwards starting dexmedetomidine infusion

In 2011 **Yongxin et al⁴¹**, observed that the Dexmedetomidine patients in this study had a significant reduction in HR which occurred most commonly during a bolus or within 10 minutes of the start of an infusion

In 2014 **Chilkunda et al⁸**, observed significantly higher proportion of patients in the dexmedetomidine group (33%) had bradycardia compared to the control group (4%)

Systolic Blood Pressure :

Variation in systolic blood pressure amongst the two groups There is no statistically significant difference in SBP of the two groups at base-line, one min and at 5 min 10 min onwards there is a highly significant difference in SBP in the two groups

Swati Bist et al³⁸ observed that Group D recorded a significant fall in systolic blood pressure (SBP) after 40 minutes ($p < 0.006$) **Chilkunda et al⁸**, conducted a study in which They observed significantly higher proportion of patients in group D had bradycardia and fall in systolic blood pressure more than 20% of baseline value Systolic, diastolic, and mean arterial blood pressures were relatively lower in group D

In 2011 **Yongxin et al⁴** observed that MAP was significantly reduced during the intraoperative period in two groups, and the reduction did not show significant differences between the two groups

Ramssay's sedation score intra-operative RSS in the two study groups The highest level of sedation achieved in the two groups are significantly different Intraoperative Ramsay sedation scores were significantly higher in group D (range 2-4) as compared to group M (range 2-6); ($P < 0001$) Maximum scores in group D ranged from 3 to 4 In group D, the maximum sedation score was 4 whereas in group M maximum sedation score was 6 RSS of Post-operative period in both groups were comparable with no significant difference

KayaFN et al²⁰, observed that the median (range) of the highest Ramsay sedation score was 2 (2–5) in the dexmedetomidine group, 3 (2–5) in the midazolam group ($P < 0001$) Excessive sedation (Ramsay sedation score of 5) was observed in two patients of the dexmedetomidine group and in five patients of the midazolam group

Sang Hi Park et al³⁵, observed that there was no patient who showed excessive sedation in the control group To show excessive sedation means Ramsay sedation score = 5 or 6) In the dexmedetomidine 05 Group and 10 group RSS was significantly higher than control group In both Dexmedetomidine groups, sedation score was the deepest around the 20-minute period and it decreased thereafter

Chilkunda et al⁸, observed that intraoperative Ramsay sedation scores were significantly higher in group D (mean 44 ± 07 , range 3-6) as compared to group C (mean 2 ± 01 , range 2-3) ($P < 0001$)

CHARACTERISTICS OF SPINAL BLOCK :

Table 4 shows effect of the study drugs on different characteristics of spinal block Time to regression by two dermatome (min) in group D is 211 ± 114 where as in group M is 162 ± 113 which is highly significant ($p < 0001$) Time of 1st rescue analgesic (min) in group D is 325 ± 237 where as in group M is 218 ± 153 which is highly significant ($p < 0001$) Time of motor block to Bromage 1 (min) in group D is 246 ± 165 where as in group M is 236 ± 166 which is statistically significant ($p < 005$) Analgesic requests in 24 hrs (no) in group D is 196 ± 035 where as in group M is 34 ± 050 which is highly significant ($p < 0001$)

Swati Bist et al³⁸, show that better sensorimotor characteristics with Dexmedetomidine group than Midazolam group P value < 0001

In 2015 **Kiran Kumar S et al** (22) observed that the Duration for 2 dermatomal Regression of sensory blockade (1374 ± 109 mins), duration of sensory blockade (2698 ± 207 min) and duration

for motor block regression to Modified Bromage scale 0 (2207 ± 165 mins) prolonged significantly than clonidine and control groups

In 2014 **Ahmed et al**², observed that dexmedetomidine intravenously or intrathecally extended the duration of bupivacaine motor block and it was significantly longer in the IT group compared with the IV group

KayaFN et al²⁰, observed that the time for sensory regression of two dermatomes was 145 ± 26 min in the dexmedetomidine group, than in the midazolam ($P < 005$) and saline ($P < 005$) groups **Reddy et al**³², Conducted a study and observed better spinal characteristics in Dexmedetomidine group than clonidine and placebo groups

Highest sensory level achieved : Table 6 shows highest sensory level achieved in the both study groups Higher sensory level (T_5 28% and T_6 72%) is achieved in Group D as compared to Group M (T_6 44% and T_8 56%) our results correlate with results of Swati **Bist et al**³⁸, **KayaFN et al (20)**, **Reddy et al** ($p < 0001$)

Adverse effects (in no of patients) in the two different groups In group D hypotension occurred in 2 (8%) patients and bradycardia in 5 (20%) patients No other adverse effect noticed in group D In group M respiratory depression occurred in 4 (16%) patients and shivering in 2 (8%) patients Adverse effect profile in different groups are related to pharmacological properties of the study drugs

In 2011 **Yongxin et al**⁴¹, and they observed that the patients who had received dexmedetomidine for sedation during the surgical procedure had no respiratory depression but in midazolam group total 8 patients had respiratory depression The number of patients who suffered bradycardia was significantly larger in the dexmedetomidine group

In 2014 **Chilkunda et al**⁸, conducted a study in which there was no shivering in group D but present in control group (10%)

Conclusion:

DEXMEDETOMIDINE markedly prolongs duration of sensory blockage, arousable sedation and provides excellent quality of post-operative analgesia with decreases no of analgesic requests in 24 hrs But it should be used cautiously due to its hemodynamic effects

MIDAZOLAM provides stable hemodynamics with higher level of sedation but comparatively less effect on quality of spinal blockage and post-operative analgesia

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ORIGINAL ARTICLE

14

STUDY OF YOUNG ADULTS WITH ACUTE MYOCARDIAL INFARCTION IN REFERENCE TO RISK FACTORS AND SHORT-TERM OUT COME

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ABSTRACT

BACKGROUND: CAD is a major health problem world wide and it's incidence is increasing in young population which is estimated to be 12-16%,in compared to western population ,up to 5% The current study was carried out to assess the incidence, risk factors and short term outcomes of patients with young MI

METHODOLOGY: All patients aged 40 years or less admitted to ICCU of our hospital, diagnosed with MI were studied Total 50 patients' data were analysed statistically using computer software

RESULTS: Incidence of young MI is 13% during study period,more common in males(88%) than females(12%) with mean age of 35 years In our study anterior wall MI(50%) is more common than inferior wall(34%), hyperhomocysteinemia(100%),smoking (82%) and elevated lipo-protein(78%) are leading risk factors

CONCLUSION: Hyperhomocysteinemia and smoking are major risk factors for young MI, though short term outcome is relatively uneventful in our study

INTRODUCTION

Coronary artery disease causing myocardial ischemia is a major health problem worldwide and a leading cause of death not only in western world but also in India nowadays It was considered to be third common cause of mortality after road traffic accident and cancer WHO has estimated 722 million deaths due to CHD globally in 2002 and has predicted 111 million by 2020 Acute MI is a major contributor for morbidity and mortality It is an established fact that acute myocardial infarction usually occurs in a patients older than 45 years However recently more and more patients are found to be suffering from coronary artery disease and having a significant morbidity, psychological stress and financial burden The risk of CAD in Indian is 3-4 times higher than white Americans, 6 times higher than Chinese and 20 times higher than Japanese In

western population incidence of CAD in young is up to 5% as compared 12-16% in Indians However in some studies from India incidence of young MI is reported as high as 25-30% ⁽¹⁾This may be due to changing lifestyle, increasing mental stress, smoking, obesity and consumption of unhealthy junk food along with changing genetic and constitutional factors

The disease carries significant morbidity, psychological effects and financial constraints for the person & family when it occurs at younger age In western world, obesity is considered as major risk factor for MI, while in our setup most people from lower socioeconomic class are normosthenic or thin and lean and are still found to be having ischemic heart disease Many research reports have been published so far highlighting the differences in risk factors, presentation and outcome of myocardial infarction in young patients like presence of classical symptom of angina before MI in elderly people, chronic diseases diabetes and hypertension are common risk factor in elderly while smoking, obesity, hyperhomocysteinemia are more common in young MI patients

Many clinical studies all over world and in various part of India have been conducted and many unrecognized aspects regarding clinical presentation and risk factor have been reported, which are very important if utilized in a patient and community education in risk stratification and risk reduction in young population Hence we consider it worthwhile to study young patients with acute myocardial infarction getting admitted in our tertiary care center to get first hand information regarding risk factor and early outcome of the disease As this is a short -term study on limited number of patients, the findings may not be extrapolated to general population at large, but this may serve as a pilot projects and may help in future studies on same subject or some other related subjects

MATERIAL AND METHODS

All the patients aged 40 years or less admitted with acute myocardial infarction in ICCU of our hospital during the period of 22/10/2010 to 4/9/2012 were studied in present work

The diagnosis of acute MI was considered by presence of 2 of following criteria

- 1) Ischemic chest pain
- 2) Evidence of MI on ECG
- 3) Increase in SCKMB level at the time of admission

Detail clinical history was recorded in each patient with specific attention to the risk factor for coronary artery disease

All patients were examined thoroughly and investigations like ECG, Blood Sugar , Blood urea and creatinine level , Serum CPK-MB level, SLipid profile,

SLipoprotein(a),SUrlic acid level, SHomocysteine level done in all patients

As this is a cross sectional observational study only, we did not intervene in treatment of the Patients and they were treated as per the opinion of the consulting doctor in charge But we did observe the patient for development of any complication and outcome at the time of discharge from hospital

Observation of the study were analyzed statistically by appropriate software

OBSERVATION

Total 384 patients were admitted with acute MI in our ICCU during the period of 22/10/2010 to 4/9/2012 Among them 50 patients (13%) were below the age of 40 years and were studied in present study We observed all the 50 patients for risk factors and outcome during their hospital stay and observations are recorded as follows:

Table I Showing age and gender distribution of patients in present study

Age	Gender	
	Male	Female
20-30	5(10%)	-
30-40	39(78%)	6(12%)

As seen in above table, we found young MI as more of a disease of male gender (88%) 10% of patients in our study were below 30 years of age - all of them were males Our youngest patient was 20 year old male patients The mean age of our patients was 35+/-462 years M:F in our study was 71:1

Table II: Showing type of MI

Type of MI	Male	Female	Total
Anterior wall	21(42%)	4	25(50%)
Anterolateral wall	4(8%)	2	6(12%)
Anteroseptal wall	2(4%)	-	2(4%)
Inferior wall	17(34%)	-	17(34%)

Majority of young patients had anterior wall MI (50%) including all female patients However the difference between anterior and inferior wall MI was not statistically significant as 34% had inferior wall MI

Table III : Showing killip's classification

KILLIP CLASS	No	Percentage
I	45	90
II	5	10
III	-	-
Iv	-	-

None of the patients in present study was in class III or IV, majority of them were in class I as shown in table

Table 4: Showing presence of risk factor for CAD in patients of present study:

Risk factor	Male	Female	Total
Elevated SHomocystine	44(88%)	6(12%)	50(100%)
Elevated Lipoprotine(a)	39(78%)	6(12%)	45(90%)
Smoking	41(82%)	-	41(82%)
Family h/o IHD at young age	7(14%)	-	7(14%)
Obesity	15(30%)	3(6%)	18(36%)
Elevated Suric acid	13(26%)	5(10%)	18(36%)
Tobacco chewing	14(28%)	-	14(28%)
History of HTN	1(2%)	1(2%)	2(4%)
History of DM-II	1(2%)	-	1(2%)
Previous h/o IHD	1(2%)	-	1(2%)

All 50 of our patients had hyperhomocysteinemia with mean value of 4514 +/- 1236 ranging between 16 to 90 Second most common risk factor was elevated lipoprotine(a) level (90%) followed by smoking(82%), while p/h/o HTN, DM ,IHD were found in few patients only

All our patients who smoked, were heavy smokers (on an average 300 pack years of smoking)

All 6 female had dyslipidemia, hyperhomocysteinemia and 5 of them had hyper uricemia also

Obesity is an important risk factor for CAD, was present in 38% of the patients with mean value of BMI 4514+/-1237, ranging between 1654 TO 311

Total S Cholesterol>200mg% was found in 58% of patients (mean value 2061+/-192420) while SLDL>100mg% and SHDL<40mg% were present in 66% and 84% respectively

Table 5: Categorization of homocysteine level

Shomocysteine level(umol/L)	Male	Female	Total
Moderate(10-30)	3(6%)	-	3(6%)
Intermediate (31-100)	41(82%)	6(12%)	47(94%)
Severe(>100)	-	-	-

All 50 patients had hyperhomocystinemia (100%), majority of them were in intermediate class (94%), including all females

OUTCOME AND COMPLICATIONS

All patients were observed in hospital for a period of about 7 to 10 days immediate outcome in form of complication and /or death was recorded in all patients

Though majority of our patients had anterior wall MI which is considered to be having comparatively worse prognosis, immediate short term outcome in term of mortality and complication was found to be more or less uneventful in all but two patients in our study had Ventricular tachycardia which was reverted with treatment None of our patients died due to MI during Hospital stay and all of them had good uneventful recovery at the time of discharge

DISCUSSION

This is an observational study of clinical profile of 50 patients aged 40years or less admitted with diagnosis of acute MI

Incidence of young MI in our study duration from 22/10/2010 to 4/9/2012 was found to be 13% Klein et al noted that clinically manifested CAD in the young adult is relatively uncommon and, implied that these patients are atypical of the general population However, it must be noted, those patients who come to medical attention owing to symptomatic disease may well represent the tip of iceberg when considering manifested and sub clinical disease together ⁽²⁾ In this study MI in young was found to be more common in males (88%) with the M;F ratio of 71:1 Other studies of young MI, done by chun pong wong et al(96,6%), Al-khadra AH (90%) have also conclude that Mi in young is predominantly disease of men ^(3,4) This finding corroborates the fact that circulating ovarian hormones ie estrogen, progesterone and other physiological differences like presence of less amount free radicals in circulation due to periodic iron loss in menstruation dose have protective role against CAD

In our study Majority of patients (90%) were in the age of 31-40 years, with the mean age of 35 years

Majority of patients were found to be presented with typical ischemic chest pain in our study with an average duration of 4 hours Lija chen et al in their study conclude that younger patients with CAD commonly present with an ACS without history of angina ⁽⁵⁾ it has been reported that young patients had most of the time plaque rupture and acute coronary embolisation with less collaterals as compared to elder CAD patients , as DM, HTN ,Dyslipidemia and resultant atherosclerosis, would not to be there or if present, comparatively of lesser duration thus collateral vessels would not be opened This may results in sudden cardiac death rather than clinical presentation of recurrent angina culminating in to MI as in elderly patients This also might be the cause for less number of young patients coming to hospital and hence the Incidence

of 13% may be a false projection Further community based studies required like verbal autopsy to find out the cause of death may be complimentary to find out exact prevalence

Hyperhomocystenemia (100%), elevated lipoprotein (a) level and smoking (82%) are most common risk factors found in present study among 50 patients, 42(94%) of our patients had intermediate level of homocysteine, while study done by Naveed et al found that 583% patients had moderate and 416% had intermediate level of homocysteine This mismatching results might be due to small numbers (12) of patients in their study Very few of the patients had other risk factors like family h/o IHD, elevated uric acid, p/ h/o HTN, p/ h/o DM the findings are consistent with other studies However while chun pong wong found hypertension (285%) as second most common risk factor after smoking ⁽⁶⁾(3)

This study pointed that smoking and obesity are important and more prevalent risk factors and both are modifiable and preventable So there is need to increase awareness among young population, stressing on modifiable risk factors in form of healthy diet, exercise, cessation and avoidance of smoking and screening for risk factors in those at high risk at an early age rather than neglecting this as a disease of an old age

In this study , anterior wall MI(50%) was most frequent location of MI as notified by other researchers also AL khadra AH has reported heart failure and cardiogenic shock(46%) as complications in young MI patients, but in this study anterior wall MI was 923% ⁽⁴⁾ However, we observed neither fatal outcome nor any significant complication in any of our patients with anterior or inferior wall MI, despite the fact that anterior wall MI is associated with higher morbidity and mortality Further long term studies with more number of patients are required to conclude emphatically on the outcome and severity of MI in young patients, as it has been reported in many other studies that acute MI in young patients had substantially worst inhospital

outcome in form of complications like heart failure , serious ventricular ectopic activity and inhospital death While none of our patients had significant HF, as we observed that all our patients were in killip class I and II only

Morccetti et al concluded that survival after MI is influenced by multiple factors of which age stands out as major nonmodifiable predictor of long term prognosis, while prognosis is excellent in young MI survivors⁽⁷⁾

Chronic diseases like HTN, DM, Dyslipidaemia etc are not prevalent in young patients as elderly, because they will take longer time for atherosclerosis of coronary arteries But now because of obesity, they occurs at earlier age hence it is important to diagnose and treat these conditions at an early stage before they can lead to such devastating complications

Hyperhomocysteinemia and hyperuricemia are another important factors to be addressed earlier in life as simple measures like daily supplement of folic acid and increased amount of calcium and vitamin D3 in diet many help of to delay/prevent these two abnormalities and in turn CAD

SUMMARY AND CONCLUSION

- (1) Out of 384 patients admitted with acute MI during a period of 22/10/2010 to 04/09/2012, 50 were below the age of 40 years So the incidence in our setup is 13%
- (2) Young MI is more common in males (88%), with mean age of 35 years, as compared to females(12%)
- (3) Anterior wall MI (50%) is more common than inferior wall MI (34%), and 90% of patients were in killip class I suggesting less prevalence of HF and pulmonary edema in young patients

(4) Hyperhomocysteinemia (100%) is a leading risk factor in young MI patients followed by smoking (82%) and elevated lipoprotein (a) level (78%)

(5) Short term out come in all 50 patients were relatively uneventful, only 2 patients had ventricular tachycardia treated successfully Overall no mortality has been recorded during hospitalization

It is important not only to diagnose early and treat adequately, acute MI in young , it is also essential to identify, prevent and treat risk factor at primary and secondary level Patients with family history should especially be screened for risk factors and life style modification with restriction of smoking, tobacco, weight reduction, exercises, avoidance of stress and indulgence in healthy diet rather than junk food are the most important health educational advice required to be given to young and adolescent population rather than to reserve for elderly population However further long term comparative studies with more number of patients would definitely help to establish and extrapolate these findings to community at large

ABBREVIATIONS

ACS- ACUTE CORONARY SYNDROME

CAD-CORONARY ARTERY DISEASE

CHOL-CHOLESTEROL

CRP-C REACTIVE PROTEIN

CVD-CARDIO VASCULAR DISEASE

DM-DIABETES MALLITUS

ECG-ELECTROCARDIOGRAM

HF-HEART FAILUR

HDL-HIGH DENSITY LIPOPROTEIN

HTN-HYPERTENSION

IHD-ISCHEMIC HEART DISEASE

JVP-JUGULAR VENOUS PRESSURE

LDL-LOW DENSITY LIPOPROTEIN

LP(a)-LIPOPROTEIN (a)

MI-MYOCARDIAL INFARCTION

OCPILLS-ORAL CONTRACEPTIVE PILLS

PAI-PLASMINOGEN ACTIVATOR INHIBITOR

SLE-SYSTEMIC LUPUS ERYTHMATOSUS

TG-TRIGLYCERIDE

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Original article

15

CLINICAL AND LABORATORY PROFILE OF PATIENTS WITH SUBCLINICAL HYPOTHYROIDISM

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INTRODUCTION:

Subclinical hypothyroidism is a biochemical diagnosis where TSH is elevated with a normal FT4 and normal FT3

It is associated with signs and symptoms of hypothyroidism like fatigue, weight loss, constipation, menstrual irregularity, depression etc It is also associated with comorbidities like DM, HTN It is also associated with dyslipidemia, pregnancy, infertility, etc

It can progress to overt hypothyroidism if not treated It should also be treated if TSH > 10, or there is presence of either dyslipidemia, pregnancy, goiter, infertility or signs and symptoms of hypothyroidism

There are controversies regarding the conditions in which it should be treated as no single guidelines are available

In this context, we aimed to evaluate the clinical and laboratory profile of patients with subclinical hypothyroidism

AIMS AND OBJECTIVES:

AIM and Objectives:

- 1 To study clinical and laboratory profile of patients with subclinical hypothyroidism
- 2 To assess the comorbid diseases associated with subclinical hypothyroidism
- 3 To find the age group and gender in which it is common
- 4 To find the comorbidities associated with it
- 5 The conditions in which sub clinical hypothyroidism should be treated

METHODOLOGY:

Inclusion criteria :

- 1 Patients with an elevated TSH level >42 with normal T4 level
- 2 Age > 14 years

Exclusion criteria:

- 1 Recovery from critical nonthyroidal illness
- 2 Previous radioiodine therapy
- 3 Thyroid surgery
- 4 External radiation therapy
- 5 Patients with thyroid disease taking medications for it
- 6 Patients not giving consent

Materials and Methods :

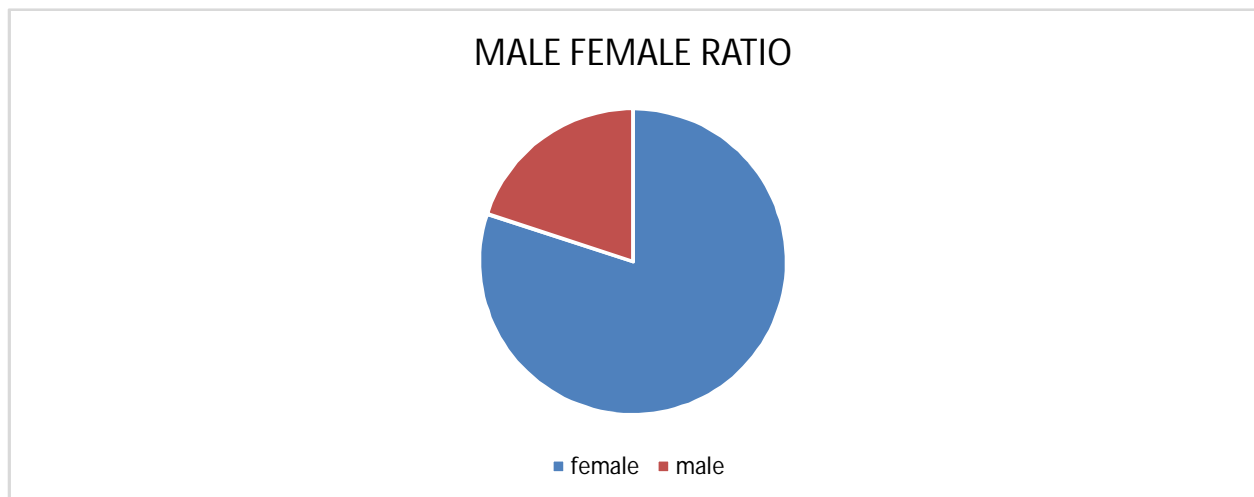
The current work represents single institutional observational prospective study carried out in Sheth L G General Hospital from 1st March 2018 to 30th June 2018 50 patients diagnosed as Subclinical hypothyroidism on

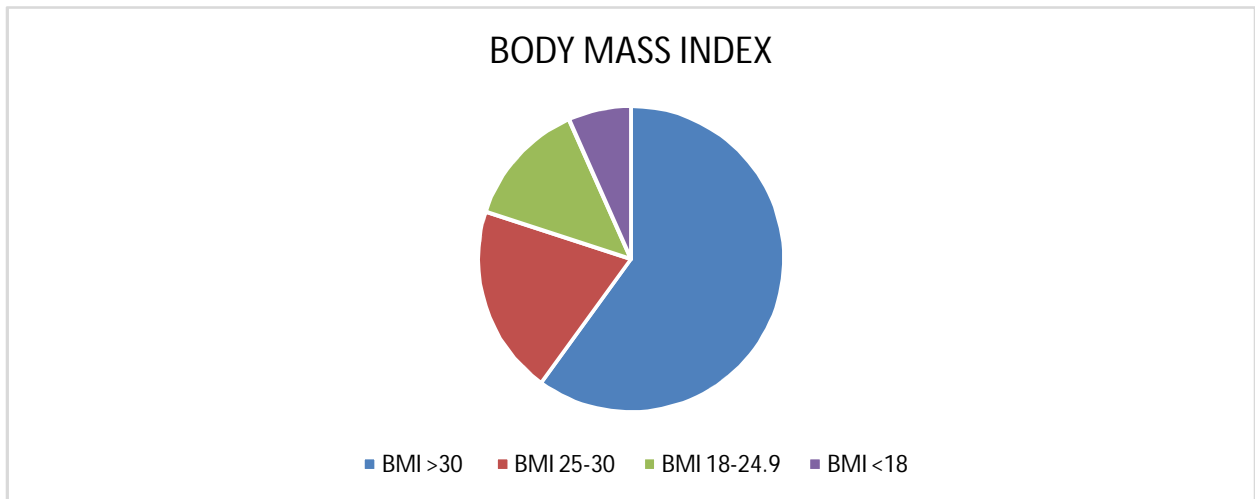
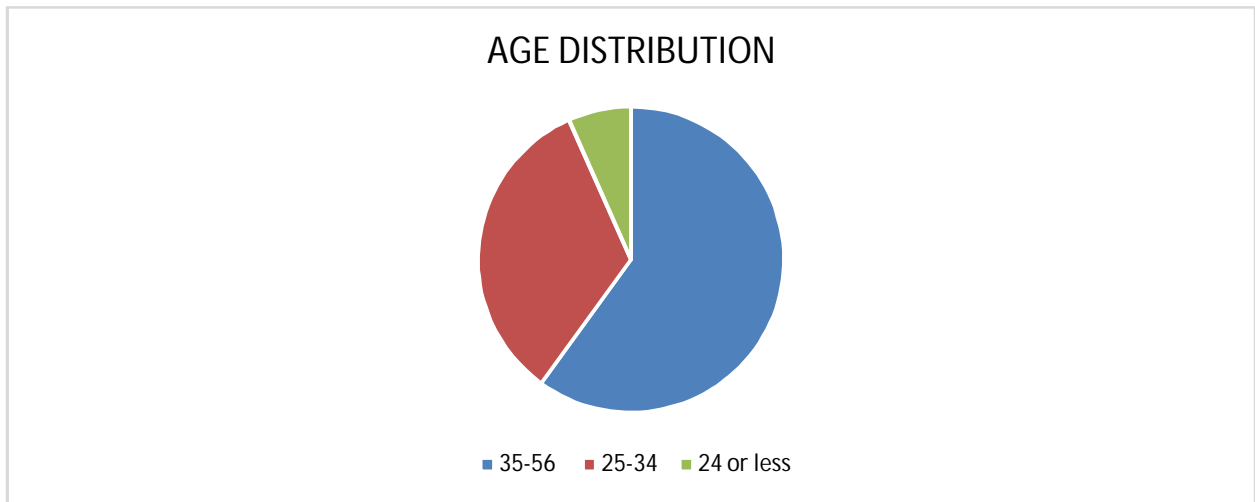
the basis of an elevated TSH with normal FT4 were included The comorbidities associated with it and the conditions in which it should be treated were studied Detailed history, examination and necessary investigations, calculation of body mass index (height and weight in appropriate standard units) were done and results were analysed

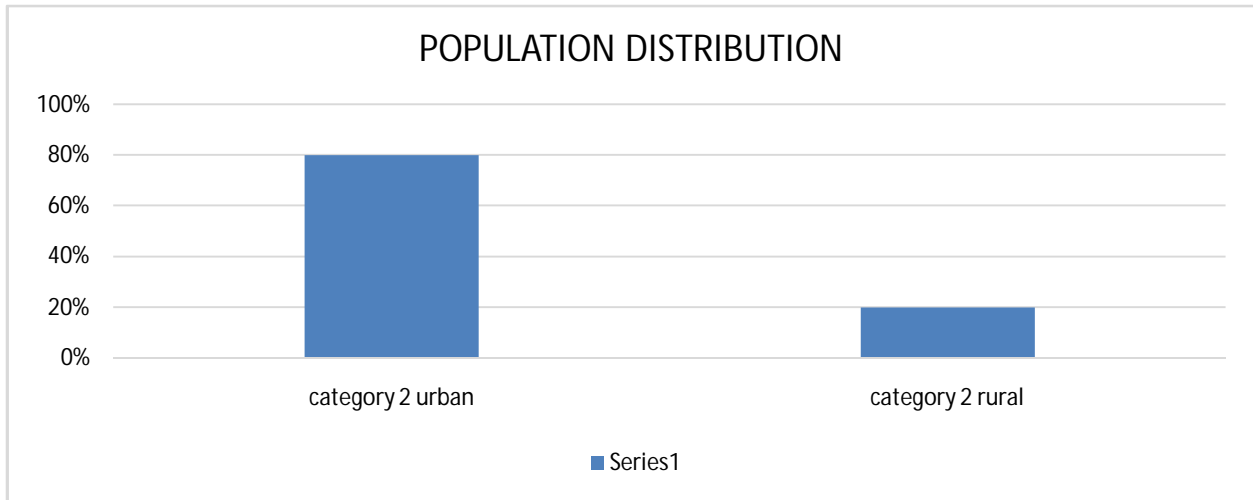
Results : In our study, the total population studied was 50 cases of subclinical hypothyroidism In our study, female population (40 cases) (80%) was dominant than male population (10 cases) (20%) The most common age group affected was 35-56yr – 30 (60%) cases, followed by 25-34

yr- 16 (32%) cases, and the least affected group was ≤ 24 yr – 4 (8%) cases[1] Tapper et al had evaluated thyroid function in the clinical laboratory which had similar results

- Urban population was predominant in our study constituting 43 (86%) of cases
- Maximum cases were under the category of overweight (BMI > 300) -30 (60%) followed by preobese (BMI 25 - 299) – 10 (20%) cases, followed by normal BMI (185- 249) -6 (12%) cases, followed by underweight (BMI <185) -4(8%) [2]
- In our study, 30(60%) cases had TSH ≤ 10 and remaining 20(40%) cases had TSH > 10
- In our study, goiter was present in 3 (6%) cases and the remaining 47 (94%) cases had no goiter[3]
- In our study, hypertension was present in 6 (12%) patients of total (50) cases and Diabetes Mellitus-2 was present in 12(24%) out of a total 50 cases
In our study, 4 (8%) females were pregnant out of a total of females[4]
- In our study, 2 (4%) females were infertile out of a total of 40 females
- In our study, 12 (24%) cases had dyslipidemia out of a total of 50 cases[5]
- In our study, fatigue was the most common symptom seen in 17 (34%) cases, followed by decreased appetite – 8 (16%) cases , followed by increased weight (weight gain) - 6 (12%) cases, followed by depression – 6 (12%) cases, followed by decreased bowel habit (constipation)- 4 (8%) cases, followed by menstrual irregularity – 4 (8%) cases, followed by cold intolerance – 3 (6%) cases 2 (4%) cases were asymptomatic[6]
- In our study, 37 (74%) cases were treated and 13(26%) cases were not treated

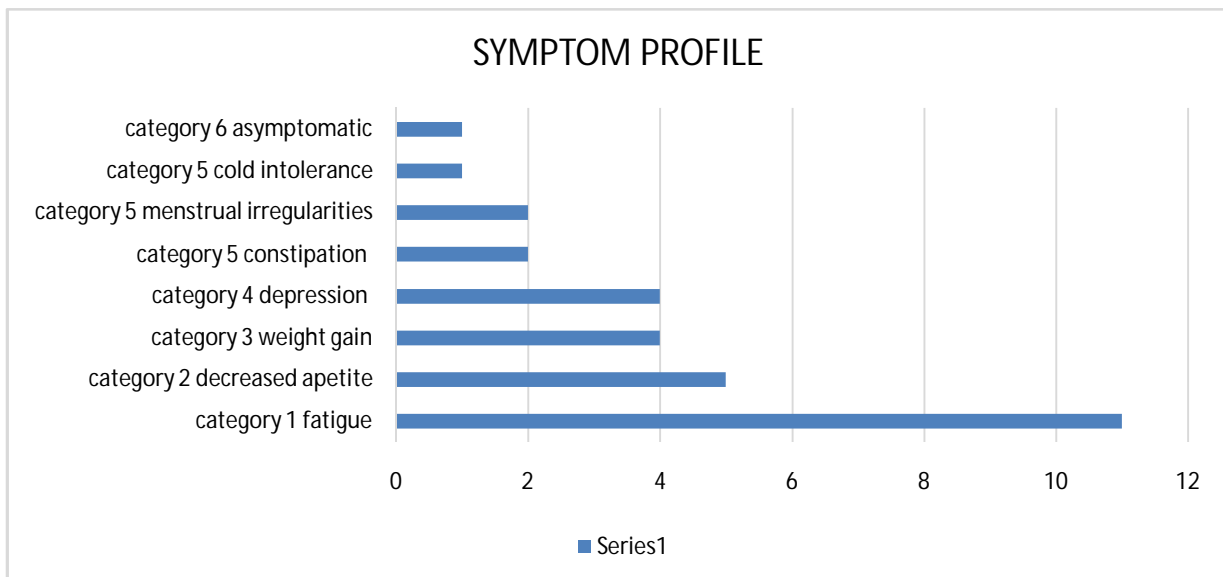






The following indications were treated :A) Pregnancy: B) Dyslipidemia: C) Goitre: D)TSH > 10 E)Symptomatic F)Infertility

In our study, there is no statistically significant difference of any symptoms between male and female. In our study we found a statistically significant relationship ($p < 0.05$) here it is 0.000, between TSH and Body Mass Index (BMI) ie TSH increased as BMI increased[7]



Conclusion :

Subclinical hypothyroidism (SCH) is a biochemical diagnosis with subtle symptoms, likely to be missed and it can progress to overt hypothyroidism, if not treated in time. It is also associated with conditions like dyslipidemia, pregnancy, infertility, goiter and some symptoms where it should be treated, as treating it will be beneficial[8]. Therefore, subclinical hypothyroidism is an entity which should be looked for carefully and treated as and when needed. However, the above results and interpretations are restricted to the small sample size of 50 patients that were included in this study. These results and interpretation may vary to certain extent when compared to a study which includes a bigger sample size.

Recommendations :

- 1 Subclinical hypothyroidism is a biochemical diagnosis with subtle signs and symptoms that can be missed and hence Subclinical Hypothyroidism should be actively sought for
- 2 Subclinical hypothyroidism is associated with infertility, dyslipidemia, goiter, pregnancy and signs and symptoms of hypothyroidism, where it should be treated. Subclinical hypothyroidism with TSH > 10 should be treated[9]. SCH when treated, can prevent its progression to overt hypothyroidism
- 3 More larger studies and a single guideline on the conditions which are associated with SCH and when it should be treated should be carried out for the Indian population

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Original article

16

REPRODUCTIVE TRACT INFECTION (RTIS) RESULTING IN TO GYNECOLOGICAL MORBIDITY

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Conflict of interest: Thesis of PhD

Title: Reproductive tract infection (RTIs) resulting in to Gynecological morbidity

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Abstract:

Background: Reproductive tract infection (RTIs); including Sexually transmitted disease and Non sexually transmitted disease are being increasingly recognized, as a serious public health problem RTIs causes suffering of both men and women, but their consequences are far more

divasting and wide spreads, among women Adolescent ignore the risk factor Women carry a heavy burden of reproductive morbidity

Method: To detect the incidence of microbiological infection, sexually transmitted infections ie Gonorrhoea, Bacterial vaginosis, Trichomonas and non sexually transmitted infections in women attending to tertiary care centre, Ahmadabad, from March 2005 to March 2006 Vaginal /cervical swabs were collected and microbiological investigation, including microscopy and culture sensitivity test were carried out from 120 females

Result: Vaginal discharge (100%) was most common symptom reported, followed by infections (366%), lower abdominal pain (275%) and other miscellaneous symptoms like, Genital itching, foul smelling, cervicitis, abortion, genital ulcer, tender cervix, tender PV and tender fornix were from 33 to 08%

In microbiological results of female's vaginal discharge, *Candida albicans* and other *Candida spp*(225%), *Staphylococcus aureus* (10%), *Escherichia coli* (333%), *Klebsiella spp*(4%) and *Proteus spp*(166%), *Aspergillous niger* (25%) *Trichomonas vaginalis* infection (25%), Bacterial vaginosis (20%) were found

Conclusion: In present study, infection of fungi, bacterial were commonly found, *Escherichia coli*, *Klebseilla spp* and *Proteus spp* identified with symptoms of burring maturation due to relation to urinary tract

Key words: Reproductive tract infections, Bacterial vaginosis

Introduction:

Within annual incidence of 340 million STI cases globally endogenous and iatrogenic infection of reproductive tract (RTI) are considered a global Public Health Issue^[1] In resource poor countries, 75-80 % of new cases of RTI occur RTI are among the five most common health problems leading to contact with health system^[1] RTI entail a heavy fall on women in untreated there can lead to pelvic inflammatory Disease(PID) which can cause long term sequel such as tubal infertility and Ectopic pregnancy^[2,3] Bacterial vaginosis, candidiasis & Trichomonas are responsible for majority of vaginal infection in women of reproductive age

Abnormal vaginal discharge, burning sensation, irritation & discomfort are frequent complains among a patients attending Obstetrics & Gynecology clinics However number of (Reproductive) Vaginal infection present with few or no symptoms^[4]

Candida vaginitis (CV) is one of the most frequent infections in women of reproductive age Approximately 75% of adult women will have at least one episode of vaginitis by *Candida spp* during their life time^[5-4]

Trichomonal vaginitis (TV) is the most common sexually transmitted disease^[6] It is caused by parasitic protozoa *T vaginalis* globally TV affects approximately 57-180 million people with majority living in developing countries^[7] However in most TV is asymptomatic in women TV effects more frequently between 20-40 years & is quite rare puberty & post-menopausal age^[6] The symptoms of TV are mainly characterized by vaginal discharge with gray or greenish-yellow fluid rather frothy, foul-smelling intense itching, edema cervix redness, the sensation of itching dyspareunia & post-coital bleeding, pelvic pin & urinary symptoms^[5,65]

Bacterial Vaginosis is the most common cause of abnormal vaginal discharge among women of reproductive age The prevalence of BV is about 30% in women of reproductive age BV is characterized by raised vaginal PH & milky discharge in which normal vaginal flora of aerobic and anaerobic organism like *Gardenerella vaginalis*, *Provatella spp*, *Mycoplasma hominis*, *Mobiluncus spp* Colonize predominantly in BV^[6,8] Gonococcal infection is the second

most common prevalent sexually transmitted bacterial infection causing substantial morbidity worldwide each year

Gonorrhoea is a potent amplifier of the spread of sexually transmitted human immune deficiency virus (HIV) ^[9]

Reproductive infection has been identified for a smaller proportion of women whose microbiota (Lactobacilli) is dominantly by facultative anaerobic or aerobic bacteria especially *Staphylococcus aureus*, Group B *Streptococci*, *E coli* & *Klebsiella spp* ^[6,8]

Various etiology of Reproductive tract infection results in number of Gynecological complication Therefore the purpose of this cross sectioned study was to determine the prevalence of common reproductive tract infection in reproductive age women attending at antenatal care & Gynecology clinics of tertiary care centre Ahmedabad

Material and method:

The present study, 120 females were examined for genital tract infections, at department of tertiary care centre Ahmedabad from March 2005 to March 2006A detail clinical history and followed, by Physical, abdominal and gynecological examinations were carried out, by Gynecologist

To detect RTIs, two samples of vaginal /cervical discharges were collected and process in department of microbiology One swab for wet film,(to detect, *T vaginalis*, yeast cells and clue cell), Gram stain, Giemsa stain (Chlamydal inclusion), ZN stain, KOH mount (fungal and whitt test) & India ink Second swab was collected in Stuart transport medium, for culture report Routine and special media were streaked for bacterial and fungal culture On second day, culture media were examined for specific growth & each colony were identified by Motility, Gram stain, KOH Preparation & Conformation of organism, various biochemical tests (Coagulase test, oxidase test , IMViC test, Sugar fermentation test, assimilation test) were carried out

Observations:

Total 120 females, suffering from various problems were examined, for microbial infection All females had history of vaginal discharge (100%), followed by infections (366%), lower abdominal pain (275%), genital itching (12%) Foul smelling, cervicitis, abortion, genital ulcer, tender cervix, Tender PV, Tender fornix was observed (from 33% to 08%) In generalized symptoms, burning maturation (316%) was the highest during examination Vomiting (25%), fever (16%) and giddiness, anorexia, pain in knee, dropping urine were also found (08% each) The most common type of discharge was curdy white discharge (333%), followed by homogenous white discharge (25%) & muco-purulent discharge (208%) Cervical erosions (125%), Green yellow frothy discharge (33%), cervicitis (33%) and strawberry vagina (166%) were found

Table: Various microbiological infection (Microbiological culture report)

	No	Percentage
No growth	37	308%
Bacterial Vaginosis	24	20%
<i>Candida albicans & others</i>	27	225%
<i>Chlamydia</i>	3	25%
<i>Staphylococcus aureus</i>	12	10%
<i>Klebsiella spp</i>	5	4%
<i>Escherichia coli</i>	4	333%
<i>Proteus spp</i>	2	166%
<i>Aspergillous niger</i>	3	25%
<i>Trichomonas vaginalis</i>	3	25%
TOTAL	120	100%

Microbiological results show 225% *Candida albicans* and other *Candida spp* (*Candida albicans* (19%) germ tube positive, *Candida glabrata* (166%), *Candida tropicalis* (166%)) *Staphylococcus aureus* (10%), *Escherichia coli* (333%), *Klebsiella spp* (4%) and *Proteus spp* (166%), *Aspergillous niger* (25%) and *Trichomonas vaginalis* infection (25%), Bacterial vaginosis (20%), (on Nugent's score, based on gram stain vaginal smear) were found

Discussion:

Vaginal discharge & the lower abdominal pain were 275% where as other study, Gupta et al (2002), Howker et al (1999) & Ruchika Rajan et al (2003), reported 29% to 856% and 203% to 604% respectively Genital itching was comparatively low (12%) in percentage rate Only one female shows (08%) the genital ulcer correlates with Howker et al (1999) Amongst all the cases we had isolated *Candida albicans* (19%) and *Staphylococcus aureus* (10%) were correlate with Jindal N et al (2007) and Sobel J & Chaim W et al (1996) from 215% to 744% and Richard L Sweet(1985) (10%) respectively Rate of *Trichomonas vaginalis* (25%) microscopically correlate with other study (Madhivanan P, Krupp K et al (2008), Nessa K Waris et al (2004) and Nagaraja P et al (2008) (15% to 82%))In case of Chlamydia only Giemsa stain for inclusion body was carried out, no conformation test was carried out

Conclusion:

The rate of microbiological infection, including Sexually Transmitted Diseases and Non Sexual Transmitted Disease, in this population was as under:
The Vaginal discharge was predominant presenting symptom, followed by abdominal pains with sings of curdy white discharge, homogenous white discharge and green yellow discharge Amongst the organisms *Candida species* were most common followed by Gram positive cocci, *Staphylococcus spp*, Gram negative bacilli *Enterobacter spp*, Fungus *Aspergillous spp* and *Trichomonas spp*

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Original article

17

ETIOLOGY OF VISUAL IMPAIRMENT AND BLINDNESS AND DEMOGRAPHIC PROFILE OF AFFECTED INDIVIDUALS

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Key words: visual impairment, blindness, cataract

Abstract**Background:**

Eye diseases and low vision are the most significant health and socioeconomic risks in developing countries like India Globally, 253 million people are visually impaired, of these 36 million are blind and 217 million have moderate to severe visual impairment With population growth and increasing life expectancy, the magnitude of blindness is expected to increase further

Objectives: To study the demographic profile of individuals with visual impairment and blindness and its causes in adults aged 50 years and above in a district of Central India

Material and methods: Cluster sampling was employed from November 2015 to November 2017 to randomly select 3000 individuals aged 50 years or more in 30 clusters from a district of Central India Demographic details of individuals were noted Visual assessment was done using ETDRS chart in full day light Ophthalmic examination was done to detect the cause of visual impairment and blindness

Result and discussion: Mean age of study population was 623 ± 79 years There were 489% males and 511% females Visual impairment was seen in 174% individuals and blindness was noted in 35% individuals Cataract was the cause of visual impairment in 1857%, uncorrected refractive error in 417%, posterior segment disorders in 184% and glaucoma in 140% individuals

Conclusion: Visual impairment contributes to a significant health problem in rural population in Central India Cataract was found to be the principal cause of visual impairment followed by uncorrected refractive error, posterior segment disorders and glaucoma

Introduction:

Eye diseases and low vision are the most significant health and socioeconomic risks in developing countries like India Globally, 253 million people are visually impaired, of these 36 million are blind and 217 million have moderate to severe visual impairment (VI)¹ With population growth and increasing life expectancy, the magnitude of blindness is expected to increase further²

Avoidable causes that can be either prevented or corrected easily amounts to almost 80% of the load of blindness³ Adults aged more than 50 years contributes the maximum load of visual impairment (81%)¹

The present study provides information regarding demographic profile of individuals with visual impairment and blindness and its causes in adults aged 50 years and above

Aims and Objectives:

- To study the demographic profile of individuals with visual impairment and blindness in adults aged 50 years and above
- To determine the causes of visual impairment and blindness in adults aged 50 years and above

Material and methods:

A population based survey was carried out in the district to study demographic profile and causes of visual impairment and blindness in individuals aged ≥ 50 years

For determining the sample size estimated prevalence of avoidable blindness among 50+ was taken to be 80% (Murthy et al, 2005) Among the statistical criteria 80% power, 20% relative precision, 95% confidence interval and design effect of two for clustering effect were considered Based on the criteria, sample size came out to be 2500 and 3000 individual aged 50+, were taken as survey population

Stratification of population of the District in to rural and urban strata was done Stratified Cluster Sampling was adopted to select 30 clusters (22 rural and 8 urban) depending upon their total population

Survey Methodology: The team performed door to door enumeration and examination of 100 people aged ≥ 50 years, in each cluster A standardized survey record was filled in for each eligible person

Visual assessment: Presenting distance visual acuity (with or without available glasses) was tested separately for each eye using an ETDRS chart cut out with "E" optotypes The 'E's on one side correspond to 6/60 equivalent of Snellen's chart while the 'E's on the reverse correspond to 6/18 on the Snellen's chart at 4-m distance This was done in full day light in courtyard or on the street Participants who read the largest letter (confirms VA 6/60) were then shown the other side of chart showing small size letter E (VA 6/18), those who read small size letter E, their visual acuity was recorded as 6/18 or better for each eye Participants failing to read the largest letter at 4m were retested at 2-m and visual acuity was recorded as 3/60 When necessary, testing included the ability to count fingers, to detect hand movements, or to perceive light Participants were

deemed to have sufficient visual acuity to read a particular line if a minimum of four of five letters in a line was identified correctly

Participants who could not read 6 / 18 from either eye had their visual acuity checked again with pin hole and improvement if any was recorded for each eye separately

Anterior segment and fundus examination: The lens status was assessed by torch light examination All individuals with VA < 6/18 in either eye were examined at clinics set up in the village In the clinic basic eye examination consisted of:

- Reconfirmation of visual acuity
- Torch light Examination
- Fundus Examination was done with Direct Ophthalmoscope after dilating the pupil with mydriatic eye drops
- Intraocular pressure was recorded by Applanation Tonometer
- In patients with hazy media B-Scan Ultrasonography was done (as and when required)
- Ocular disorders present were recorded for each eye separately in individuals with presenting vision < 6/18 in either eye
- Main cause of blindness for each eye and individual was recorded separately in all participants with presenting vision < 6/18 in either eye

Ocular findings were recorded on pre-tested proforma

Data was entered and analyzed using EPI INFO6 Software Programme with internal consistency check

Observations:**AGE AND SEX DISTRIBUTION (Table No I)**

- Mean age of study population was 623 ± 79 years (Range 50-92 years)
- Out of 3000 persons included in the study 1467 (489%) were males and 1533 (511%) were females
- Mean age of males was 628 ± 80 years (range 50-89 years) and for females it was 619 ± 78 years (range 50-92 years)
- In the study population majority of the persons (1458, 486%) were in the age group 60-69 years

Table No I : Sex and Age Distribution of the Survey Population

Age group (in years)	Male	Female	Total Number (%)
50-54	245 (434%) (167%)	320 (566%) (209%)	565 (188%)
55-59	197 (578%) (134%)	144 (422%) (94%)	341 (114%)
60-64	474 (447%) (323%)	587 (553%) (383%)	1061 (354%)
65-69	211 (531%) (144%)	186 (469%) (121%)	397 (132%)
70-74	202 (522%) (138%)	185 (478%) (121%)	387 (129%)
75-79	83 (550%) (57%)	68 (450%) (44%)	151 (50%)
≥ 80	55 (561%) (37%)	43 (439%) (28%)	98 (33%)
Total	1467(489%) (100%)	1533(511%) (100%)	3000 (100%)

VISUAL STATUS OF INDIVIDUALS (Table No II)

- Out of 3000 persons surveyed 2238 (746%) had normal / near normal vision
- Visual impairment was seen in 521 (174%) persons with vision of ($<6/18 - \geq 6/60$)
- Severe visual impairment (Visual acuity $<3/60$) was noted in 134 (45%) individuals
- Blindness was noted in 107 (35%) individuals including 12 (04%) who were suffering from absolute blindness (PL negative)

Table No II: Visual Status of Individuals

Visual Status (WHO) (Best Corrected Visual Acuity)	No of persons	Percentage
Near Normal ($\geq 6/18$)	2238	746
Visual Impairment ($<6/18 - \geq 6/60$)	521	174
Severe Visual Impairment ($<6/60 - \geq 3/60$)	134	45
Blindness ($<3/60 - PL +$)	95	31
Absolute Blindness PL Negative	12	04
Total	3000	100

VISUAL STATUS OF EYES (Table No III)

- Of the 6000 eyes of 3000 persons included in this survey 4249 (7081%) eyes had pinhole visual acuity normal/near normal, 907 (1512%) eyes had visual impairment
- Severe visual impairment was noted in 361 (602%) eyes & 483 (805%) eyes were blind which includes 86 (143%) eyes which were PL negative

Table No III: Visual Status of Eyes

Visual Status	Number of Eyes (%)
$\geq 6/18$	4249 (70.81)
$< 6/18 - \geq 6/60$	907 (15.12)
$< 6/60 - \geq 3/60$	361 (6.02)
$< 3/60 - PL +$	397 (6.62)
PL Negative	86 (1.43)
Total	6000

CAUSES OF BLINDNESS AND VISUAL IMPAIRMENT (Table No IV)

- Out of a total of 6000 eyes surveyed, 1751 (29.2%) had visual acuity $< 6/18$
- Cataract was noted to be the principal cause (1114, 18.57%) uncorrected refractive error were noted in 250 (4.17%) eyes 39 (0.65%) eyes had pthisis bulbi Glaucoma was noted in 84 (1.40%) eyes 88 (1.47%) eyes had other / undetermined causes
- Among 551 pseudophakic eyes 209(37.9%) had visual acuity $< 6/18$ due to uncorrected refractive error Glaucoma was noted in 26 (4.7%) of these eyes ARMD was noted in 15 (2.7%)

Table No IV: Causes of visual acuity <6/18 in survey population – Eyes

Cause	Total Eyes		Pseudophakic Eyes	
	Number (n=6000)	Percentage	Number (n=551)	Percentage
Cataract	1114	1857	-	-
Uncorrected Aphakia	41	068	-	-
Uncorrected refractive error	250	417	209	379
Pthisis Bulbi	39	065	-	-
Corneal Scar / Opacity / Ulcer	68	113		
Globe abnormalities	5	008	-	-
Glaucoma	84	140	26	47
Diabetic Retinopathy	09	015	03	05
Age Related Macular Degeneration	52	087	15	27
Others / Undetermined	88	147	22	40
Total	1751	2917	275	498

OTHER CAUSES OF ACUITY <6/18 IN SURVEY POPULATION – EYES (Table V)

- Out of 1751 eyes with vision <6/18 optic atrophy was noted in 27 (045%) eyes 12 (020%) eyes had macular scar High / pathological myopia was noted in 9 (015%) eyes
- Among 551 pseudophakic eyes among the other causes, vascular occlusion was present in 03(05%) of eyes, choreoretinal degeneration in 02(04%) eyes, high / pathological myopia in 02(04%) eyes, optic atrophy was noted in 11(20%)eyes & retinitis pigmentosa in 02(04%)of pseudophakic eyes

Table No V: Other causes of Pinhole Visual Acuity <6/18 in Survey Population – Eyes

Cause	Total Eyes (n=6000)		Pseudophakic Eyes (n=551)	
	Number	Percentage	Number	Percentage
Amblyopia	1	002	-	-
Vascular occlusion (BRVO)	3	005	03	05
Chorioretinal degeneration / Scar	7	012	02	04
Dislocated / Absorbed lens	1	002	-	-
Eviscerated Socket	2	003	-	-
Hypertensive Retinopathy	1	002	-	-
Gyrate atrophy	2	003	-	-
Heredomacular degeneration	2	003	-	-
High / Pathological Myopia	9	015	02	04
Macular Scar	12	020	02	04
Optic Atrophy	27	045	11	20
Retinal Detachment	4	007	-	-
Retinitis pigmentosa	8	013	02	04
Vitreous haemorrhage	1	002	-	-
Undetermined	8	013	-	-
Total	88	147	22	41

Discussion:

In 2015, it was estimated that 36 million people were blind (visual acuity worse than 3/60), 217 million had moderate or severe vision impairment (worse than 6/18 but 3/60 or better), and 188 million had mild vision impairment (worse than 6/12 but 6/18 or better)¹

Worldwide, chronic eye diseases are the main cause of vision loss. The two top causes of visual impairment are uncorrected refractive errors and then un-operated cataract. In low- and middle-income countries, un-operated cataract remains the leading cause of blindness¹

Estimates of magnitude and causes of blindness are the basis for appropriate eye health care planning, allocation of resources, and prioritization of research. In the present study demographic profile and causes of visual impairment in adults aged 50 years and above

A total of 3000 individuals were examined. The mean age of study population was 623 ± 79 years, with mean age of males being 628 ± 80 years and mean age of females being 619 ± 78 years. Majority of population studied was between 60-69 years. Similarly in a community based cross-sectional study, Malhotra S et al found the mean age of population studied was 629 ± 97 years with mean age of males to be 631 ± 99 years and mean age of females to be 629 ± 95 years⁴. Other studies also observed similar trends of increasing visual impairment and blindness with increase in age of individuals^{2,5-7}.

With reference to gender predisposition, in the present study it was observed that females more commonly suffered visual impairment and blindness than males. Most other studies also demonstrated that the prevalence of visual impairment and blindness was higher in females than males^{5,7,8}. Similar trends were observed in Pakistan,⁹ Sudan,¹⁰ Kuwait¹¹ and Qatar⁶. Whereas, no sex-specific difference was found in other studies^{12,13}.

The principal causes of blindness vary among different ethnic populations. In whites, age-related macular degeneration is the documented main cause of blindness whereas in blacks, glaucoma or cataract is the leading cause of blindness¹⁴. Although, in Asia, the principal causes of blindness is cataract¹⁵.

Our study also showed that the main cause of visual impairment and blindness was cataract contributing to 1857% cases. This matched the magnitude of visual impairment and blindness in other studies^{6,16}. The other causes of visual impairment in our study includes

uncorrected refractive error, posterior segment disorders and glaucoma. Similar trends were observed by other studies^{7,17-20}

In conclusion, cataract and uncorrected refractive error are the principal causes of visual impairment and blindness in individuals aged 50 years and above in the district of Central India. Hence, provision of good quality cataract surgical services and spectacles are required to tackle the problem of visual impairment and blindness.

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Conflict of Interest Disclosures: Nil

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Original article :**18****CYTO-HISTOPATHOLOGICAL CORRELATION OF BREAST LESIONS - A RETROSPECTIVE ANALYSIS OF 2 YEARS**

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KEYWORDS: Breast, Fibroadenoma, Carcinoma**Abstract:**

Introduction: Breast lesions are a common cause of morbidity and mortality in women; with breast carcinoma being most common female cancer worldwide, requiring prompt diagnosis. Fine needle aspiration cytology (FNAC) is a valuable diagnostic tool with high degree of accuracy.

Aims and objectives: To determine the accuracy of FNAC in diagnosis of palpable breast lumps. To correlate the cytological findings with histopathological examination of surgical specimens.

Methods: We conducted a retrospective study from January 2016 to December 2017. FNAC of breast lump was performed in 271 patients out of which 104 patients underwent subsequent histopathological examination. These 104 patients were considered as our study group. Cyto-histopathological correlation was done in 104 patients.

Results: The age range of 104 patients was 14-70 years. Mean age was 32 years \pm 15 years. 54 patients presented with lump in left breast, 46 patients in right breast and 4 with bilateral lumps. Out of 104 patients, 77 cases were benign, 24 were malignant and 3 were atypical/suspicious lesions on cytological examination. On histopathological examination, 77

cases were benign, 26 were malignant and 1 was atypical/suspicious Cyto-histological concurrence was 93.05% and 79.2% for Fibroadenoma and Infiltrating ductal carcinoma respectively Overall sensitivity of FNAC procedure was 94.17%, specificity 100% and accuracy 93.26%

Conclusion: We concluded that FNAC is a simple, reliable method for diagnosis of both benign and malignant lesions and can be used in the evaluation of breast lesions

Introduction:

Lesions of the breast are a common cause of morbidity and mortality in women. Carcinoma of breast is the most common female cancer in India and worldwide. The incidence of breast carcinoma has been steadily rising over the years and in the current scenario incidence of breast carcinoma in Indian women is more than cervical cancer¹. Hence the need for timely diagnosis and prompt treatment.

Fine needle aspiration cytology (FNAC) is a valuable tool for early diagnosis of breast lesions. Its advantages include rapid and accurate diagnosis, low cost, minimal or no morbidity and excellent acceptance by the patients. It is a simple, minimally invasive procedure and can be performed in out patient department (OPD). It is an important part of the time honored 'triple approach' which includes clinical breast examination and mammography and/or ultrasonography findings in addition to FNAC. This multi-disciplinary approach is used for pre-operative assessment of breast lesions and to decide the best treatment plan for the patient^{2,3}.

The present study was undertaken with following aims and objectives

1. To determine the accuracy of FNAC in diagnosis of palpable breast lumps

2. To correlate the cytological findings with histopathological examination of surgical biopsy, lumpectomy or mastectomy specimens

Materials and Methods:

This retrospective study was carried out in department of Pathology, Rajiv Gandhi Medical College and Chhatrapati Shivaji Maharaj Hospital, Kalwa for duration of 2 years from January 2016 to December 2017

FNAC was performed on 271 patients who presented with palpable breast lump in the out patient department Aspiration was carried out using 23G disposable needle and 10 ml disposable syringe The smears were wet-fixed in 95% ethyl alcohol and stained with Haematoxylin and Eosin (H&E) stain 104 patients underwent tru-cut biopsy, lumpectomy or mastectomy All surgical specimens were processed by routine histotechnical procedure and stained by H&E

All male patients, patients with inconclusive cytology, patients with inadequate biopsy and patients who underwent FNAC without subsequent histopathological examination were excluded from the study

Results:

In the present study, FNAC of breast lump was performed in 271 patients over a period of 2 years, out of which only 104 patients (384%) underwent subsequent biopsy, lumpectomy or mastectomy These 104 cases formed the study group for our study of cyto-histopathological correlation of various lesions of breast Some of the other patients were lost to follow up while some were referred to higher centers for further management

The age range for 104 patients was 14-70 years Mean age of patients was 32 years and it lies in the range of 32 ± 15 years at 95% of confidence interval The youngest patient (14 years)

was diagnosed as fibroadenoma and the oldest patient (70 years) was positive for malignancy on cytology

54 patients presented with lump in left breast, 46 patients with lump in right breast and 4 patients presented with bilateral lumps

On cytology, most common diagnosis was fibroadenoma, 72 cases (69 %), followed by malignancy, 24 cases (23 %) (Table I)(Figure I)

On histopathology, most common diagnosis was fibroadenoma, 68 cases (654%), followed by infiltrating duct carcinoma, 20 cases (192%) (Table II)(Figure II)

Table III shows cyto-histopathological of the breast lesions

2 cases each of granulomatous mastitis and fibrocystic disease on cytology were confirmed on histopathology (Figure IIIa & IIIb & IV)

Out of 72 cases of fibroadenoma, 67 were confirmed on histopathology, 1 case showed atypical ductal hyperplasia on histopathology, 2 were reported as phyllodes tumour and 1 each as intraductal papilloma and duct ectasia

Out of the 3 cases with atypical/ suspicious features on cytology, 1 was diagnosed as fibroadenoma on histopathology 2 other cases were infiltrating ductal carcinoma and mucinous carcinoma respectively (Figure V)

All 24 cases of malignancy on cytology were confirmed as malignant on histopathology

Discussion:

Breast lesions including carcinoma of breast most commonly present with a clinically palpable breast mass Martin and Ellis and Stewart, first used Fine Needle Aspiration Cytology in 1930 for the diagnosis of palpable breast lesions Since then it has been accepted as a valuable diagnostic method for evaluation of breast lesions⁴

In the present study, FNAC of breast lump was performed in 271 patients, out of which 104 cases underwent histopathological investigation and were considered as our study group

The age range of patients in our study was 14-70 years The incidence of benign lesions was more in 2nd to 4th decades of life while malignant lesions were seen in 4th to 7th decades The mean age of patients was 32 ± 15 years The mean age was slightly lower than the study undertaken by Shagufta et al & Koirala et al who found the mean age at 37.26 years and 36.2 years respectively⁵ This is because benign lesions were predominant in our study

In the present study, 54 cases (51.9%) presented with lump in left breast, 46 cases (44.2%) with lump in right breast and 4 cases (3.8%) presented with bilateral breast involvement Hussain MT have reported left and right breast involvement in 54% cases and 46% cases respectively, in their study⁶ In a study by Sushma Yalavarthi et al, most lesions were in left breast, 52.22%⁷ Our findings are similar to studies by these authors who also found left breast involvement more than right

In our study, on cytology, out of 104 cases, 72 cases (69 %) were fibroadenoma, 24 cases (23%) were malignant, 5 cases (5 %) were non-neoplastic and 3 cases (3 %) were atypical/suspicious lesions In the study by Varsha Pandey et al, benign lesions were 70.5%, malignant lesions were 27.9% and inflammatory 1.6%⁵ In study by Khanna R et al, 61.3% cases were benign and non-neoplastic and 38.7% were malignant⁸ Benign lesions were common in our study, similar to studies by Varsha Pandey et al and Khanna R et al

In our study, most common benign lesion diagnosed on cytology was fibroadenoma, 72 cases (69%) This is similar to findings by Varsha Pandey et al,⁵ Manju et al⁵ and Pinto et al⁹ who also reported fibroadenoma as the most common lesion Out of these 72 cases, smears from one case showed presence of microfilaria in a fibroadenoma which was confirmed on

subsequent histopathology (Figure VI a & VI b) This patient was 20 years female hailing from Sultanpur, Uttar Pradesh which is an endemic area for filariasis Mammary filariasis is not unknown, however microfilaria coexistent with benign neoplasm like fibroadenoma is an unusual association and extremely rare¹⁰ This was an incidental finding in our case

Fibroadenoma was confirmed histologically also in 67 / 72 cases, 2 others were reported as phyllodes tumour (Figure VII) and 1 each as intraductal papilloma, duct ectasia and fibroadenoma with atypical ductal hyperplasia

In Phyllodes tumour, significant epithelial proliferation can be present and occasionally only the epithelial component is represented in smears In our 2 cases probably these areas were sampled at FNAC as cytology smears from both the cases showed a predominance of epithelial component Cytological distinction between fibroadenoma and phyllodes tumour is predominantly based on assessment of cellularity of stromal fragments In both cases, our smears showed only occasional stromal fragments This is a diagnostic pitfall in phyllodes tumour^{4,11}

Cytology smears in one case of fibroadenoma which was diagnosed as papilloma on histology showed fibroadenoma like cohesive clusters Papillary fronds, singly scattered columnar cells, macrophages or apocrine cells associated with a benign papillary lesion were not seen even on review of the slides

In one case of fibroadenoma on cytology, histological diagnosis was duct ectasia Smears in this case were moderately cellular and showed many monolayered sheets and cohesive clusters of ductal cells with single bare nuclei Foam cells or inflammatory cells were not evident Cytology smears of duct ectasia are usually paucicellular Our findings are not consistent with the usual cytological features of duct ectasia

One case with cytological diagnosis of fibroadenoma showed ductal hyperplasia with nuclear atypia on histopathology which was not represented in cytology smears. The needle probably did not hit the hyperplastic ducts. This patient was advised close follow up.

Cyto-histological concurrence was present in 67 of the 72 cases of fibroadenoma (93.05%). In study by Pinto et al, cyto-histological correlation for fibroadenoma was 89.7%.

In literature it is mentioned that fibrocystic disease, papilloma, phyllodes tumour are grey zone lesions of breast, difficult to classify on FNAC¹². This is a limitation of FNAC.

In another case with histological diagnosis of duct ectasia, aspiration had yielded yellowish white fluid. Cytology smears showed eosinophilic proteinaceous material, occasional clusters of benign ductal cells and few cyst macrophages. Hence a diagnosis of cystic lesion was rendered.

In our study, 2 cases each of granulomatous mastitis and fibrocystic disease were confirmed on histopathology also.

Sensitivity and Specificity of FNAC in diagnosis of benign lesions was 92.2% and 100% respectively in the present study. This is comparable to studies by Manju Vala et al¹³ and O'Neil S et al¹⁴ who have reported 92% and 92.17% sensitivity for benign lesions respectively.

In our study, 3 cases were diagnosed as atypical / suspicious lesions on cytology. Biopsy was advised in all cases to rule out or confirm malignancy in view of nuclear atypia cytologically. Histological diagnosis was benign fibroadenoma in one case. In the remaining 2 cases biopsy and subsequent excision revealed infiltrating ductal carcinoma and mucinous carcinoma. Both cases were of low grade histology. We conclude that all hypercellular smears with nuclear atypia

falling short of malignancy should be followed up with biopsy to rule out or confirm malignancy so that further definite management can be planned

In our study, 24 cases were reported as positive for malignancy on cytology All were confirmed as malignant on histopathology Thus FNAC was 100 % sensitive in diagnosis of malignant lesions in our study Manju Vala et al,¹³ Zhang Qin et al,¹⁵ Tiwari et al¹⁶ have also reported 100 % sensitivity for diagnosis of malignant lesions in their studies of breast lesions

The most common malignant lesion on histopathology was infiltrating ductal carcinoma, not otherwise specified (IDC, NOS) (19 cases), followed by infiltrating lobular carcinoma (ILC) (3 cases) and 1 each of mucinous carcinoma and mixed IDC & ILC 2 cases of IDC, NOS also showed ductal carcinoma in situ component

Cyto-histological agreement for ductal carcinoma was present in 19 / 24 cases (79.2 %) There was lack of cyto-histological agreement in 5 cases which were reported as malignant on histopathology, however they were of non ductal type

In one case of ILC, histopathology sections revealed abundant extracellular mucin Cytology smears of the same case showed small uniform cells arranged in linear discohesive pattern with no apparent mucin In breast tumors, the presence of extracellular mucin is a feature of ductal tumour ILC with extracellular mucin is a rare variant, found in our reporting

2 cases of ILC were of the pleomorphic variant Cytology smears of these were reviewed and showed clusters and sheets of medium to large cells with nuclear pleomorphism and eosinophilic cytoplasm Indian file arrangement of cells was not seen

It is not always possible to distinguish between lobular and ductal carcinoma on cytology as some ductal carcinomas of low grade histology show small relatively uniform tumour cells as

in ILC Conversely cells of lobular carcinoma of the pleomorphic type or alveolar type are larger with larger nuclei as seen in ductal carcinoma NOS¹¹

Histological sections of mucinous carcinoma showed lakes of mucin with nests of tumour cells floating in it Cytology smears in this case showed only few cells with vacuolated cytoplasm but with no apparent mucinous background

In the present study, overall statistical analysis revealed a sensitivity of 94.17 %, specificity of 100 % and accuracy of 93.26 % in diagnosis of breast lesions In literature it is mentioned that sensitivity falls in the range of 72% to 99% and specificity may be upto 100%^{4,17} Our results are thus comparable to studies by other authors

We have also reported very rare cases like association of microfilaria with fibroadenoma on cytology which was confirmed on histopathology and a case of ILC with abundant extracellular mucin on histopathology

Conclusion:

We conclude that FNAC is a reliable method for diagnosis of both benign and malignant breast lesions with a high degree of correlation with histopathologic findings It helps to take decision about patient management pre-operatively and unnecessary surgical intervention can be avoided in certain cases

In cases where cytological diagnosis is not very clear, preoperative diagnosis can be aided with surgical biopsy and correlation with ultrasonography and/or mammography findings and clinical examination

We conclude that FNAC can be used reliably as a routine preliminary diagnostic procedure for evaluation of breast lesions

Conflicts of interest: None

Acknowledgements:

We gratefully acknowledge Mrs Vrushali Kulkarni, Lecturer, Community Medicine Department of our institute for her statistical analysis

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Tables:**Table I: Cytological diagnosis of breast lesions (104 cases)**

Category	Diagnosis	Number of cases	Percentage (%)
Benign (Neoplastic and Non-neoplastic)	Fibroadenoma	72	69
	Fibrocystic ds	02	05
	Granulomatous mastitis	02	
	Cyst	01	
Atypical / Suspicious		03	03
Malignant		24	23

Table II: Histopathological diagnosis of breast lesions (104 cases)

Category	Diagnosis	Number of cases	Percentage (%)
Benign (Neoplastic and Non-	Fibroadenoma	68	
	Phyllodes tumour	02	

neoplastic)	Intraductal papilloma	01	68
	Fibrocystic ds	02	06
	Granulomatous mastitis	02	
	Duct ectasia	02	
Atypical / Suspicious	Fibroadenoma with atypical ductal hyperplasia	01	01
Malignant	Infiltrating ductal carcinoma, Not otherwise specified (IDC, NOS)	20	25
	Infiltrating lobular carcinoma	03	
	Mucinous carcinoma	02	
	Mixed IDC & ILC	01	

Table III: Cyto-histological correlation (104 cases)

CYTOLOGICAL DIAGNOSIS							
	FA	Fibrocy- stic disease	Granulom- atous mastitis	Cyst	Atypical/ suspicious	Malignant	Number of cases (HP)

H I S T O L O G I C A L D I A G N O S I S	FA	67	-	-	-	01	-	68
	Phyllodes tumour	02	-	-	-	-	-	02
	Intraductal papilloma	01	-	-	-	-	-	01
	Fibrocystic disease	-	02	-	-	-	-	02
	Granulomatous mastitis	-	-	02	-	-	-	02
	Duct ectasia	01	-	-	01	-	-	02
	FA with ADH	01	-	-	-	-	-	01
	IDC	-	-	-	-	01	19	20
	ILC	-	-	-	-	-	03	03
	Mucinous carcinoma	-	-	-	-	01	01	02
Mixed IDC and ILC	-	-	-	-	-	01	01	
Number of	72	02	02	01	03	24	104	

cases (FNAC)							
<p>FA: Fibroadenoma, ADH: Atypical ductal hyperplasia, IDC: Infiltrating ductal carcinoma, ILC: Infiltrating lobular carcinoma, FNAC: Fine needle aspiration cytology, HP: Histopathology</p>							

Figures:

Figure I: Sector diagram for cytology cases

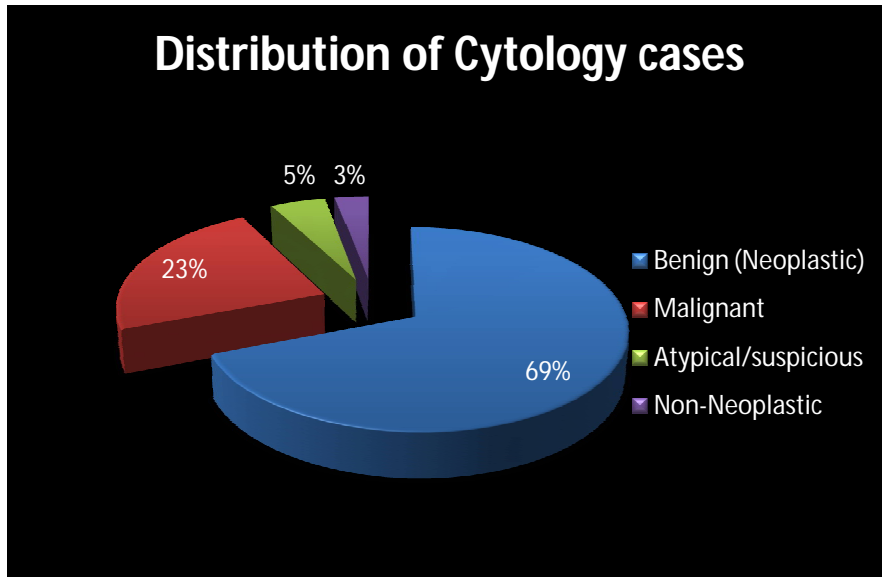


Figure II: Pie diagram for distribution of Histology cases

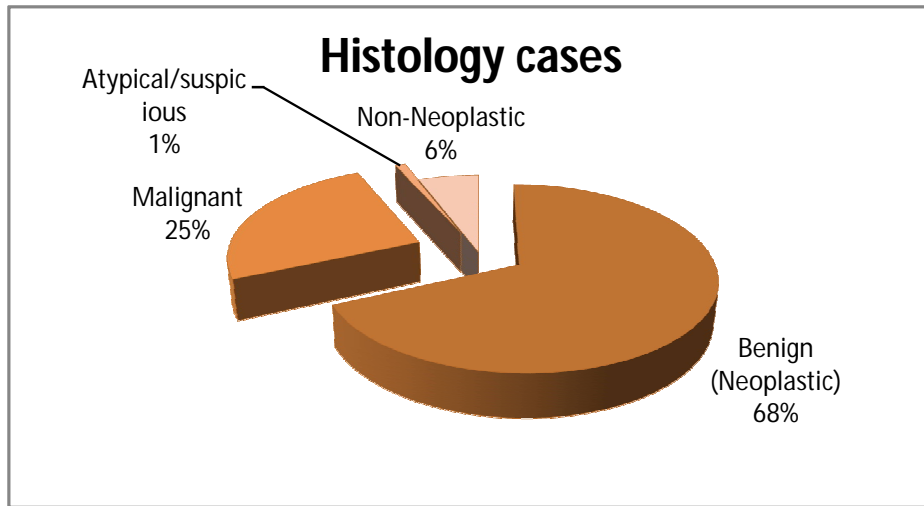


Figure IIIa: Granulomatous mastitis (Cyto: H & E 10X & 40X)

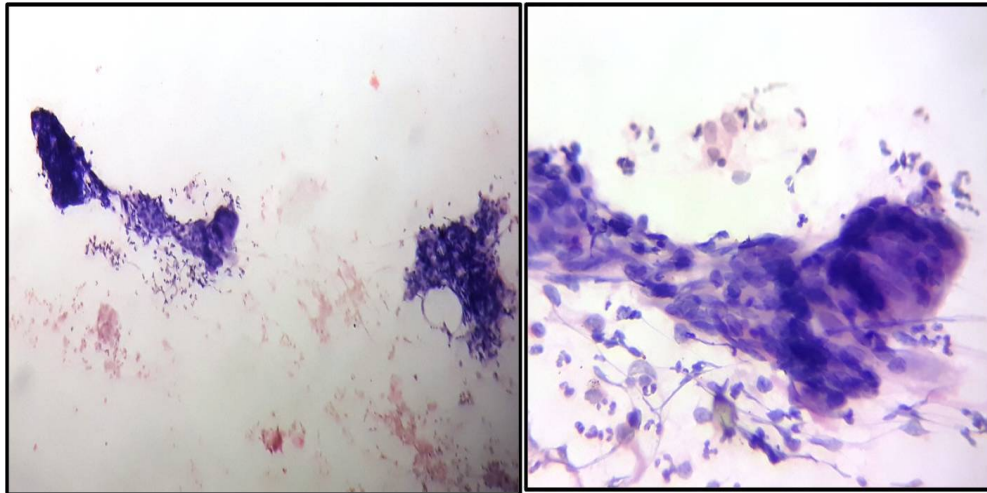


Figure IIIb: Granulomatous mastitis (Histo: H & E 4X & 10X)

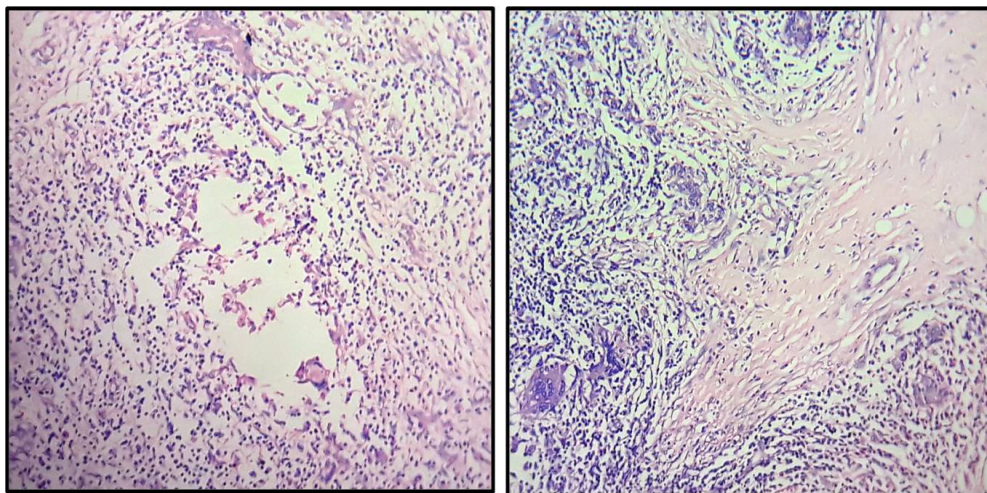


Figure IV: Fibrocystic disease (Histo: H & E 4X &10X)

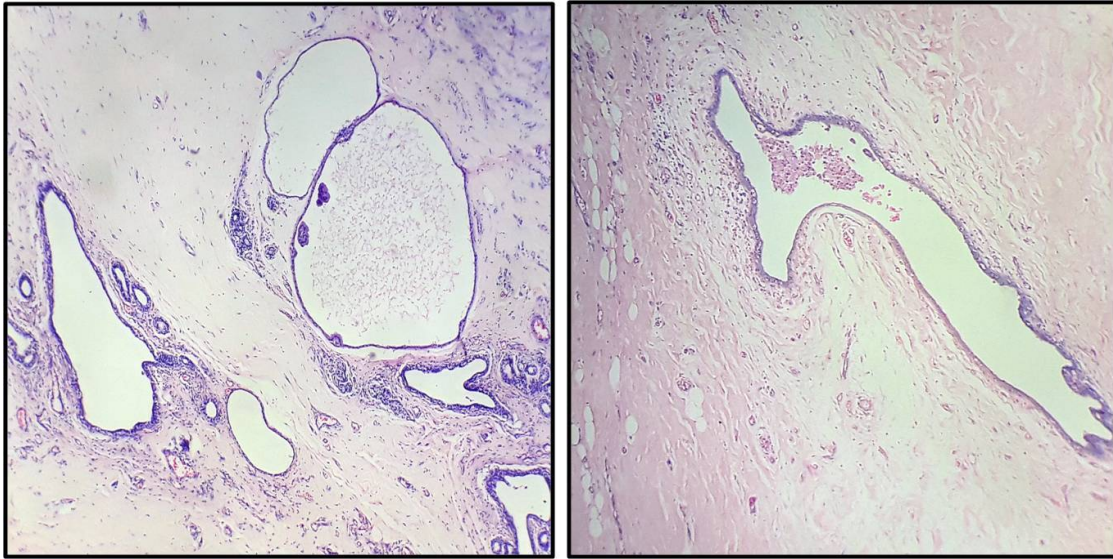


Figure V: Mucinous carcinoma (Histo: H & E 4X)

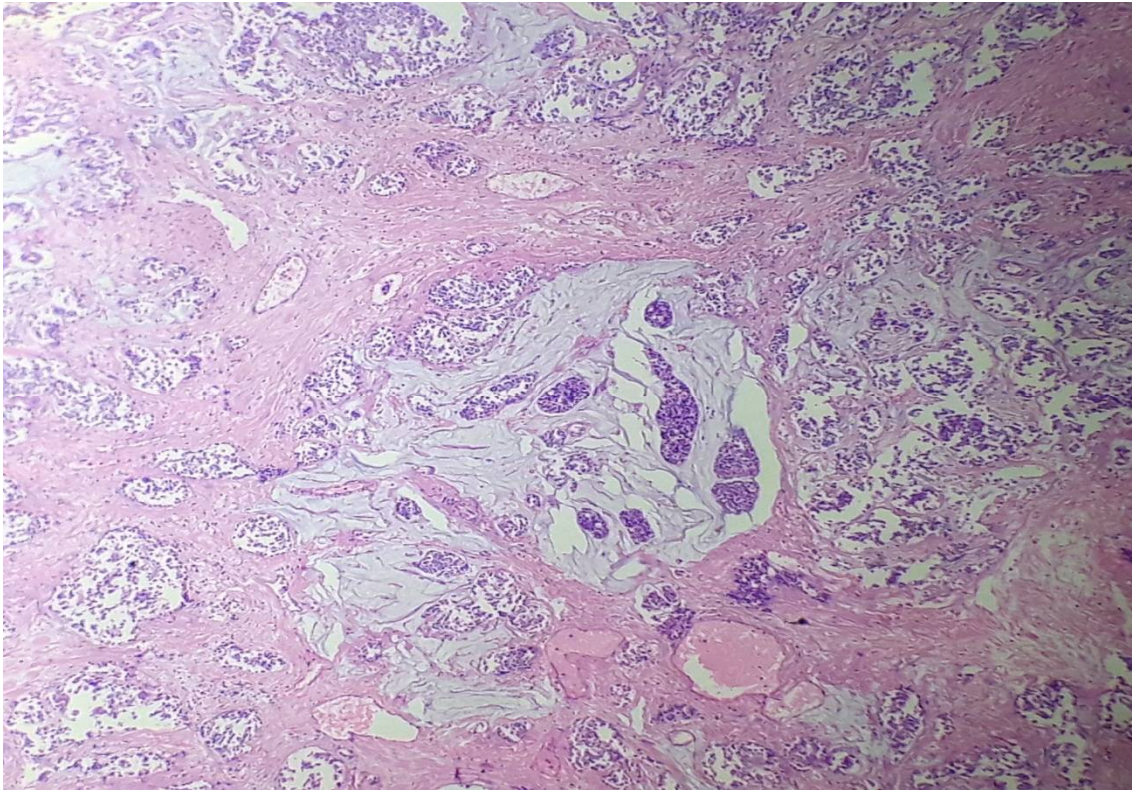


Figure VIa: Fibroadenoma with microfilaria (Cyto: H & E 10X & 40X)

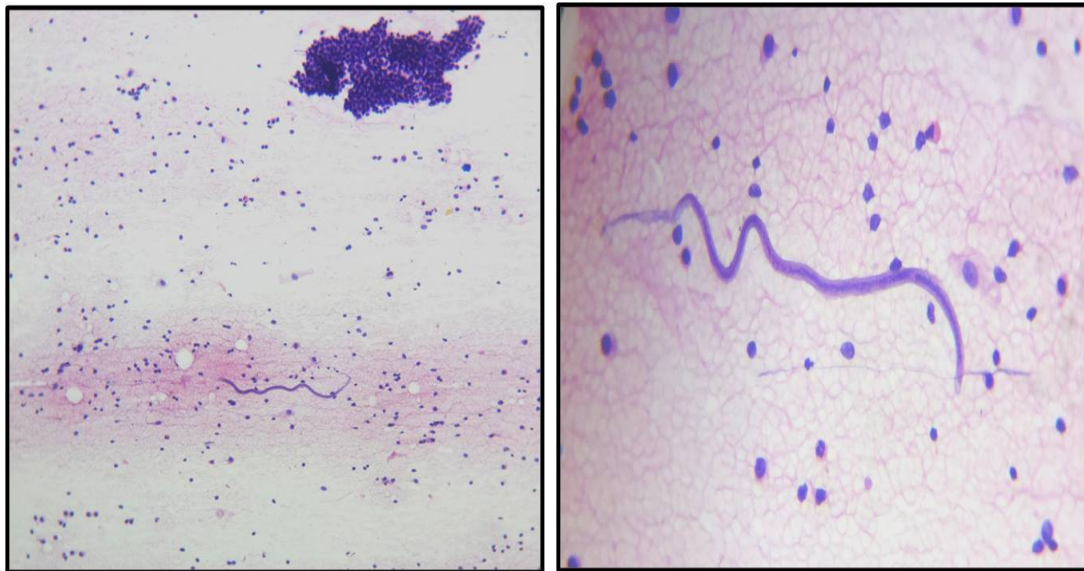


Figure VIb: Fibroadenoma with microfilaria (Histo: H & E 40X)

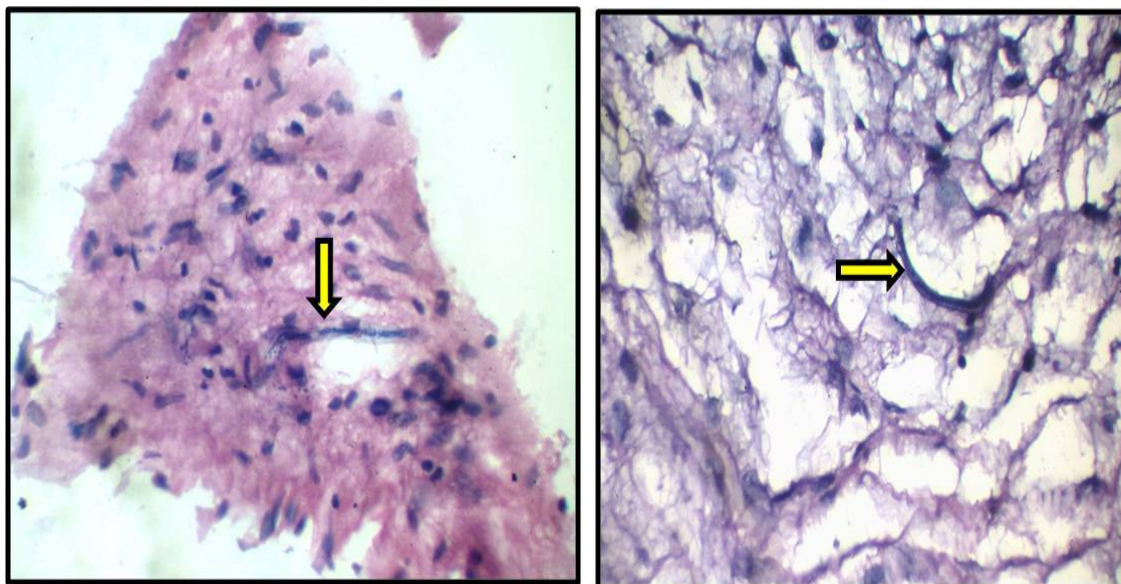


Figure VII: Phyllodes tumour (Histo: H & E 10X)

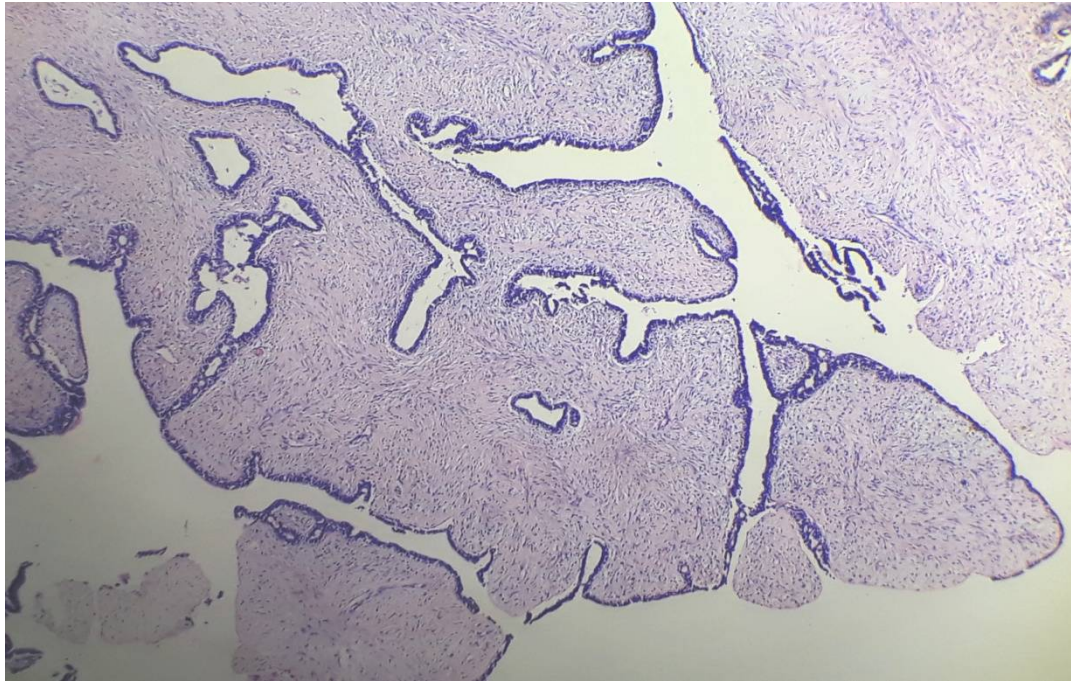


Figure VIIIa: Invasive lobular carcinoma with extracellular mucin (Histo: H & E 10X)

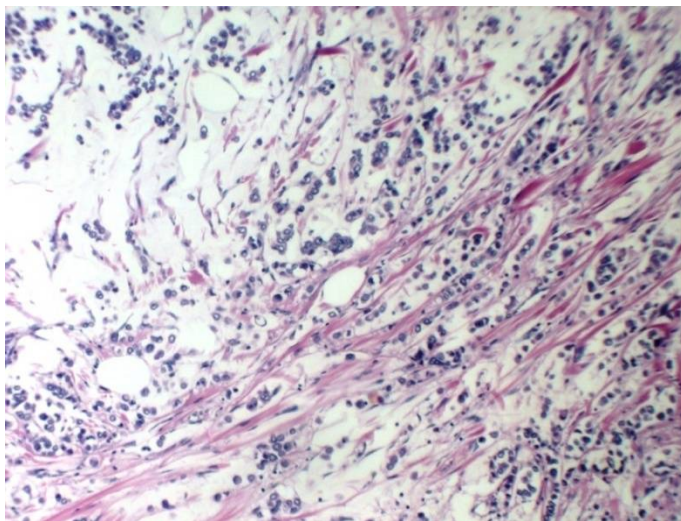


Figure VIIIb: Invasive lobular carcinoma with extracellular mucin (Histo: H & E 40 X)

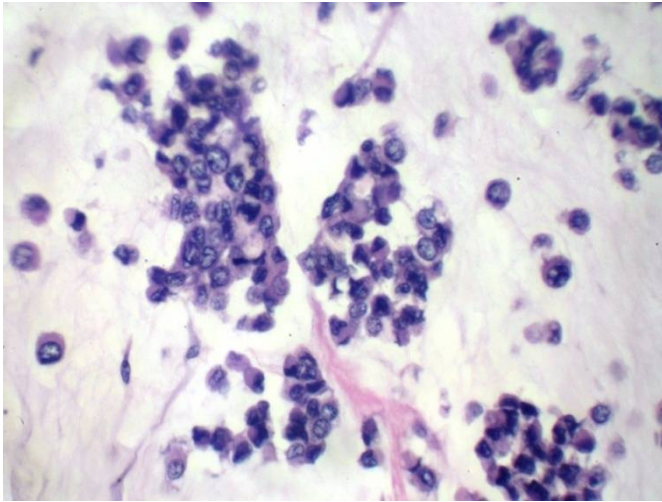
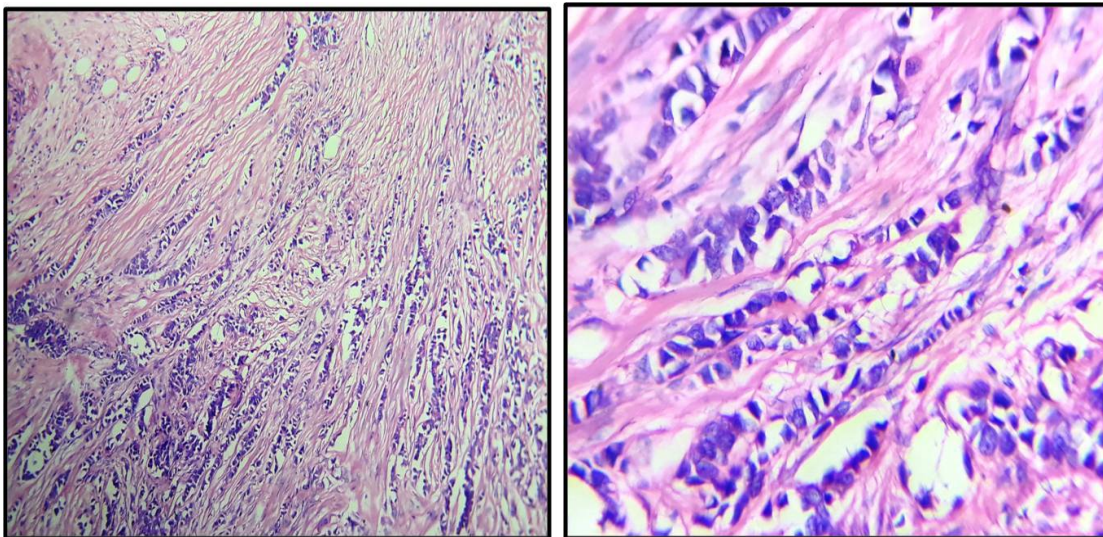


Figure IX: Invasive lobular carcinoma -pleomorphic variant (Histo: H & E 10X &40X)



Original article

Original article

19

A COMPARTIVE STUDY OF USG AND CT SCAN EVALUATION OF PATIENT OF ACUTE AND CHRONIC PANCREATITIS

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ABSTRACT

Background: Pancreatitis is a condition of inflammation of pancreas with high rate of morbidity and mortality USG is useful in the initial radiological assessment of the pancreas, extent of involvement and to evaluate other abdominal organs affected by it CT scan provides a cross-sectional anatomy of the organ, its internal structure, focal or diffuse involvement and involvement of adjacent structures This study is done to evaluate the role of USG and CT scan in patients of pancreatitis admitted to LG hospital,AMC MET medical college,ahmedabad, Gujarat, India Aim was to understand the role of CT and USG in determination of diagnosis of pancreatitis and to highlight and evaluate the cases in which USG failed to diagnose the cases which were helped through by CT

Methods: This study was done in department of radio diagnosis at LG hospital, AMC MET medical college, Ahmedabad, Gujarat, India, over a period from may 2018 to september 2018 Each patient was studied taking into consideration relevant clinical and laboratory reports USG of patients was done using LOQIC P5 machine CT scan was done using PHILIPS 16 Slice CT scan machine

Results: Advantages of Ultrasound are non-invasiveness, lack of radiation hazard and by ability to demonstrate structural changes in organ is first investigation of choice in pancreatitis However,limitations of USG are fails imaging in conditions with excess of bowel gas or fatty patient Detailed characterization of the inflammatory process and peroper extent of necrosis of the gland is not properly evaluated by USG CT is superior to ultrasound for precise detection of size, parenchymal involvement, main pancreatic duct, calcification, pseudocyst, ascites, pleural effusion, necrosis and peri pancreatic region and hence helps to determine exact extent of inflammation of the organ, multi-system involvement and prognosis

Conclusions: Ultrasound by non-invasiveness, easy availability, cost parameters, lack of radiation hazard and by ability to demonstrate structural changes in organ is first investigation of choice in pancreatitis However, ultrasonography lacks in detailed characterization of the extent of involvement of the organ and adjacent structures CT is superior to ultrasound for precise

detection and extension of the pancreatitis and it has better sensitivity and specificity than ultrasonography

Keywords: CT Scan, Necrosis, Pancreatitis, Pseudocyst, USG

INTRODUCTION

Pancreas is a soft, lobulated and elongated retroperitoneal organ. It lies transversely over the posterior abdominal wall, at the level of vertebrae L1 and L2. The entire organ lies posterior to the stomach, separated from it by the lesser sac. It lies anterior to the inferior vena cava, aorta, splenic vein and left adrenal gland. Pancreas is located in anterior pararenal space of the retroperitoneum, just anterior to peri renal fascia (Gerota fascia) and posterior to parietal peritoneum^[1]

Pancreatitis especially in its acute form is a common disease with potentially serious morbidities and mortality. Multiple imaging modalities play an important role in the evaluation of the disease process and its associated complications. Understanding the pathogenesis of this disease, indications for imaging, modality and imaging protocol selection, staging systems, and the merits and demerits of various modalities can help in the patient care.

Acute pancreatitis is defined as an acute, mainly diffuse, process of the pancreas that exhibits great variation in the degree of involvement of the gland, the adjacent retroperitoneal tissues and other remote organ systems. Gallstones and alcohol abuse are the most common causes of acute pancreatitis.

Chronic pancreatitis is a syndrome of destructive inflammatory condition arising from long-standing pancreatic injury^[2]. According to the Marseilles classification it is defined as a continuing inflammatory disease of the pancreas characterized by irreversible morphological damage typically causing pain and/or permanent loss of function^[3].

The Revised Atlanta classification of acute pancreatitis is an international multidisciplinary classification of the severity of acute pancreatitis, updating the 1992 Atlanta classification. It was initially revised in 2012 and then further updated in 2016^[4].

The worldwide consensus aims for an internationally agreed-upon classification of acute pancreatitis severity, with standardised terminology for pancreatitis and its complications.

Classification

The classification system is based on both local and systemic determinants of severity, with:

- local determinants related to the presence or absence of
 - (peri)pancreatic necrosis
 - sterile or infected
- systemic determinants related to presence or absence of
 - organ failure
 - transient or persistent

The grade of severity (mild, moderate, severe, and critical) is based on combinations of these determinants

Furthermore, a discrimination was made between two clinical phases of pancreatitis:

- **early** (1st week): in which severity is based on the presence or absence of systemic organ failure
- **late** (>1st week): in which severity is based on the presence of local complication or persistent systemic organ failure

Radiographic features^[5,6]

USG is used in the diagnosis and assessment of imaging of organs and soft tissue structures. Because of its non-invasive nature and continuing improvements in imaging quality, ultrasound imaging has a key role in assessing pancreas. It can diagnose pancreatitis in initial stage and exclude other causes of abdominal pain. With increasing operator experience and advances in technology, USG can evaluate pancreatitis in majority of cases.

MDCT (multi detector CT) has multiple detector rows and is faster with slice thickness of 05 mm and improved spatial resolution and 3D reformatting to delineate anatomy clearly. It permits arterial, pancreatic and portal venous phase and contrast uses iodinated medium.

METHODS

This study was done in department of radio diagnosis, LG hospital, ahmedabad, Gujarat, India, after taking permission from institutional review board, human ethics committee, ahmedabad, Gujarat, India. Patients were examined using Ultrasound and CT scan as imaging modalities after obtaining consent for the same. Patient with relevant clinical history were examined. Serum amylase, serum lipase were correlated with the imaging findings as and when required.

Equipment

- USG machine: LOGIQ P5
- CT scan machine: 16 slice PHILIPS

Inclusion criteria

- Referred to our department with complain of abdominal pain and suspected diagnosis of pancreatitis
- Already diagnosed case of pancreatitis referred to Radiology department

Exclusion criteria

- Patients refusing consent to participate in the study
- Pregnant females

- Elevated serum creatinine levels (>15 mg/dl)

RESULT

The present study was carried out at department of radio diagnosis, LG hospital and AMC MET medical college, Ahmedabad, Gujarat, India, from May 2018 to September 2018 A total 50 patients were examined and comparison done between the modalities of USG and CT scan The observations are as follows

Table 1: Age and Gender wise distribution

AGE (in years)						
SEX	11-20	21-30	31-40	41-50	51-70	TOTAL
MALE	2(47%)	10(42%)	13(309%)	12(285%)	5(119%)	42(84%)
FEMALE	1(125%)	2(25%)	0(0%)	0(0%)	5(625%)	08(16%)
TOTAL	3(6%)	12(24%)	13(26%)	12(24%)	10(20%)	50(100%)

In our study 42 (84%) patients are males and 8 (16%) are females, between age groups of 11-70 years The peak incidence was noted in the age group of 31-40 years, which comprised 13 (26%) of patients Of all age groups, males in 31-40 years formed the bulk of study ie 13 (309%)

Table 2: Various common symptoms in acute and chronic pancreatitis

SYMPTOMS	Abdominal pain	Vomiting	Fever	weight loss
ACUTE PANCREATITIS	30(731%)	22(709%)	19(678%)	4(5714%)
CHRONIC PANCREATITIS	11(268%)	9(2903%)	9(32014%)	3(4285%)
TOTAL	41	31	28	7

Pain in abdomen (82%) is most common complaint of both the types of pancreatitis Vomiting (60%) is second most common complaint in present study followed by fever (56%) and least common is weight loss (14%)

Table 3: Value of serum amylase and lipase in acute and chronic pancreatitis

	Serum Amylase (28-100 U/L)	Serum lipase (0-160 U/L)	Total
Acute pancreatitis	25	17	42
Chronic pancreatitis	10	8	18

In our study, out of 50 cases of pancreatitis, raised S amylase is commonly associated with acute pancreatitis 25 (50%) patients than chronic 10 (20%) pancreatitis, whereas raised S lipase is also prominent feature of acute pancreatitis

Table 4: USG DIAGNOSIS

Diagnosis	Frequency
Obscured	09(18%)
Acute edematous pancreatitis	15(30%)
Acute on chronic pancreatitis	05(10%)
Acute pancreatitis with peripancreatic fluid collection	01(2%)
Acute pancreatitis with pseudocyst formation	01(2%)
Chronic pancreatitis	12(24%)
Pseudocyst	07(14%)
Total	50

Table 5:CT DIAGNOSIS

Diagnosis	Frequency
Acute edematous pancreatitis	15(30%)
Acute on chronic pancreatitis	09(18%)
Acute pancreatitis with peripancreatic fluid collection	03(6%)
Acute pancreatitis with pseudocyst formation	02(4%)
Chronic pancreatitis	16(35%)
Pseudocyst	05(10%)
Total	50

Table 6: parenchymal involvement on USG AND CT SCAN

		CT (parenchyma)		Total
		Yes	No	
USG (parenchyma)	Yes	30(967%)	01(32%)	31(62%)
	No	15(789%)	04(21%)	19(38%)
Total		45(90%)	05(10%)	50(100%)
Mc nermar p-value		00041		
Pearson chi square		415		

In a study of 50 patients, USG determine parenchymal echotexture of 31 (62%) patients and CT determined parenchymal echotexture of 45 (90%) patients which proves that CT fared a better role in evaluating PARENCHYMA of the gland in comparison of USG (P value=00041)

Table 7: MAIN PANCREATIC DUCT INVOLVEMENT

		CT (MPD)		
		Yes	No	Total
USG (parenchyma)	Yes	04(80%)	01(20%)	05(10%)
	No	07(155%)	38(844%)	45(90%)
Total		11(22%)	39(78%)	50(100%)
Mc nermar p-value		00009		
Pearson chi square		1089		

In a our study of 50 patients, USG determined MPD of 5 (10%) patients and CT determined MPD of 11 (22%) patients which proves that CT played a better role in evaluating MPD of the gland in comparison of USG (P value=00009)

Table 8: CALCIFICATION IN USG AND CT SCAN

		CT (Calcification)		
		Yes	No	Total
USG (parenchyma)	Yes	02(666%)	01(333%)	03(6%)
	No	05(106%)	42(893%)	47(94%)
Total		07(16%)	42(84%)	50(100%)
Mc nermar p-value		0006		
Pearson chi square		73		

In a study of 50 patients, USG determined calcification of 3(6%) patients and CT determined calcification of 7(16%) patients which proves that CT fared a better role in evaluating CALCIFICATION of the gland in comparison of USG (P value=0006)

DISCUSSION

In our study, the patients were examined by USG using convex and linear probe in transverse and longitudinal planes All the patients were followed up for a CT scan examination who were diagnosed pancreatitis, in whom clinical examination and laboratory parameters favoured pancreatitis but USG was suboptimal The key role of CT scan is to determine the inflammation of pancreas in which USG was non-diagnostic or sub optimally examined Also, it plays a key role to determine extent of the affected gland, multisystem involvement and complications as

early diagnosis and management becomes critical to avoid catastrophic consequences of pancreatitis

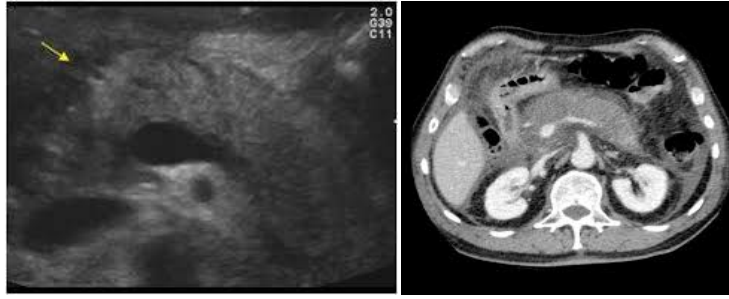


Figure 1

figure 2

Figure 1 showed axial section of USG enlarged pancreas with slight inhomogeneous echopattern of pancreas. No evidence of dilated duct or calcification or peripancreatic fluid collection was seen.

Figure 2 showed axial section of contrast-enhanced CT scan of abdomen showing enlarged pancreatic parenchyma with minimal peripancreatic fluid collection, minimal ascites and bilateral thickening of Gerota's fascia. Figure 1 and 2 showed features of acute pancreatitis.



Figure 3

figure 4

Figure 3 and 4 respectively are USG and contrast-enhanced scan of abdomen showing atrophic pancreatic parenchyma with multiple pancreatic parenchymal calcifications, diagnostic of chronic pancreatitis.

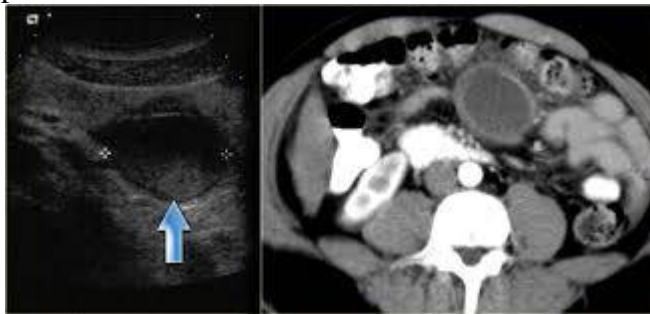


Figure 5

figure 6

USG finding in figure 5 showed a well-defined cystic lesion with internal echos in relation to the body of the pancreas. Contrast CT scan in figure 6 showed a well-defined fluid density collection in relation to the body of the pancreas. Both USG and CT scan findings are suggestive of pseudocyst.

Silverstein et al study a prospective study done on 102 patients consecutively to determine the role of USG and CT scan in pancreatitis. Our present study included 50 patients who underwent USG as well as CT scan examination with 42 (84%) males and 8 (16%) females, with males being

more affected than females Of these most patients were of age 31-40 of being 13 (26%) patients' findings like that of Silverstein et al of 65 among 102 patients^[7]

Alcohol and gall stones are major etiological agents in pancreatitis O'Connor et al study approximates 70% etiology of pancreatitis due to gall stones and alcohol Silverstein et al study had 57 patients with alcohol history and 6 with gall stones in comparison to present study which had 25 and 5 patients respectively^[8]

The advantages of USG are its easy accessibility, non-invasive nature and it is radiation free Its less time consuming so in emergency situations when the patients' conditions is rapidly declining it is easily used as an initial diagnostic tool

CONCLUSION

Ultrasound by non-invasiveness, lack of radiation hazard and by ability to demonstrate structural changes in organ is initial investigation of choice in evaluation of pancreatitis Ultrasound can detect presence of inflammation and characterize the size, shape and echo texture of the gland, but because pancreas is retroperitoneal organ it is difficult to easily evaluate it

CT scan of abdomen with axial and coronal reconstruction is pre-requisite for detailed evaluation of pancreas CECT scan show better delineation and margins and extent of the gland than USG CT scan is better than USG in determining the size, parenchyma, necrosis, calcification and complications associated with pancreatitis

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Original article
20

COMPARISION OF EPIDURAL BUPIVACAINE HYDROCHLORIDE AND BUTORPHANOL TARTRATE V/S BUPIVACAINE HYDROCHLORIDE AND FENTANYL CITRATE FOR POSTOPERATIVE ANALGESIA IN LOWER ABDOMINAL AND LOWER LIMD SURGERY

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ABSTRACT

INTRODUCTION: Symptomatic pain relief to the patient is vital for early mobilization & general well being of patient that leading to timely postop discharge This study is designed to compare the efficacy and safety of post operative analgesia with epidural Butorphanol Tartrate (2 mg) with Bupivacaine Hydrochloride (0.125%) compared with epidural Fentanyl Citrate (50 microgram) with Bupivacaine Hydrochloride (0.125) for lower abdominal & lower limb surgery

MATERIAL AND METHOD: Fifty adult patients of ASA grade 1 & 2 of either sex posted for elective lower abdominal & lower limb surgeries were selected for study GROUP BB received epidural butorphanol tartrate 2mg + bupivacaine 0.125% (total 10 ml) GROUP BF received epidural fentanyl citrate (50 microgram) + bupivacaine 0.125% (total 10ml) After giving study drug at 0 min, 15 min, 30 min, and thereafter 2 hourly following parameters were observed Pain assessment was done using VAS score , sedation score using RSS score , vital parameters monitored , complication observed

RESULT: Duration of analgesia was longer in group BB which ranged from 300-550 minutes compared to group BF which ranged from 250-450 minutes This was clinically and statistically significant

CONCLUSION: Butorphanol Tartrate with Bupivacaine Hydrochloride epidurally in comparison to Fentanyl Citrate with Bupivacaine Hydrochloride is safe & effective in providing good pain relief of longer duration in postoperative period with minimal side effect and no significant cardiorespiratory effect Though onset of analgesia is delayed with butorphanol tartrate in comparison to Fentanyl Citrate

KEY WORD: Butorphanol Hydrochloride, Bupivacaine Hydrochloride, postoperative analgesia, epidural, Fentanyl Citrate

INTRODUCTION

Pain is undesirable, noxious stimulus If not treated , it challenges sympathetic nervous system of the patients leading to stress response like hypertension , tachycardia & emotional distress Good postop pain relief is a hallmark of good anesthetics

Post operative analgesia is the most important aspect of anesthesia, especially in major abdominal surgeries which leads to severe abdominal pain , if treated inadequately it causes breathing problems, atelectasis of lung leading to retention of secretions and so more time is required then for early mobilization This increases the incidence of postoperative morbidity and leads to delayed recovery For this Epidural technique has been found to provide better pain relief than systemic opioids and reduces their side effect like nausea, vomiting , pruritic , & respiratory depression Adjuvants are co-administered with local anesthetics in epidural route to improve the speed of onset of analgesia and to reduce their dose thereby eliminating quite a few side effect like hypotonia and help to provide superior quality of analgesia Epidural opioids work by crossing the dura and arachnoid membrane to reach the CSF and spinal cord dorsal horn

A drug such as Butorphanol Tartrate a mixed narcotic agonist/antagonist, first introduced in 1978 act as mu agonist/antagonist and kappa agonist, also produces analgesia , associated with fewer side effects and low abuse potential Its high lipid solubility and high affinity for opioid receptors are additional factors that contribute to paucity of side effects with its use

Fentanyl citrate was chosen for the study for advantages like no neurolytic preservatives, highly lipophilic, so better retained within the epidural space and short half life Inj Butorphanol Tartrate(16-18hrs) has prolonged half life compare to Fentanyl Citrate (31-66hrs) So Butorphanol Tartrate has prolong duration of action

The present study was conducted to assess the safety and efficacy of postoperative analgesia with epidural Butorphanol Tartrate(2 mg) with Bupivacaine Hydrochloride (0.125%) compared with epidural Fentanyl Citrate (50 microgram) with Bupivacaine Hydrochloride (0.125%) for lower abdominal and lower limb surgery

MATERIAL AND METHOD

Fifty adult patients of ASA grade 1 and 2 of either sex were posted for elective lower abdominal and lower limb surgery like below knee amputation, total knee replacement, etc were selected for study. Lower abdominal surgery is defined as the incision below the umbilicus, eg abdominal pelvic surgeries, hysterectomy, Anterior resection, Radical hysterectomy etc. Patients were randomly divided into two groups of 25 each.

GROUP BB- Inj Bupivacaine Hydrochloride(0.125%) 9ml + Butorphanol Tartrate(40microgram/kg) 1ml (total volume 10 ml)

GROUP BF-Inj Bupivacaine Hydrochloride(0.125%) 9ml + Fentanyl Citrate (1microgram/kg) 1ml (total volume 10 ml)

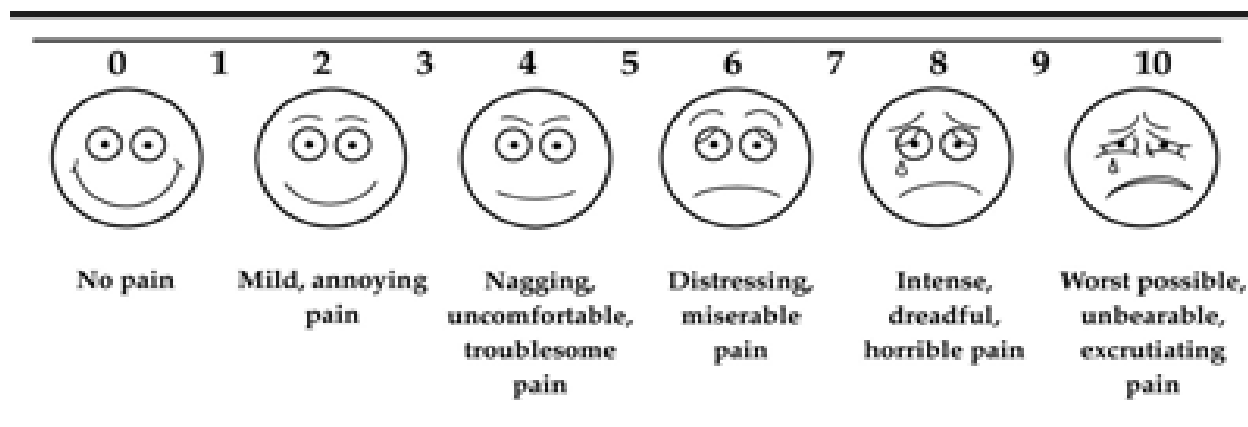
All patients underwent appropriate preanesthetic evaluation and were explained about epidural technique and its advantage and disadvantage. They were also educated about usage of VAS for assessment of postoperative pain intensity and were instructed to mark on scale. To allay anxiety all patients were given tablet Lorazepam (1mg or 2 mg) at 10:00pm before surgery.

On arrival of patient in OT an intravenous line was secured with 18G cannula & Inj RL 500 ml infusion was started intravenously. Under proper monitoring ECG, NIBP & Pulse oximetry baseline parameters were noted. Then patient was placed in sitting or lateral position and under all aseptic and antiseptic precaution Epidural needle/Tuohy's needle no 18 G was inserted at L2-L3 or L3-L4 then after confirming epidural space by Hanging drop / LOR method epidural catheter was cephalic guided through epidural needle till about 4-5 cm in epidural space. Epidural catheter was fixed to the back using adhesive tape.

3 ml of 2% lignocaine with adrenaline 1:2,00,000 was injected through the catheter as a test dose and observed for any intravascular or intrathecal injection. No narcotics were administered during the intraoperative period. Administration of LA like xylocaine or bupivacaine was allowed intraoperatively to offer the benefit of hypotension and analgesia to the patient to minimize blood loss during surgery.

After completion of the surgery, in postoperative period when patient first complained of pain, intensity of pain was assessed using VAS scale. When VAS score was 4 or more, study drug was given through epidural catheter as group BB or group BF.

The intensity of pain and pain relief was assessed using VAS at 0 min, 15 min, 30 min, 2hrs and thereafter 2hrly for 12 hours postoperatively. As and when the patient complained of pain during the period of observation, inadequate pain control was assessed using VAS. If it was 4 or more, rescue analgesia was given in form of injection Diclofenac 15mg/kg intravenously. Vital parameter monitoring was done after drug administration & throughout postoperative period.



During post op period the following parameters were observed like onset of analgesia ,duration of analgesia , sedation using Ramsay sedation assessment scale and adverse effect like pruritic , nausea , vomiting , respiratory depression and hypotension

RAMSAY SEDATION ASSESSMENT SCALE:

Awake level	Patient anxious and agitated or both	1
Awake level	Patient cooperative , oriented and tranquil	2
Awake level	Patient responds to commands only	3
Asleep level	Patient exhibit brisk response to light glabellar tap	4
Asleep level	Patient exhibit a sluggish response to light glabellar tap	5
Asleep level	Patient exhibit no response	6

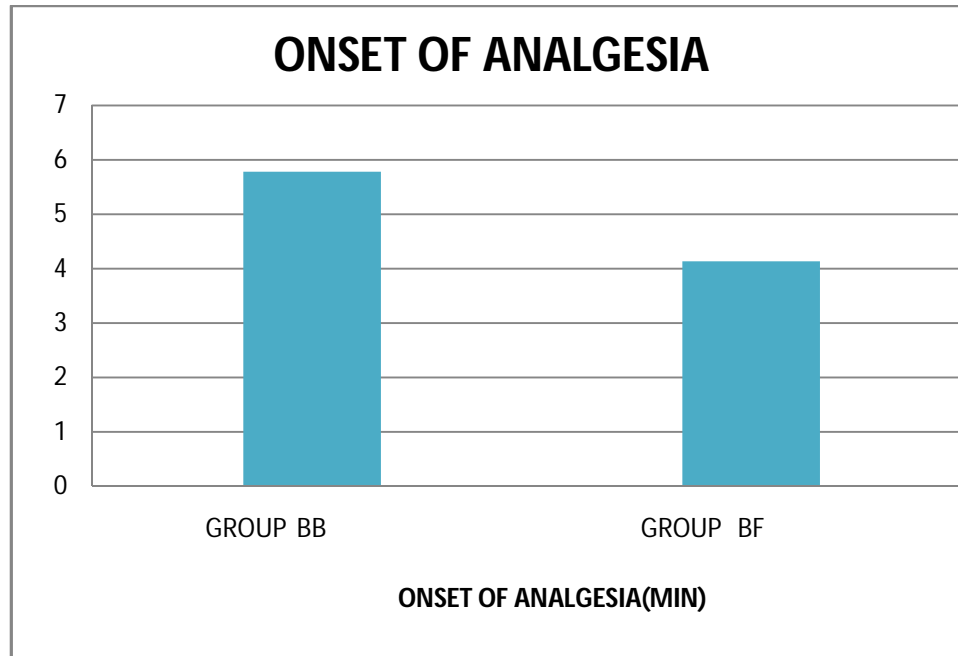
Descriptive statistical analysis has been carried out in the present study Student t test was used to find the significance of duration of analgesia , onset of analgesia and VAS score between two groups, Chi-square and Fisher Exact test has been used to find the significance incidence of side effect between two groups Microsoft word & Excel have been used to generate graphs , tables etc

OBSERVATION AND RESULT

In present study , in group BB mean age of patient was 382+/-151 and in group BF it was 405+/-83 Sex distribution ratio in both group were almost equal There was no significant difference of patient's age($p=0.05$) and sex($p>0.005$) between both group as shown in table Thus demographic data has no influence on outcome of the study

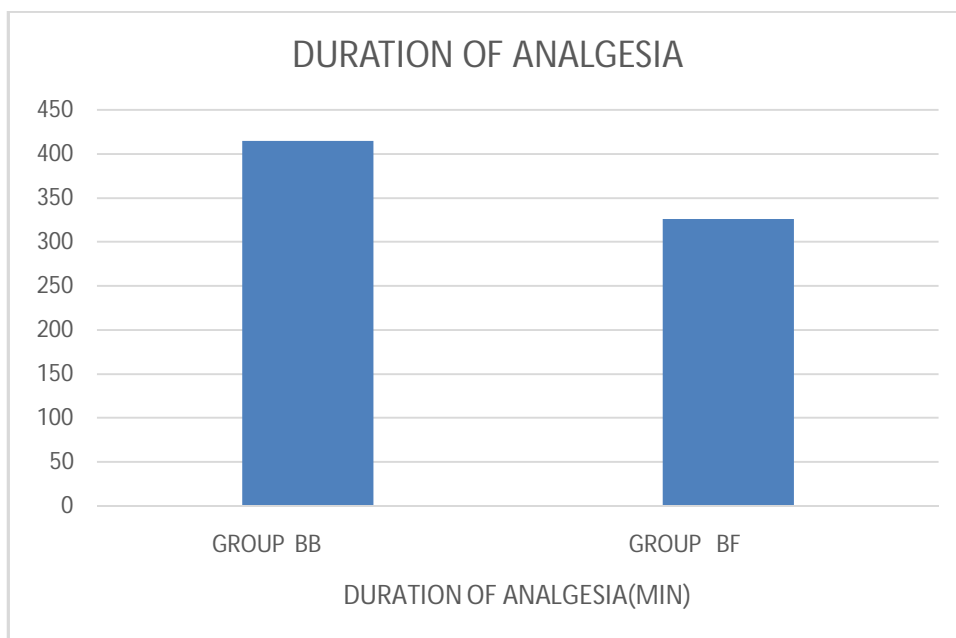
VARIABLES	GROUP BB	GROUP BF
AGE(MEAN+/-SD)	382 + 151	405 + /- 83
SEX RATIO(M:F)	12:13	12:13
WEIGHT(MEAN+/-SD)	62 +/- 76	61 +/- 71
ASA GRADE(1:2)	20:5	20:5

The onset of analgesia is the time interval from administration of the study drug (VAS score 4 or more) to first reduction in pain intensity by at least 10 mm in VAS. The duration of analgesia is the time interval between onset of analgesia till patient complaints of pain (VAS score 4 or more) when rescue medication was given.



ONSET OF ANALGESIA (MIN)	GROUP BB (NO OF PT)	GROUP BF (NO OF PT)
2-4	2	14
4-6	16	8
6-8	6	3
>8	1	0
MEAN +/- SD	578 +/- 16	414 +/- 18

In present study, 64 % of the patients in group BB had onset of analgesia between 4-6 minutes and 24% between 6-8 minutes. In group BF, 56% of patients had onset of analgesia between 2-4 minutes and 32% of patients had onset between 4-6 minutes. Statistical analysis showed that onset of analgesia in group BB was delayed and statistically strongly significant with $t=328$ and $p=0001$.



DURATION OF ANALGESIA (MIN)	GROUP BB (NO OF PT)	GROUP BF (NO OF PT)
250-300	0	6
300-350	2	15
350-400	5	2
400-450	15	2
450-500	2	0
500-550	1	0
MEAN +/- SD	4154 +/- 439	3264 +/- 445

In this study duration of analgesia in group BB ranged from 300-550 minutes and in group BF range from 250-450 minutes. Statistical analysis showed that duration of analgesia was less in group BF and statistically extremely significant with $t=710$ and $p<00001$.

TIME	GROUP BB (MEAN +/- SD)			GROUP BF (MEAN +/- SD)		
	PR bpm	SBP mmHg	DBP mmHg	PR bpm	SBP mmHg	DBP mmHg
BASELINE	743+/-75	1284+/-123	81+/-57	743+/-78	1287+/-139	817+/-71
0 MIN	743+/-7	1286+/-123	81+/-53	74+/-76	1283+/-137	813+/-8
15 MIN	745+/-76	1289+/-115	817+/-6	745+/-81	1272+/-134	809+/-77
30 MIN	744+/-8	1299+/-119	824+/-58	756+/-82	1272+/-154	799+/-82
2 HOURS	756 +/-68	1297+/-127	819+/-48	751+/-73	128+/-143	83+/-72
4 HOURS	744+/-78	1291+/-118	816+/-55	736+/-74	1292+/-141	817+/-75
6 HOURS	748+/-79	1292+/-129	828+/-53	738+/-71	1281+/-145	82+/-72

8 HOURS	747+/-69	1287+/-129	82+/-67	737+/-74	1283+/-147	82+/-8
10HOURS	752+/-87	1293+/-135	822+/-63	74+/-76	1284+/-133	817+/-72
12HOURS	745+/- 87	1284+/-128	825+/-75	745+/-78	1284+/-132	832+/-77

It can be seen from above table that there was no difference with regards to pulse rate and blood pressure between the two groups observed. There were no hemodynamic changes observed throughout the study.

ADVERSE EFFECTS	GROUP BB		GROUP BF	
	NO	%	NO	%
SEDATION	8	32	2	8
PRURITIS	0	0	5	20
NAUSEA-VOMMITING	3	12	9	36
RESPIRATORY DEPRESSION	0	0	0	0
HYPOTENSION	0	0	1	4

Sedation was observed 32% of group BB and 8% of group BF. This was statistically significant ($p < 0.005$). Sedation observed during study was Awake level of sedation according to Ramsay scale which is good for patient during postoperative period.

Pruritic was seen 20% in group BF and 0% in group BB which was statistically significant ($p < 0.005$). Nausea and vomiting was seen 12% in group BB and 36% in group BF which was statistically significant ($p < 0.005$). Hypotension & Respiratory Depression were statistically insignificant ($p > 0.005$).

DISCUSSION

The treatment of pain after surgery is central to the care of postoperative patients. Epidural route is used extensively for postoperative pain control. The use of epidural opioids as adjuvants to local anesthetic has become an increasingly popular technique for management of acute postoperative pain in recent times.

Opioids placed in epidural space may undergo uptake into epidural fat, systemic absorption, or diffusion across the dura into the cerebrospinal fluid. Epidurally administration of opioids produces considerable CSF concentrations of drug. Penetration of the dura is considerably influenced by lipid solubility, but molecular weight may also be important. Drugs administered epidurally can be distributed in several ways. They may diffuse through the spinal meninges into the cerebrospinal fluid (CSF), from which they can reach their site of action, the dorsal horn of the spinal cord directly. Fentanyl and Butorphanol are approximately 800 and 140 times respectively, as lipid soluble as morphine. After epidural administration, CSF concentrations of

fentanyl peaks in about 20 minutes while with Butorphanol it peaks in about 40-60mins, This is probably reason for delayed onset of analgesia with BB than BF group

Butorphanol is a potent analgesic with both opioid agonist and antagonist effect Butorphanol and its major metabolites are agonist at kappa-opioid receptors and mixed agonist-antagonists at mu opioid receptors The analgesic potential of Butorphanol on a weight basis are 7 times that of Morphineit is consider safer than pure agonist opioids because of its ceiling effect on respiratory depression , lower addiction potential , lesser nausea, vomiting , pruritus and urinary retention It produces sedation comparable to or more than that of morphine , which is desired in postoperative period

Fentanyl Citrate acts primarily as mu opioid receptor agonist Like other opiates, this produces supra spinal analgesia It also acts on K (Kappa) and δ (delta) receptors producing spinal analgesia It also antagonizes 5HT levels in the brain, thereby potentiating the analgesic activity as the opioids It is formulated as a clear solution with pH adjusted to 40 – 75 with sodium hydroxide

The present study is a prospective randomized controlled clinical comparative study done to assess the efficacy and safety of epidural Bupivacaine hydrochloride and Butorphanol tartrate v/s epidural Bupivacaine Hydrochloride and Fentanyl Citrate for post operative analgesia in lower abdominal and lower limb surgeries After giving study drug onset of analgesia , duration of analgesia ,sedation score by RSS score , cardio respiratory effect by Hear Rate, Blood Pressure and Respiratory Rate and adverse effect like pruritic , nausea , vomiting, respiratory depression & hypotension were recorded

In our study the mean time for onset of analgesia in group BB was 578+/-16(SD)minutes and in group BF was 414+/-18(SD) minutes A majority of patients in group BB had onset of analgesia between 4-6 minutes and whereas in in group BF between 2-4 minutes Statistical analysis showed that onset of analgesia in group BB was delayed and statistically strongly significant with t=328 and p=0001 We can correlate our study with study conduted by:Rutter DV et al³⁵ , in 1981 repotaed that 100microgram of fentanyl citrate for postoperative pain relief had a rapid onset of action ie almost 50% reduction in mean pain within 5 min

In the present study duration of analgesia in group BB ranged from 300-550 minutes with a mean+/-SD of 4154+/-439 and in group BF ranged from 250-450 minutes with a mean +/-SD of 3264+/-445 min Statistical analysis showed that duration of analgesia was less in group BF and statistically extremely significant with t=710 and p<00001 Our study is in agreement with study conducted by: Aswini A at al⁴ in 2014 conducted a comparative study of epidural Butorphanol Tartrate and Fentanyl Citrate for post operative analgesia in lower abdominal surgeries and lower limb surgeries Duration of analgesia was clinically and statistically longer in Butorphanol Tartrate group(350 mins) in comparison to Fentanyl Citrate group(230 mins)

Sedation was observed in 32% of group BB patients and 8% of group BF patients. This was statistically significant ($p < 0.005$). Though more numbers of patients had mild sedation in group BB, patient sedated but arousable, sedation was not so severe to cause respiratory depression. Catherine O'Connell³² in his study has reported a higher incidence of sedation with epidural Butorphanol Tartrate and is a dose dependent side effect.

In present study heart rate, blood pressure, and respiratory rate remained stable throughout the observation period. Our study can be compared with following study: Aswini A et al⁴ in 2014 conducted a comparative study of epidural Butorphanol Tartrate and Fentanyl Citrate for post operative analgesia in lower abdominal surgeries and lower limb surgeries. There was no significant changes in pulse rate, BP and RR in either group throughout post operative period.

Pruritic, a subjective unpleasant and irritating sensation that provokes an urge to scratch and the symptoms typically start at the trunk, nose, around eyes and usually localized to facial areas, innervated by the trigeminal nerve. The spinal nucleus of trigeminal nerve is rich in opioids receptors. In our study it was seen 20% in group BF and 0% in group BB which was statistically significant ($p < 0.005$). Premila Malik, Chhavi Manchanda, Naveen Malhotra¹¹ in 2006 compare the efficacy of epidural Butorphanol tartrate 2 mg and Fentanyl Citrate 50 microgram. They found that pruritic was higher in epidural fentanyl citrate group ($p < 0.05$).

Nausea and Vomiting was seen 12% in group BB and 36% in group BF which was statistically significant ($p < 0.005$). Hypotension & Respiratory Depression were statistically insignificant ($p > 0.05$).

The epidural catheter was kept for more 4 days in post operative period and same drug was given to the patients twice a day through epidural catheter. On 5th day epidural catheter was removed. Tip of catheter properly inspected and sterile dressing was applied at site of insertion.

CONCLUSION

It can be concluded that Butorphanol Tartrate (2mg) with Bupivacaine Hydrochloride (0.125%) epidurally in comparison to Fentanyl Citrate (50 microgram) with Bupivacaine Hydrochloride (0.125%) is safe & effective in providing good pain relief of moderate duration in postoperative period with minimal side effect and no significant cardiorespiratory effect. Fentanyl Citrate with Bupivacaine has rapid onset of action but with significant side effects like nausea-vomiting and pruritic. Butorphanol Tartrate with Bupivacaine Hydrochloride has prolonged duration of analgesia compared to Fentanyl Citrate with Bupivacaine Hydrochloride with minimal side effect.

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Original article**21**

Original article

“PREVAILING KNOWLEDGE ABOUT STROKE SYMPTOMS AND TREATMENT OPTIONS AMONG THE RELATIVES OF NON-STROKE PATIENTS”

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Key words: stroke awareness, thrombolysis

Abstract:

Background- This study assessed public awareness of warning symptoms, risk factors, and treatment of stroke in Gujarat In spite of huge burden affecting the people in their prime period of life, resulting large number of death and huge burden of disability, no definite awareness programs are chalked in India

This study Purpose—This study is planned to assess public awareness of warning symptoms, risk factors, and treatment of stroke among the lay persons

Method : cross sectional survey based study of the relatives of the patients The relatives to the stroke patients are excluded from the survey to prevent the bias

The study was carried out at VSGH from March2018 to May 2018

For this study, trained resident, with good vernacular language command interviewed subjects using structured, predefined, open ended questions

Results—1000 subjects were interviewed during the study period (624% men, mean age 401 years, age range 15 to 80 years) 32 percent of the subjects did not recognize the brain as the affected organ in stroke In the multivariate analysis, higher education (P value<0001; odds ratio 32; 95%, CI 13 to 28) correlated with a better knowledge of which organ was affected in stroke 42% of the participants did not know a single warning symptom of stroke 21% of the subjects could not identify even a single risk factor for stroke 23% of the study population believed that oil massage would improve stroke victims A small proportion of subjects believed in “Bhuva” (witchcraft, 3%), faith healing (11%)

12% understood the importance of the “Time” as a prime factor of the outcome In the multivariate analysis, even higher education (P value<0001; odds ratio 62; 95%, CI 13 to 48) correlated with a poor knowledge of the timely intervention 42% understand the importance of CT scan brain in such cases, however of these only 21 % knew , where the facility is available

Conclusions—This hospital-based survey reveals a very poor awareness of stroke warning signs, risk factors, treatment options There is extreme poor awareness about importance of time frame among even the highly educated people Hence, considerable awareness program are needed to increase public awareness about the stroke symptoms, risk factors and modern concepts of stroke treatment

Article title:

“Prevailing knowledge about stroke symptoms and treatment options among the relatives of non-stroke patients”

Article :

Introduction :

Because of poor reporting system the exact figure are difficult to delineate, however the prevalence of stroke in India varies in different states and it varies from 40 to 270 per 100 000 population Approximately 12% of all strokes occur in the population above 40 years of age This causes a significant morbidity to the earning population of India

With Increased life expectancy in India, we will face an enormous socio-economic burden to meet the costs of rehabilitation of stroke victims Despite recent advances in stroke therapy, the public remains uninformed about strokes, and very few stroke patients present to hospital with “CT Capability” in time to receive definite treatment

In India, many centres have started using recombinant tissue plasminogen activator(r-PTA) for acute ischemic stroke Even few public sector hospitals are giving it free of cost The best way for patients to receive the most effective stroke treatment is to approach an emergency department as quickly as possible after they have symptoms

Very few study from India have investigated public perception of stroke warning symptoms, risk factors, treatment options available and importance of time The awareness of these symptoms and risk factors are essential for the public to effectively use thrombolytic therapy for acute stroke in a timely manner This study was undertaken to assess public awareness of warning symptoms, risk factors, and treatment of stroke

Methods

The Emergency Department, VSGH conducted this cross-sectional hospital-based survey between February 2002 and September tertiary referral center situated in the heart of a metropolis

Relatives of patients in the emergency departments of the hospital formed the study subjects The Institutional Research Committee approved this study Subjects were selected in a random manner, from an eligible population, from the Emergency department Individuals 15 years of age, who consented, were interviewed personally Only the relatives of patients without a past history of stroke participated in the study to avoid the bias No two respondents were from the same family Two assigned resident who had undergone a 2-week orientation to the questionnaire conducted the interviews The questions were asked during a 1-to-1 interview in the local

vernacular language (preferably Gujarati) The interviewer intervened only to clarify a question, if need arose No attempt was made to prompt the subjects directly or indirectly

Questionnaire

The survey questionnaire was adapted from previous studies It had 20 questions, which were modified to suit local sociocultural practices The first section gathered demographic information, second only about the risk factor and third one about the knowledge about the treatment options Education was categorized into upto primary schooling (including liberates), secondary schooling (upto 10th standard) and higher secondary and above (up to 12th standard)[this categorisation was due to educational class of patients presenting to our setup]

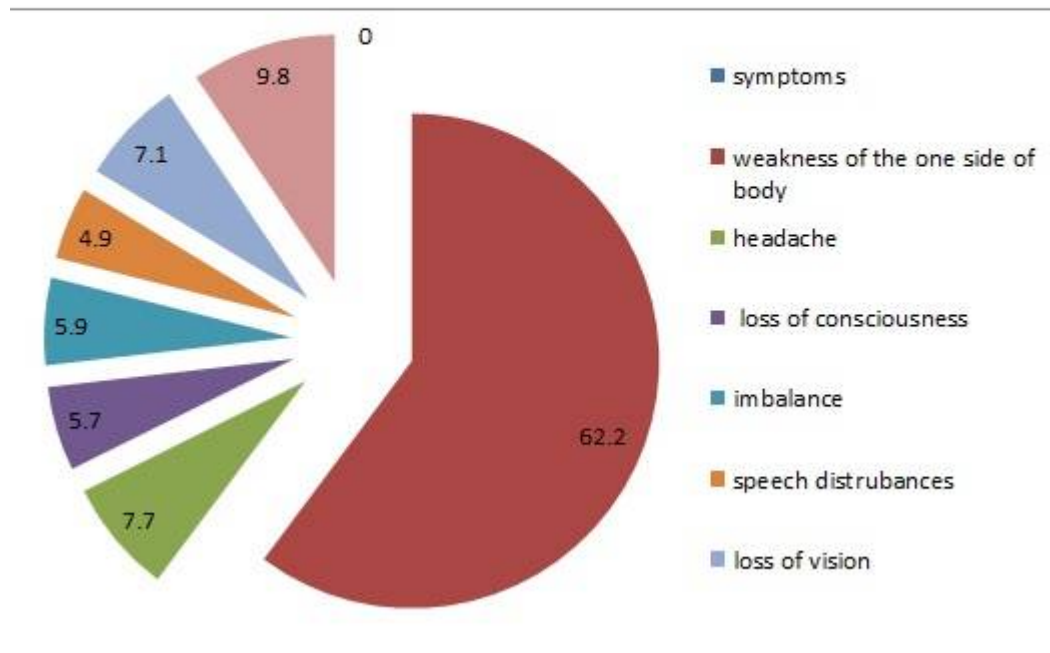
Changes were made in the questionnaire to various terms that are used for “stroke” in the local languages preferably Gujarati

Statistical Analysis

All statistical analysis was performed using EpiInfo 2K and StataMP 13 Different tests were used to assess the univariate relationship between components of stroke knowledge, warning signs, risk factors, and demographic variables Multivariate logistic regression was used to assess the predictors of knowing a single correct response to various questions

Results:

Graph 1 : knowledge about the symptoms of stroke among the respondents



groups	categories	Organ affected		Symptoms(at least one)		Risk factors(al least one)		Management options known(at least one)	
		aware	not aware	aware	not aware	aware	not aware	aware	not aware
Age	<40 years	34	18	68	32	43.2	68.2	43.2	68.2
	>40 years	34	14	74	26	54	46	54	46
Sex	men	62.4	38.6	76	24	68	32	68	32
	women	38.6	62.4	34	66	32	38	32	38
Education	upto 6 th standard	18.2	81.8	32.2	67.8	34.8	65.2	34.8	65.2
	6 to 10 th standard	24.4	75.6	43.8	56.2	64.2	35.8	64.2	35.8
	above 10th standard	68.4	31.6	75.2	24.8	88.1	11.9	88.1	11.9

table1: showing demographic profile, basic knowledge about organ affected, symptoms, risk factor and managemnet option among categories patients

table 2. knowledge about immediate action to be taken and treatment options available for the patients

Action	
call 108 (free govt ambulane services)	66%
Take him to hospital	72%
Call a family physician and equivalent	28%
show specialist	23%
Buy medicine from a shop	12%
Take him to hospital with CT scan available	32%
knew where the CT facility is available	21%
Treatment of stroke*	
Oil massage	23.00%
Blood thinning agents	8%
Aspirin	6%
Surgery	34%
Faith healing	11%
Witchcraft	3%
control of BP	24%
importance of time in definate treatment	12%

Results:

A total of 1211 individuals were screened and 1000 subjects consented to participate in the study We excluded 211 subjects who did not consent or had seen some close relative with a stroke to avoid “recall bias”

In the final analysis only 1000 subjects were included There were 624 (624%) men and 376 (376%) women The mean age was 401 years and SD was 129 (range 15 to 80 years) The demographic details are shown in Table 1

68% of subjects could name the brain as the affected organ in victims of stroke(table 1) 32 % of them thought that stroke involved various other Occlusion of a vessel as the cause of stroke was correctly stated by 408(408%) of the respondents 147 (147%) participants mentioned that rupture of a vessel could lead to stroke In the univariate analysis, a higher knowledge about the organ involved in stroke correlated with men (P0001), and persons belonging to a higher educational bracket (P0001) (P0001; Table 2) the multivariate analysis, higher secondary (P value<0001; odds ratio 32; 95%, CI 13 to 28) correlated with a better knowledge of which organ was affected in stroke

Warning Symptoms of Stroke : The most common warning symptom in a stroke, as described by respondents, was paralysis of 1 side of the body, 622 (622%) The other symptoms reports by the participants were headache, 77 (77%); loss of consciousness 57 (57%); imbalance 59 (59%); speech disturbance 49 (49%); loss of vision, 7 1(71%); and tingling sensation on 1 side 98 (98%)(graph 1) Two hundred and twelve subjects (212%) did not know a single warning symptom or sign of stroke Five hundred and nineteen (519%) respondents correctly identified 1 symptom, 153 (153%) individuals identified 2 symptoms, and only 58 (58%) knew 3 or more symptoms

Risk Factors for Stroke : Risk factors identified by subjects included hypertension, 451 (451%); stress, 409 (409%); diabetes, 107 (107%); high cholesterol, 67 (67%); heredity, 38 (38); obesity, 32 (32%); heart disease, 20 (2%); lack of exercise, 22(22%); smoking, 45 (45%); and black magic, 5 (05%)

One hundred and ninety-five (195%) participants did not know a single risk factor Only 482 (482%) individuals could name 1 risk factor correctly, 185 (185%) subjects knew 2 risk factors, and only 97 (97%) of them could name 3 or more risk factors Higher education (P005) was significantly associated with knowing a single risk factor in univariate analysis (Table 1) In multivariate logistic regression analysis, none of the variables attained statistical significance

Self-Reported Risk Factors In the multivariate logistic regression analysis, higher education (P0001; OR 26; 95% CI, 18 to 38) correlated with a better knowledge about the organ affected in stroke

Knowledge of Stroke Treatment :

320(32%) respondents knew CT is required to diagnosis such cases However, only 21% knew where the facility of CT scan brain is available in their nearby vicinity

Only 12% respondents knew about the time frame However, none of them exactly knew something like r-TPA or 3 hours of “time-window”

Only 140(14%) of respondents knew “blood thinner” like aspirin is as an appropriate therapy for the treatment of stroke (Table 2)

231 respondents (231%) believed that an oil massage would help stroke victims. The number of subjects who believed in indigenous treatments included faith healing treatment 11%, witchcraft 3%. However, the numbers in these categories were quite low in higher education category.

Men (P002; OR 13; 95% CI, 10 to 18) and younger age (P002; OR 07; 95% CI, 05 to 09) and higher education (P004; OR 18; 95% CI, 11 to 14) correlated with better knowledge about stroke treatment.

Discussion

Layman considers Stroke as Heart Attack by about 70% of people because of limited awareness programs India¹

Stroke Patients may not speak out and they are disabled suddenly with paralysis, lack of speech, confusion, giddiness, convulsion, blindness and are depressed and frustrated. Hence knowledge of symptoms among the relatives is vitally for correct and timely treatment^{1,2}

This survey was conducted among relatives of patients presenting to ED who are not having stroke as a presentation and who have no close relative with history of stroke in past. This is to prevent recall bias.

A population-based survey is not readily feasible in India^{2,3,4}, owing to the lack of insight, finances and other logistic issues. The demographic profiles in this study are may not be representative of the population of India and Gujarat (urban more than rural), who present to public hospital.

68% identified the brain as the affected organ in stroke, and ignorance of the warning symptoms and risk factors for stroke was common³. However, there is lack of awareness about stroke among the public even in developed countries like the United State^{5,6} and Australia.

The most common warning symptom identified by family members in our study was weakness of 1 side (622%). The percentage of respondents who mentioned weakness of one half the body as a symptom of stroke was comparable with other studies from the United States⁶ and Korea⁸.

Even though our respondents were aware of paralysis of 1 side as a symptom of stroke, 8% were able to identify other warning symptoms of stroke. The number of respondents who did not know even a single warning symptom suggest gross neglect about the major health hazard.

The awareness of stroke risk factors among even in higher education categories was poor in our study. That clearly states that future educational efforts need to focus on the population as a whole.

In this study, the knowledge about the organ involved, risk factors and treatment options of stroke was better among men, which is strongly suggest Indian cultural practices, educational status, opportunities, and income among both the genders. These is changing gradually, but this should be paced fast for the healthy society.

A majority of the respondents (72%) preferred to take a person to the hospital when they or someone close to them had experienced symptoms of stroke. However, 66% of the participants

said, they will call “108”, that shows immense faith of “108” ambulance services among the population of Gujarat This is because of acclaimed timely and effective services catered by them here Comparable responses were seen in other studies⁶ except in Korean subjects^{6,7} where only 46% of them mentioned that they would visit a hospital

28% would contact an family physician or equivalent doctor in our study Hence, physicians and family doctors need to be educated about referring patients to stroke centers within the window period of intervention This is true for developing countries, where the number of neurologists available to any population is proportionately much less than that in developed countries

The majority did not know about the appropriate treatment for stroke (561%) Approximately 107% of them believed in indigenous treatment modalities, including, oil massage, faith healing, and magic This could be an underestimation, because the majority of study subjects were from urban areas (74%) The sample size of the rural respondents was too small for any significant comparisons Native systems of medicine are deeply rooted in Indian culture, more so among the village dwellers These may also hinder in timely treatment interventions

32% knew about the required CT scan (Brain) for the definite treatment and 21% knew where the facility is available nearby This indicates patients may land in place without CT availability and lose valued time and available stroke thrombolysis treatment option

Now, intravenous thrombolysis treatment modality is available at various public and private hospitals in India But if public is not aware about such facility and importance of timely interventions, facilities cannot be utilized optimally Hence this study strongly suggests, there is need for public awareness program, may be in form of pamphlets, lectures, road shows etc to percolate the knowledge about the signs/symptoms of stroke and treatment

Conclusion and Summary

Hence, this study among the general public reveals a gross lack of awareness of stroke warning signs, risk factors and treatment options

India is a vast country with diverse social and cultural practices The findings from this study are limited in generalizability to the entire Indian population Future studies are needed which focus on community surveys including both rural and urban populations This shows efforts should be made to educate the public about stroke presentation, modern concepts of stroke treatment, so that people make more rational and beneficial health care decisions

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Original article

22

INCIDENCE OF SECONDARY GLAUCOMA AFTER OCULAR TRAUMA CORRELATED WITH THE TYPE OF INJURY

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ABSTRACT

Purpose :

To evaluate incidence of secondary glaucoma in post traumatic cases and correlates with the type of injury

Materials & Methodology

The Data was obtained from the records of 140 patient and reviewed and analysed from apr-2011 – December 2013

Results :

The 32 months incidence of developing posttraumatic glaucoma was 1139%

Need for glaucoma surgery was independently associated with

- a) Angle+ iris injury (46 cases , 3285%)
- b) Corneal + iris injury (15 cases , 1071%)
- c) Lens injury (56 cases , 40%)
- d) Angle recession (21 cases,15%)
- e) Presence of optic atrophy (16 cases , 1142%)
- f) H/o penetrating trauma(17 cases , 1214%)
- g) Vitreal injury 7 cases (5%)

Conclusions :

This study estimates incidence 1136% for the developing secondary glaucoma after ocular trauma associated with closed globe injury , blunt trauma This study provides an estimate for the risk of developing glaucoma after ocular contusion in a large cohort study population and has determined several independently predictive factors that were significantly associated with development of posttraumatic glaucoma These included poor visual acuity, advancing age , lens injury, angle recession and hyphema

INTRODUCTION :

It is a 32months study of incidence of secondary glaucoma correlated with the type of injury after ocular trauma Also we have included the age and the gender which is most commonly exposed to ocular trauma and time between trauma and onset of secondary glaucoma There are many different sub-types of glaucoma but they can all be considered a type of optic disc neuropathy Raised intraocular pressure (IOP) is a significant risk factor for developing glaucoma

These studies confirm that a pathophysiological basis for glaucoma is elevated intraocular pressure If the condition is detected early enough it is possible to arrest the development or slow the progression by medical and surgical means

Prevention of blindness from eye injuries requires:

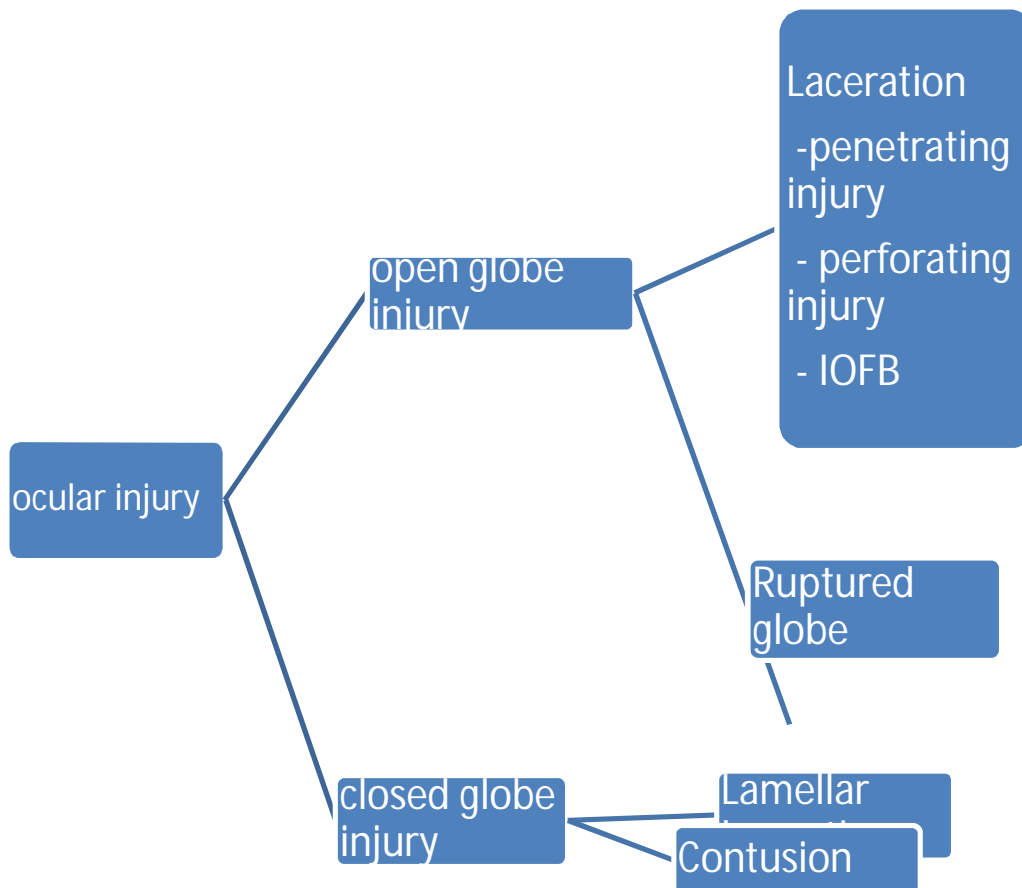
- injury prevention (health promotion including advocacy)
- early presentation by the patient (health promotion and health worker training)
- accurate assessment (good primary eye care and first aid)

- prompt referral of serious injuries requiring specialist management(4,5)

Traumatic glaucoma is a multifactorial group of disorders that results from closed- or open-globe injuries. Although different underlying mechanisms may be involved with the initial injury, the resulting optic neuropathy and visual field loss is secondary to elevated IOP from reduction in aqueous outflow through the trabecular meshwork (18). Secondary glaucoma after trauma is more likely to occur with a closed-globe injury, but it is often underdiagnosed because its onset may be delayed and the history of eye injury may be remote or overlooked (6).

Types of injury :

We have divided the patient according to **BIRMINGHAM EYE TRAUMA TERMINOLOGY SYSTEM(10,11)**



According to this, we found 17 (12.14%) patient of open globe injury and 123 (87.85%) patient of close globe injury

Onset : Duration of developing glaucoma after trauma is quite variable so we classified the patient into early, intermediate and late categories from the time of injury. Early - < 2 month, Intermediate - 2 - 6 month, Late - > 6 month. Majority of patients are presented within two months of exposure to trauma. Their chief complaints were mainly pain associated with dimness of vision.

IOP Assessment

- Goldman tonometry is the “gold standard”
- Applanates over 302 mm so tear meniscus pressure and corneal rigidity are balanced
- The inward pressure of the tonometer equals the IOP
- Will vary with corneal abnormalities
- “Normal IOP” is 6 - 22 mmHg
- 95 % of normals fall within this range
- Ocular hypertension > glaucoma
- 25-30 % of glaucoma in NZ is normal pressure glaucoma
- Proportion varies markedly with race(9,12)

Clinical findings of secondary glaucoma associated with trauma are complex. This study found several independent predictive factors such as hyphema, pupillary block, angle abnormality including synechial closure-angle recession and presence of optic atrophy that were significantly associated with development of secondary glaucoma. Out of all above mentioned factors, injury to Lens injury was the most commonly found followed by injury to angle, iris and corneal injury to be responsible for PTG. Each type of PTG received different type of therapeutic treatment. Indication for glaucoma surgery independently associated with corneal, hyphema, lens, vitreal, penetrating trauma was found to be statically significant. Most of the patients were treated with conservative treatment with antiglaucoma medication. And some of them underwent surgery in the form of those patient who had taken glaucoma treatment elsewhere and having pre-existing glaucoma were not included in these study.

10 AIMS AND OBJECTIVES

1. To determine the incidence of secondary glaucoma following ocular trauma
2. Correlation with the type of injury

20 MATERIALS & METHODOLOGY

- 1) study type: 32 month observational cross sectional
- 2) Study area - Patient who presented with symptom of raised IOP and poor visual acuity following ocular trauma at Sheth CHNagri Eye hospital
- 3) Study population - Patient who presented with symptom of raised IOP and poor visual acuity

following ocular trauma at Sheth CHNagri eye hospital , April 2011 – December 2013 were included Total 1236 patient were included ,out of which 140 patient were found with PTG

- 4) Inclusion criteria - 1New case of ocular trauma
 2First time detected PTG
 3No other pre-existing eye disease
- 5) Exclusion criteria - 1Pre-existing glaucoma
 2ocular co morbidity

6) Sampling and sample size – 140 patients

7) Procedures – Most of patient presenting with chief complain of sudden dimness of vision and pain Proper ophthalmic history and full ophthalmic examination including tonometry, pachymetry, torch light, slit lamp examination, gonioscopy (except penetrating injury), fundus examination and ultrasonography in selected patients were carried out

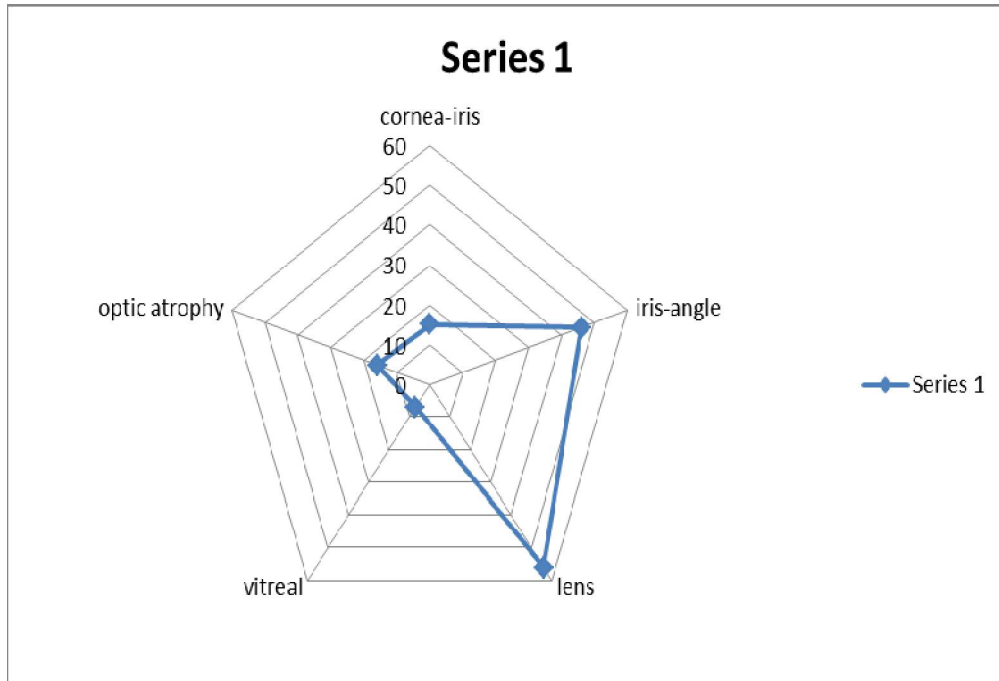
8) Data management and analysis : we have recorded all the patients and classified them according to age group, Gender, duration, Type of injury, structural abnormality, treatment modality to be given

3 0 RESULTS

In this study we have included 1236 patients having ocular trauma who attended during OPD hours from which 140 patients developed post traumatic glaucoma giving an incidence rate of 1136%Need for glaucoma surgery was independently associated with

- a) Angle + Iris injury (46 cases, 3285%)
- b) Corneal + Iris injury (15 cases, 1071%)
- c) Lens injury (56 cases, 40%)
- d) Angle recession (21 cases, 15%)
- e) Optic atrophy (16 cases, 1142%)
- f) H/O penetrating trauma (17 cases, 1214%)
- g) Vitreal injury (7 cases, 5%)
- h) Incidence was found higher in male 86 (6142%) population than female 54 (3857%) populationMost commonly affected age groups were 31 – 40 years and 41 – 50 years Maximum patients presented in early phase; 84 (60%) , minimum in intermediate Phase 16 (1142%) in between and 40(2857%) in late phase

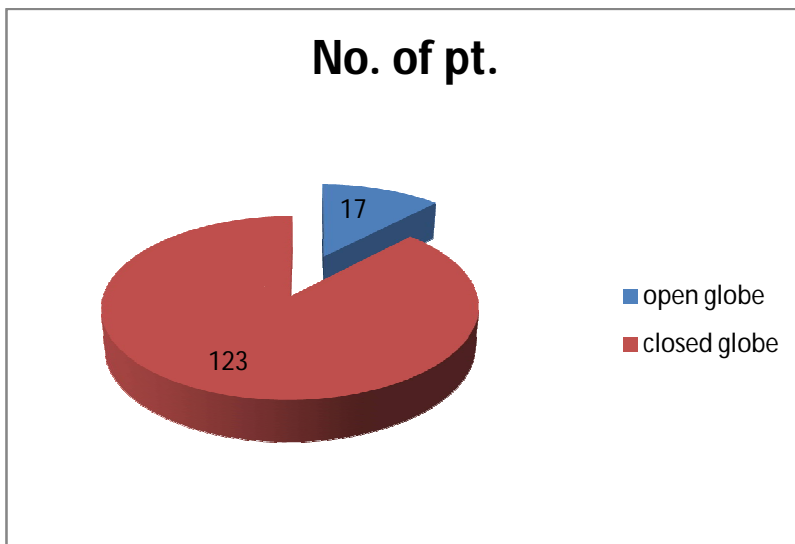
Table 1: Distribution of anatomical abnormalities



Structure abnormality	Noof patient
Cornea + iris	15
Iris + angle	46
Lens	56
Vitreous	07
Optic atrophy	16

most common structural abnormality was found to be injury to the lens 56(40%) , iris +angle 46 (3285%) of which Angle recession was found in 21 (15%) , cornea + iris 15 (1071%) , optic atrophy 16 (1142%) and vitreal injury (5%)

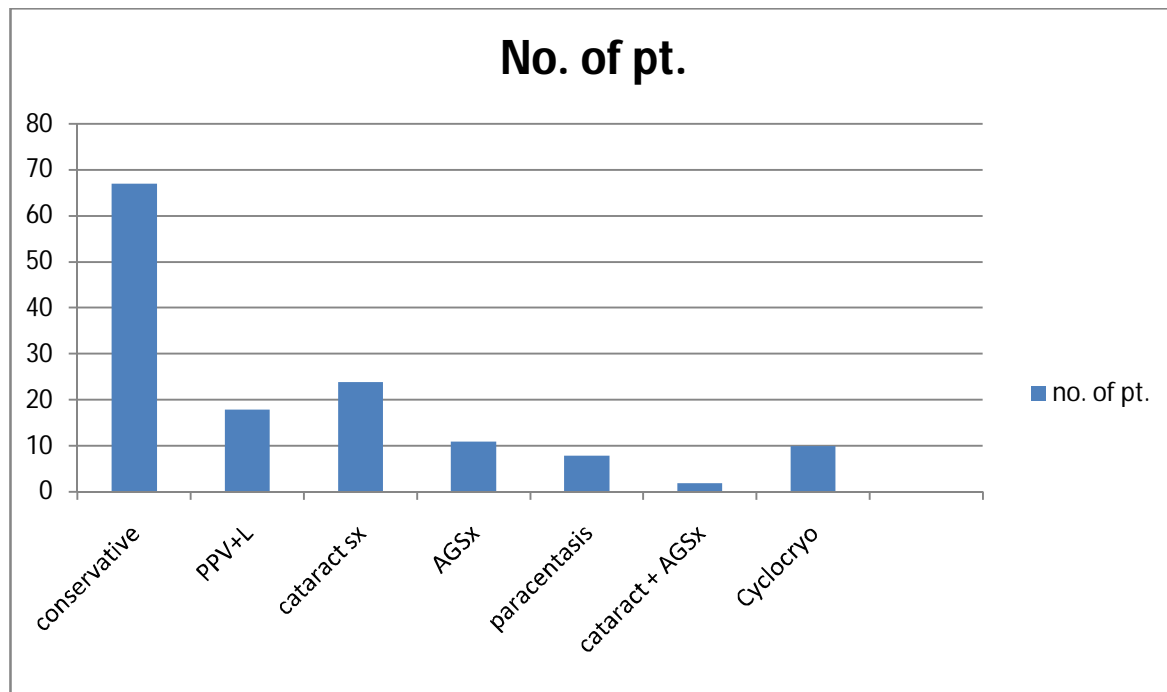
Table 2 Type of injury



Type of injury	No of patient
Open globe injury	17
Closed globe injury	123

Open globe injury was found in 17 (12.14%) patients and closed globe injury in 123 (87.85%) patients

Table 3 Treatment modality



Treatment modality	Conservative	PPV+L	CATARACT Sx	AGSx	Paracentesis	Cataract+AGSx	Cyclocryo
No of pt	67	18	24	11	8	2	10

Each subtype of patient was treated with different treatment of modality Initially in all groups treatment started with conservative therapy But it might be changed according to cause of raised IOPOut of 140 patients, 67 (47.85%) were treated with conservative treatment 18 (12.85%) patients required PPV + L 24(17.14%) and 11 (7.85%) required cataract and anti glaucoma surgery respectively Paracentesis was carried out in 8 (5.71%) patients 2 (1.42%) and 10 (7.14%) were treated with cataract with AGS(antiglaucoma surgery) and cyclocryotherapy respectively

40 DISCUSSION

The inconsistent relationship of glaucomatous optic neuropathy with ocular hypertension has provoked hypotheses and studies on anatomic structure, eye development, nerve compression trauma, optic nerve blood flow, excitatory neurotransmitter, trophic factor, retinal ganglion cell/axon degeneration, glial support cell, immune, and aging mechanisms of neuron loss. But lowering intraocular pressure is the only proven means to slow or halt disease progression in studies of those at high risk of developing glaucoma (Ocular Hypertension Treatment Study OHTS) 5, those with early to moderate glaucoma (Collaborative Initial Glaucoma Treatment Study and early Manifest Glaucoma Trial EMGT) (10,11) and those with more advanced glaucoma (Collaborative Initial Normal-Tension Glaucoma Study 9,10 and Advanced Glaucoma Intervention Study AGIS)(14). These studies confirm that a pathophysiological basis for glaucoma is elevated intraocular pressure. If the condition is detected early enough it is possible to arrest the development or slow the progression by medical and surgical means(13).

Regarding the injury causes and circumstances it becomes clear that the majority of open globe injuries can be prevented. Supervision plays a crucial role in the prevention of eye injuries. Besides, parents could be instructed how to arrange the domestic surroundings in a childproof manner. Furniture with round corners is the better option for households with kids. Plants with prickles are not suitable for gardens in which children play. Games with projectiles (darts, bow and arrow) are frequent injury causes and if parents take the time to teach their children a variety of other games, it is less probable that they get up to the dangerous games, even when they are unsupervised. The interaction with animals requires special instruction(1,2,3).

50 CONCLUSION

This study determines the incidence of developing glaucoma after ocular trauma has determined several independently predictive factors such as hyphema, pupillary block, angle recession, presence of optic atrophy associated with development of PTG. Incidence more found in closed globe injury in which blunt trauma was predominant. Age group 31-40 was the most commonly affected, may be because of the working age group. Most of the patients were presented within 2 month of injury due to inability to see properly, pain and headache. Structural abnormality included lens injury followed by angle, corneal, optic nerve and vitreal injury. Each subtype of PTG was treated according to structural damage

STUDY LIMITATIONS

1small sample size

2long term follow up required

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ORIGINAL ARTICLE

23

ACCOMMODATIVE STATUS IN AMBLYOPES AND ITS EFFECT ON QUALITY OF LIFE

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Abstract

PURPOSE: The purpose of this study is to assess accommodative status in amblyopic subjects and its effect on quality of life

METHOD: A cross sectional non randomized study was performed at tertiary eye care hospital. Study was carried out in five stages starting from collection of demographic data, anterior and posterior segment evaluation followed by cycloplegic refraction of selected amblyopes. Lag of accommodation was measured post adaptation, via monocular estimation method (MEM). ASQE questionnaire was filled up by amblyopic subjects or their parents. In the final stage control subjects were evaluated in similar manner, their lag of accommodation was measured and ASQE questionnaire was filled up by subjects. Statistical analysis was performed using SPSS software.

RESULTS: Total of 91 subjects diagnosed with amblyopia was enrolled in study between 3 to 21 years of age with a mean value of 96 ± 4 years. Best corrected Visual acuity in amblyopic eye was in range of 177 to 030 log unit, while in better or good eye visual acuity was in range of 000 to 017. Mean value of MEM retinoscopy for amblyopes was found out to be lag of OD: $+132 \pm 059$ D and OS: $+134 \pm 057$ D, while that of control subjects was OD: $+071 \pm 021$ D, OS: 069 ± 024 D. Paired t-test compares lag of accommodation obtained in amblyopes to that of normal subjects. p value was found to be significant i.e. less than 0001. For amblyopes R^2 value

came to be 26% while on the other hand R^2 value for controls was 87% ASQE scoring for amblyopes was between range of 29 to 49 ,score for near work domain was 951 (mean of 158) for amblyopes , 678 (mean of 113)for controls

CONCLUSION: Accommodative response in amblyopic subjects was affected as well as their quality of life as compared to controls Lag of accommodation directly correlates with the near domain of quality of life score in amblyopes

Introduction: Amblyopia is a preventable and a treatable condition especially if detected early In amblyopes, apart from visual acuity other vital parameters like contrast sensitivity, stereopsis, accommodation are also affected Due to time constraint all parameters cannot be assed in screening camps and/or clinic but measuring lag of accommodation would be a faster and of greater importance At times in spite of a significant improvement in visual acuity improper accommodative response may develop considerable problems Difficulty or faulty accommodative system can hamper many activities related to near work and hence affect quality of life of subjects The purpose of this study was to assess accommodative status in amblyopic subjects and whether it affects the near domain of quality of life

Method: The study was carried out at tertiary eye care centre in Gujarat All subjects referred to outpatient department were included in analytical phase After collection of demographic data, detailed history taking was performed In the first stage of clinical examination, slit lamp examination was carried out for evaluating any anterior segment anomaly Detailed fundus evaluation with binocular indirect ophthalmoscopy (BIO) was done to rule out any posterior segment abnormality Later these subjects were referred to binocular vision and orthoptic unit, where objective and subjective refraction of all subjects was performed Subjects whose best corrected visual acuity was less than normal were selected as subjects for detailed evaluation

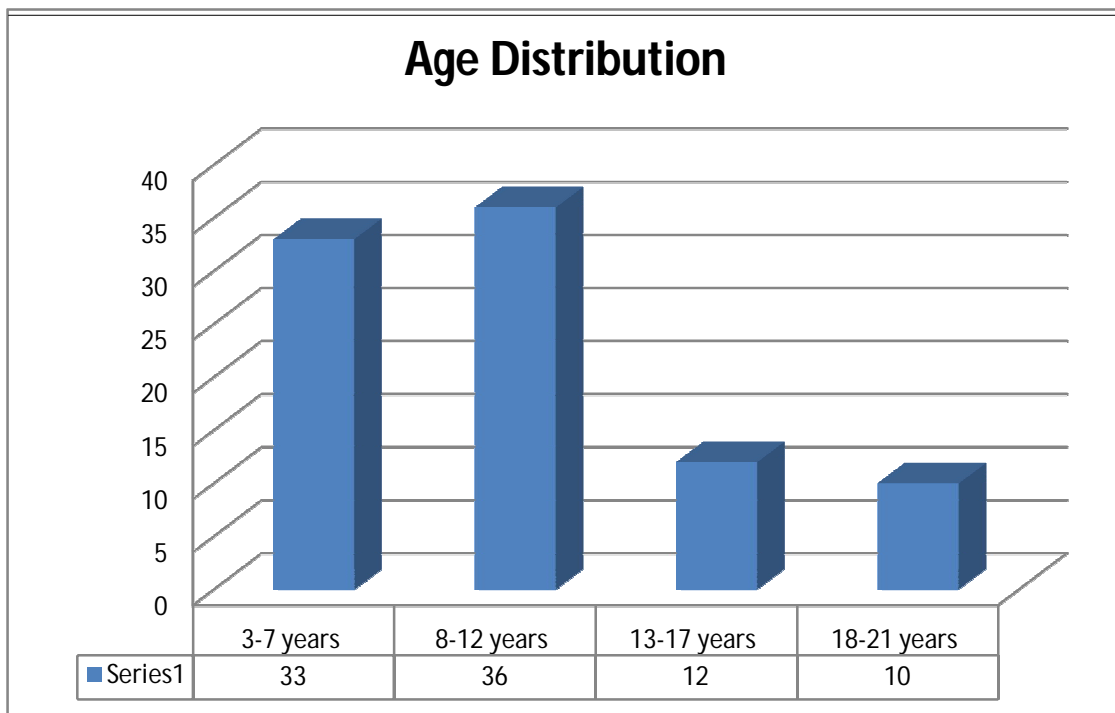
In the second phase selected amblyopic subjects were further evaluated Atropine was used to perform cycloplegic refraction Glasses with full correction was prescribed followed by adaptation period of one month Number of occlusion hours was decided as per the Pediatric Eye Disease Investigator group guidelines¹ Subjects who were on amblyopic therapy for at least more than 1 month were included in the study Accommodative response was evaluated using dynamic retinoscopy technique MEM(monocular estimation method)

Functional amblyopic patient age 7 to 21 years, amblyopia associated with strabismus, anisometropia or both, visual acuity in the amblyopic eye poorer than 030 in logMAR inclusive, visual acuity in the sound eye 030 or better were included as subject Ametropic subject with no anterior and/or posterior segment anomaly with best corrected visual acuity 000 to 017 monocularly in logMAR were considered as controls Subjects with nystagmus, any anterior or posterior segment pathology and visual deprivation amblyopia were excluded

Amblyopia and Strabismus Questionnaire questionnaire² was translated to Gujarati language Translated questionnaire was validated by subject experts A brief description about ASQE questionnaire and its purpose was explained to both subjects and their parents, they were also provided assistance if there was any query with questions, for very young children parents were allowed to fill up questionnaire

Statistical analysis was performed using SPSS software; unpaired t test was performed to assess the significant differences between lag of accommodation in case ie amblyopic population and controls Regression coefficient was performed to assess the R square values, with an aim to study the relationship and dependency of age and accommodation

Results: Total of 91 subjects diagnosed with amblyopia was enrolled in study between 3 to 21 years of age with a mean value of 96 ± 4 years Best corrected Visual acuity in amblyopic eye was in range of 177 to 030 log units, while in better or good eye visual acuity was in range of 000 to 017



Graph 1: represents age distribution in four different groups 3-7 years (n=33), 8-12 years (n=36), 13-17 years (n=12), 18-21 years (n=10)

Chart 1 represents percentage distribution out of 91 patients 37 ie 41% patients were found to be orthotropic while 54 patients ie 59% had some form of deviation

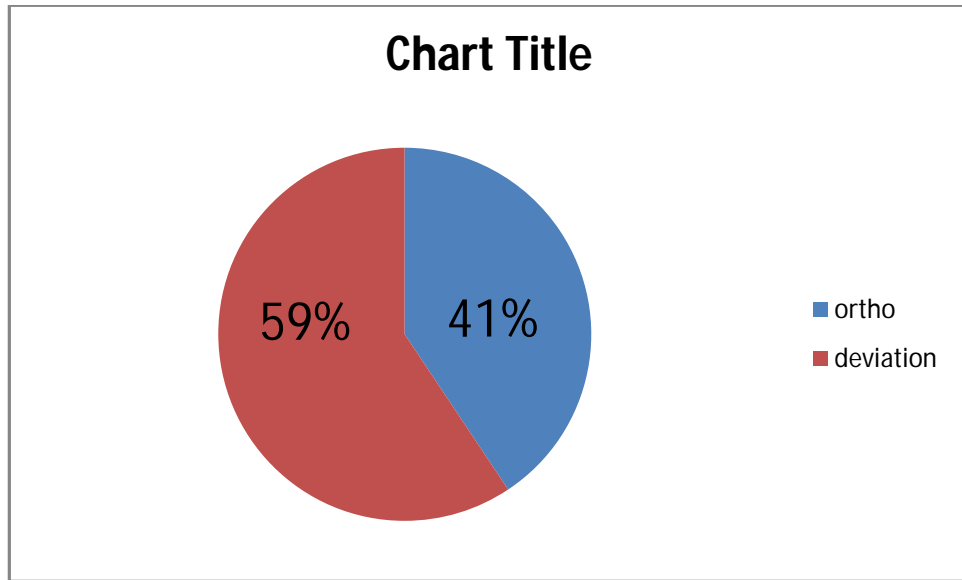
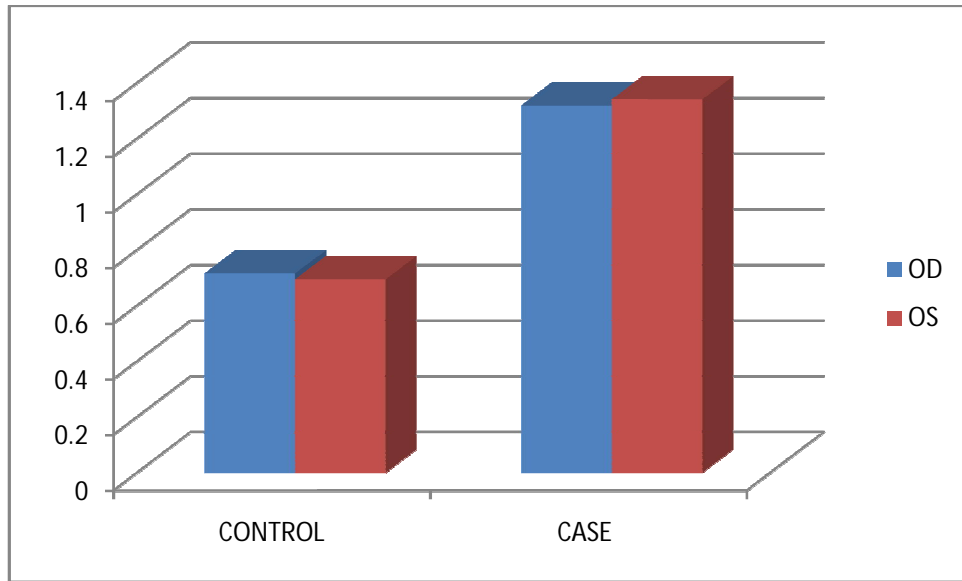


Chart 1: Distribution of subjects with and without deviation

Mean value of MEM retinoscopy for amblyopes was found out to be lag of OD :+132 ±059 D and OS +134 ±057 D , while that of control subjects was OD: +071 ±021 D , OS: 069±024 D



Graph 2: lag of accommodation values

Graph 2 :depicts comparative values of lag of accommodation seen in case- control groups, significant lag of accommodation is observed in amblyopes as compared to normal subjects

Paired Samples Test

	Paired Differences					t	df	Sig (2-tailed)
	Mean	Std Deviation	Std Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	70139	91772	15295	39088	101190	4586	35	000
Pair 2	60417	84383	14064	31865	88968	4296	35	000

Table 1: paired t test values for comparing lag of accommodation

Paired t-test was performed to compare lag of accommodation obtained in amblyopes with MEM values obtained from normal subjects p value was found to be less than 0001

Regression coefficient was performed with an aim to calculate correlation coefficient ie R^2 value, for both amblyopes and controls R^2 value establishes correlation between age of subjects and accommodative lag For amblyopes R^2 value came to be 26% while on the other hand R^2 value for controls was 87%

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	161 ^a	026	004	5159

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	930 ^a	87	-109	5122

Table 2: regression coefficient values

ASQE scoring for amblyopes was between range of 29 to 49 which shows overall quality of life is affected While the domain created, comprised of six questions that were associated with near work and hence accommodation, comparative scores of this domain was 951 (mean of 158) for amblyopes , 678 (mean of 113)

Discussion:

The objective of this study was to determine lag of accommodation in amblyopes and if there was an association between this lag and quality of life In the study carried out by Steven c Hokoda and Kenneth J Ciuffreda, monocular accommodative amplitudes were always reduced in amblyopic eyes using the minus lens and retinoscopy techniques⁶ In the current study dynamic retinoscopy was used to assess accommodative lag Hence to measure accommodation status accurately in paediatric population objective test that in MEM monocular estimation method was selected to evaluate lead/lag of accommodation Significant lag of accommodation was found in amblyopes as compared to normal subjects

Difficulty or faulty accommodative system can hamper many activities related to near work. From the result of our study, it can be seen that greater amount of lag affects near work related activities of subjects. As per the current lifestyle paediatric population is engaged with lot of near work related activities hence it was of keen interest to see if quality of life is affected due to detriment of one of the important system of visual system.

ASQE scoring for amblyopes was between range of 29 to 49, which suggests that overall quality of life is affected while the domain created, comprised of six questions that were associated with near work and hence accommodation, comparative scores of this domain was 951 (mean of 158) for amblyopes, 678 (mean of 113).

Looking at the scores obtained for this particular domain it can be concluded that near work is hindered and hence quality of life is affected. Discriminative validity was evaluated through comparison of the median scores of amblyopic subjects with those of the normal adults using the Mann-Whitney U test. Independent samples kruskal wallis test was used. The hypothesis laid was that, the lag of accommodation affects the quality of life. Results obtained are also similar. It retains the null hypothesis.

Conclusion: Accommodative response in amblyopic subjects was affected as compared to controls. Lag of accommodation directly correlates with quality of life score in amblyopes.

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Original article**24****ANALYSIS AND OUTCOMES OF PLATING VERSUS NAILING IN HUMERUS SHAFT FRACTURES: A PROSPECTIVE COMPARATIVE STUDY**

Dr Gaurav Parikh, Dr Pathik Vala, Dr Bhavik Dalal, Dr Ajay Devda

Primary Author-Dr Gaurav Parikh, Dr Corresponding Author-Dr Pathik Vala**Corresponding address: Dr Pathik Vala, Assistant Professor, AMC MET medical college, Ahmedabad, Gujarat email id-pathikvala88@gmailcom****Abstract**

There is a debate about the choice of operative intervention in humerus shaft fractures requiring surgical intervention. A prospective, comparative study of management of acute humeral shaft fractures treated by antegrade interlocking nail fixation and dynamic compression plating was undertaken over a period of three years. Twenty patients of interlocking nailing and sixteen patients of plating were included after considering the inclusion and exclusion criteria. Functional scoring criteria were used for postoperative assessment and the average follow-up period was one year. A higher rate of excellent and good results and a tendency for earlier union was seen with the plating group in our series.

Background

Fractures of the humeral shaft are commonly encountered by orthopaedic surgeons, accounting for approximately 3% of all fractures [20]. Treatment methods for these injuries continue to evolve as advances are made in both non-operative and operative management. It is generally agreed that most fractures of humeral shaft are treated best non-operatively, although there are indications for primary or secondary operative treatment in some situations [8, 18, 19]. The encouraging results that have been reported with recent advances in internal fixation techniques and instrumentation have led to an expansion of surgical indications for such fractures and a dilemma about the procedure of choice.

Materials and methods

A prospective, comparative study of management of acute humeral shaft fractures by antegrade interlocking nail fixation and dynamic compression plating was undertaken at our institution over a period of three years (November 2001 to November 2004). The average follow-up period was one year (range 10–24 months). An informed consent from patients and departmental permission were obtained according to local hospital regulations.

Forty-five patients with closed acute humeral shaft fracture requiring operative intervention were treated with either interlocking nailing or plating procedures. A randomisation attempt was made

by allocating each patient to either of the groups depending on the criteria of odd or even hospital number

The inclusion criteria were: (1) humeral shaft fractures which required operative intervention and were treated with interlocking or plating procedures, and (2) patients of age of 18 years or more

The exclusion criteria were: (1) the patient was aged less than 18 years, (2) pathological fractures, (3) segmental fractures, (iv) fractures within 4cm of proximal and distal end of humerus, and (5) patients who were lost to follow-up or at early stages of follow-up at the time of completion of the study (minimum follow up of six months required)

All patients had appropriate clinical and radiological assessment before a decision to offer surgical intervention was made All fractures were classified according to the AO classification Of the 25 patients treated by interlocking nail, three were at early stage follow-up and two were lost to follow-up at completion of the study Of the 20 patients treated by plating, two were in early follow-up and two lost to follow-up

After applying the inclusion and exclusion criteria, we included 20 patients of interlocking nailing and 16 patients of plating for final analysis in the study

An antegrade interlocking technique was used with an intramedullary nail (Russell-Taylor type) and care was taken to minimise damage of the rotator cuff during nail insertion A 35-mm or 45-mm dynamic compression plate was used in the plating group depending on the width of the bone with appropriate AO principles The choice of surgical approach (antero-lateral or posterior) for the plating group was left to the discretion of the operating surgeon

All patients were advised on immediate postoperative shoulder and elbow exercises and radiographs were taken at regular intervals during follow-up Rodriguez-Merchan criteria (1995) were used to compare the postoperative results of interlocking nailing and plating procedures at follow-up It was originally described for comparison of compression plating versus Hackethal nailing in closed humeral shaft fractures [16] The overall rating of excellent, good, fair and poor outcomes was based on scores of shoulder and elbow movements along with pain and disability after the procedure (see Table 1) In situations where any two different criteria fell into separate categories, the lower category was selected to classify the outcome

Table 1

Criteria for evaluating functional results

Rating	Elbow range of movement	Shoulder range of movement	Pain	Disability
Excellent	Extension 5°	Full range of movement	None	None

Rating	Elbow range of movement	Shoulder range of movement	Pain	Disability
	Flexion 130°			
Good	Extension 15°	<10% loss of total range of movement	Occasional	Minimum
	Flexion 120°			
Fair	Extension 30°	10–30% loss of total range of movement	With activity	Moderate
	Flexion 110°			
Poor	Extension 40°	>30% loss of total range of movement	Variable	Severe
	Flexion 90°			

Results

Demographics

The youngest in our series was 18 years old while the oldest was 63 years. The maximum incidence was seen in age groups 21–30 and 31–40 years (see Table 2). Males accounted for 77% and no obvious side predilection was noted. Road traffic accidents accounted for about 85% of the fractures followed by domestic and other causes. All of the fractures could be grouped as A3 and B2 of AO classification, and 64% involved the middle third of the humerus shaft. Associated medical problems included hypertension in three patients, ischemic heart disease in one patient and diabetes mellitus in two patients.

Table 2

Age incidence

Age group (y) Number of patients Percentage

11–20	1	27%
21–30	10	25%
31–40	15	41%
41–50	6	166%
51–60	3	83%
61–70	1	27%
71–80	0	0%

Indications

More than half of the patients in our study needed operative intervention due to failure of acceptable fracture reduction and alignment by closed methods (see Table 3)

Table 3

Indications for operative management

Indications	Number of patients	Percentage
Humeral fractures with multiple injuries	10	2777%
Fractures with unacceptable reduction	19	5277%
Secondary displacement of fracture reduction with non-operative treatment (before 6 weeks)	5	1388%
Open fractures	1	277%
Pathological fractures	0	0%
Humeral with ipsilateral forearm fractures	1	277%

Complications

Preoperative radial nerve palsy was seen in four cases (1111%) in our series. All cases of preoperative radial nerve palsy recovered completely following stabilisation, indicating a neuropraxia type of injury. The radial nerve was explored to check its integrity in only two cases where open reduction was done for plating. No postoperative radial nerve palsy was seen in the interlocking nailing group. Postoperative radial nerve palsy was seen in one case in the plating group (625%) (see Tables 4 and 5).

Table 4

Complications of interlocking nail

Complications	Number of patients	Percentage
Fissure/avulsion at insertion point	0	0%
Opening of splinter at fracture site	3	15%
Radial nerve palsy	0	0%
Infection	1	5%
Delayed union (>16 weeks)	10	50%
Nonunion with bending of nail	1	5%
Restriction of shoulder ROM	3	15%
Restriction of elbow ROM	0	0%

Table 5

Complications of plating

Complication	Number of patients	Percentage
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Complication	Number of patients	Percentage
Infection	2	12.5%
Radial nerve palsy	1	6.25%
Delayed union (>16 weeks)	4	25%
Nonunion	1	6.25%
Implant failure	0	0%

There was one case of deep infection each in the plating (6.25%) and interlocking groups (6.25%) Both were controlled by washout and continued use of antibiotics and eventually went on to union The interlocking nail patient with infection was left with severe adhesive capsulitis and an overall poor result

Time for union

Fifty percent of interlocking nail patients and 75% of plating patients showed evidence of union on or before 16 weeks (Tables 6 and 7, Graph 1) This difference was found to be statistically significant on Student's *t* test ($p < 0.05$) One case of interlocking nailing had nonunion (6.25%) with bending of a nail, which was treated by closed exchange nailing with reaming One case of nonunion plating (6.25%) was treated by bone grafting as a secondary procedure

Table 6

Time taken for union with interlocking nail

Time taken for union	Number of patients	Percentage
<16 weeks	10	50%
>16 weeks	10	50%

Table 7

Time taken for union with plating

Time taken for union	Number of patients	Percentage
<16 weeks	12	75%
>16 weeks	4	25%

Functional results

Thirteen out of 20 patients of the interlocking nail group had good to excellent results while 15 out of 16 patients of the plating group had similar results at the final follow-up for the study. This difference was found to be statistically significant on Student's *t* test ($p < 0.05$) (see Tables 8 and 9, Figs 11 and 12).

Table 8

Results of interlocking nail (Rodríguez–Merchan criteria)

Result	Number of patients	Percentage
Excellent	4	20%
Good	9	45%
Fair	5	25%
Poor	2	10%

Table 9

Results of plating (Rodriguez–Merchan criteria)

Result	Number of patients	Percentage
Excellent	4	25%
Good	11	68.75%
Fair	0	0%
Poor	1	6.25%

Results of interlocking nail versus plating



Fig 1

Radiograph of good results with interlocking nailing



Fig 2

a Radiograph of poor results with bending of interlocking nail **b** Radiograph after exchange nailing

Discussion

The common indications for operative treatment in our series were failure to achieve acceptable reduction by closed methods and patients with multiple injuries. Accepted indications for surgical management of humeral shaft fractures are (i) unsatisfactory alignment or reduction by non-operative methods, (ii) associated injuries in the extremity requiring early mobilisation, (iii) segmental fracture, (iv) pathological fracture, (v) fracture associated with major vascular injuries, (vi) humeral fractures with radial nerve palsy developing after manipulation or application of cast, (vii) polytrauma and (viii) floating elbow [2, 8, 9, 11, 19]

Humeral shaft fractures have been reported to be more common in males with a peak incidence in the third decade [20]. Road traffic accident was a common cause for such fractures in our and other similar studies [20]. A variation in epidemiological features of humeral shaft fractures is noted with different geographical locations [11, 19, 20].

While there are several methods of operative intervention for humerus shaft fractures, the internal fixation methods can be broadly grouped as plating or intramedullary techniques. Interlocking nailing is preferable in comminuted, segmental and pathological fractures while plating may be the preferred option where radial nerve exploration is contemplated [5, 13, 14]. Conventional plating techniques involve an extensive surgical approach for open reduction of fracture. But encouraging results from minimally invasive plating methods have been reported recently [1, 10, 12]. The external fixation technique is less popular in treatment of humeral shaft fractures and may be used in open injuries [19].

Infection, nonunion and radial nerve palsy are general concerns suggested in the plating group [4, 9, 16] But in a published meta-analysis, results of plate fixation from pooled data did not show higher risks of nonunion, infection, or radial nerve palsy [3] Restriction of shoulder movements and risk of delayed union have been suggested as concerns with the intramedullary techniques [3, 4, 7, 9, 13, 16] Impairment of shoulder function with the antegrade interlocking nails could be because of impingement due to proximal migration of nail, rotator cuff violation, adhesive capsulitis or due to an unexplained cause [6, 7, 15, 17] This problem can be potentially minimised by using a retrograde technique but carries a risk of elbow movement restriction and fracture at the insertion point [4, 9, 15] Some report increased incidence of elbow stiffness with the plating group [7]

The higher rate of excellent and good results with the plating group patients seen in our series was also cited in many other reports [13, 15] But another series has suggested that both groups had predictable results and neither of them is markedly superior [7] In a recent study, no difference between the two groups in terms of the rate of union and functional outcome but a shorter union time with interlocking was suggested [6] This was in contrast to our study which reflects earlier union time with the plating procedure

In conclusion, no single treatment option is superior in all circumstances for a particular fracture and each case has to be individualised Plating has been shown to have better overall results compared to the interlocking nails in treatment of closed humeral shaft fractures A tendency for earlier union is seen with the plating group

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26

Original article

“THE EFFICACY OF DEXAMETHASONE ADDED AS AN ADJUVANT TO LOCAL ANESTHETIC IN BRACHIAL PLEXUS BLOCK FOR POST OPERATIVE ANALGESIA”

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ABSTRACT

Introduction: Regional anesthesia techniques like brachial plexus block for upper limb surgeries provide excellent anesthesia and post operative analgesia Local anesthetic adjuvants like dexamethasone prolong the duration of analgesia with less side effects

Aims and objectives:

- To observe the onset of sensory and motor blockade
- To observe duration of motor blockade
- To observe duration analgesia
- To observe perioperative hemodynamic stability

- To observe perioperative adverse effects and complications

Materials and methods: supraclavicular block was given to two Group of patients using ultrasonography guidance Group S: Patients who received 0.5% bupivacaine 23 ml plus 0.9% normal saline 2 ml making a total volume of 25 ml were included in Group S

Group D: Patients who received 0.5% bupivacaine 23 ml plus dexamethasone 8 mg (2 ml) making a total volume of 25 ml were included in Group D

Sensory block; motor block; hemodynamic response; post op analgesia was observed

Conclusion: In conclusion , adding Dexamethasone (8mg) as an adjuvant to 0.5% bupivacaine in ultrasound guided supraclavicular brachial plexus block results in faster onset of sensory and motor block with the significant prolongation of duration of motor block and post operative analgesia without any side effects

Keywords : supraclavicular block, ultrasound guided, bupivacaine, dexamethasone

INTRODUCTION

Postoperative pain is a combination of unpleasant sensory, emotional and mental experience precipitated by the surgical trauma Postoperative pain is associated with sleep disturbance, cardiovascular side effects, increased oxygen consumption It also delay mobilization and promotes thromboembolism Thus good postoperative pain management is a mainstay of good perioperative care Regional anaesthesia techniques provide important advantages compared with general anaesthesia and systemic analgesia, including excellent pain control and reduced side-

effects For upper extremities surgery regional anaesthesia technique in the form of brachial plexus block is the technique of choice for anaesthesia and postoperative analgesia

The use of brachial plexus block as the primary anaesthetic technique decreases immediate postoperative pain, provide better analgesia and reduce opioid consumption

Single shot local anesthetics have short duration of action Local anaesthetic adjuvants act by several mechanisms They may cause local vasoconstriction limiting systemic uptake or they may have direct effects on peripheral nerves In addition, they may also act systemically by anti-inflammatory effects

It is widely believed that dexamethasone improves the quality and duration of peripheral nerve block over local anaesthetic alone This is thought to be mediated by attenuating the release of inflammatory mediators, reducing ectopic neuronal discharge, and inhibiting potassium channel-mediated discharge of nociceptive c-fibres

AIMS OF STUDY

Present study was designed to evaluate the efficacy of dexamethasone (8 mg) as an adjuvant to bupivacaine (0.5%) in USG guided supraclavicular brachial plexus block for postoperative analgesia in surgeries of upper extremities with the following objectives:

- To observe the onset of sensory and motor blockade
- To observe duration of motor blockade
- To observe duration analgesia
- To observe perioperative hemodynamic stability
- To observe perioperative adverse effects and complications

MATERIAL AND METHOD

This study was conducted in department of Anaesthesiology between September 2015 and September 2017 After taking thorough history and pre-operative assessment, 60 patients who were satisfying the inclusion criteria were enrolled into the study

The Inclusion Criteria were:

Patients aged between 18 and 60 years

Patients with American Society of Anesthesiologists I & II physical status

Patients who were planned to undergo below shoulder upper limb surgeries (both elective and emergency) under supraclavicular brachial plexus block

The Exclusion Criteria were:

- Patients who refused to give consent
- Pregnant women,
- History of local anesthetics allergy
- Peptic ulcer disease
- Diabetes mellitus
- Peripheral neuropathy

Patients with contraindications for brachial plexus block like

- bleeding disorder,
- Patients on anticoagulants,
- Severe respiratory disease,
- neurological deficit involving brachial plexus

- local infection at the injection site

After explaining the procedure properly in their native language, a written informed consent was taken from all the patients of the study. Each patient was explained in detail regarding the procedure of anaesthesia and 0-10 point VISUAL ANALOGUE SCALE (VAS) on a sheet of paper where score of 0 labelled as no pain and 10 as worst possible pain. In the pre-operative room, intravenous access was secured with 18-gauge cannula on the contralateral hand and baseline parameters such as heart rate, systolic & diastolic blood pressure, oxygen saturation was observed and recorded.

Anaesthetic technique:

The supraclavicular brachial plexus block was carried out after thorough explanation of the procedure to the patient. In the operation theater, monitors were connected like pulse oximetry, ECG and NIBP. Supraclavicular brachial plexus block was performed under aseptic precautions with the patient in the supine position, with the patient's head turned away from the side to be blocked. The arm to be anaesthetized is adducted and the hand extended along the side towards the ipsilateral knee as far as possible. We used Ultrasound machine with linear transducer for localization of the brachial plexus. The skin is disinfected and the transducer is positioned in the transverse plane immediately proximal to the clavicle, slightly posterior to its midpoint. The transducer is tilted caudally, to obtain a cross-sectional view of the subclavian artery. The brachial plexus is seen as a collection of hypoechoic oval structures posterior and superficial to the artery. The 23 gauge 15 inch hypodermic needle was then inserted in plane toward the brachial plexus, in a lateral to medial direction. Upon visualising needle path to the desired

location, the study local anesthetic mixture was injected after negative aspiration for blood and air. End of injection was considered as time 0.

Patients were divided into two groups according to the local anesthetic mixture they received.

Group S: Patients who received 0.5% bupivacaine 23 ml plus 0.9% normal saline 2 ml making a total volume of 25 ml were included in Group S.

Group D: Patients who received 0.5% bupivacaine 23 ml plus dexamethasone 8 mg (2 ml) making a total volume of 25 ml were included in Group D.

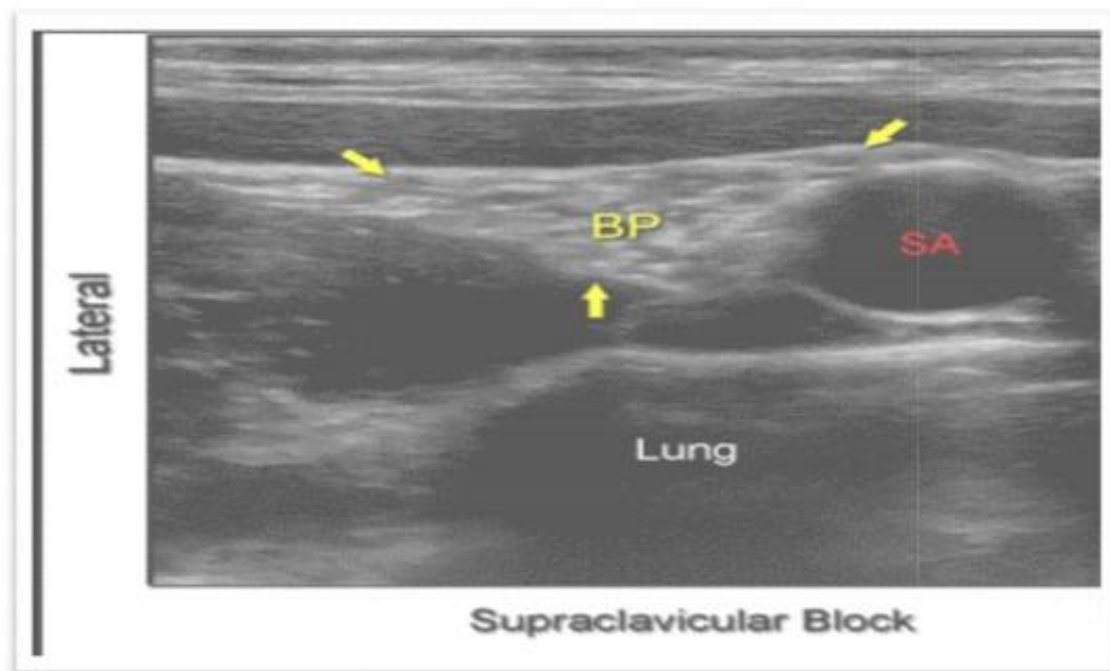


Figure 2 : Supraclavicular brachial plexus; transducer position and needle insertion

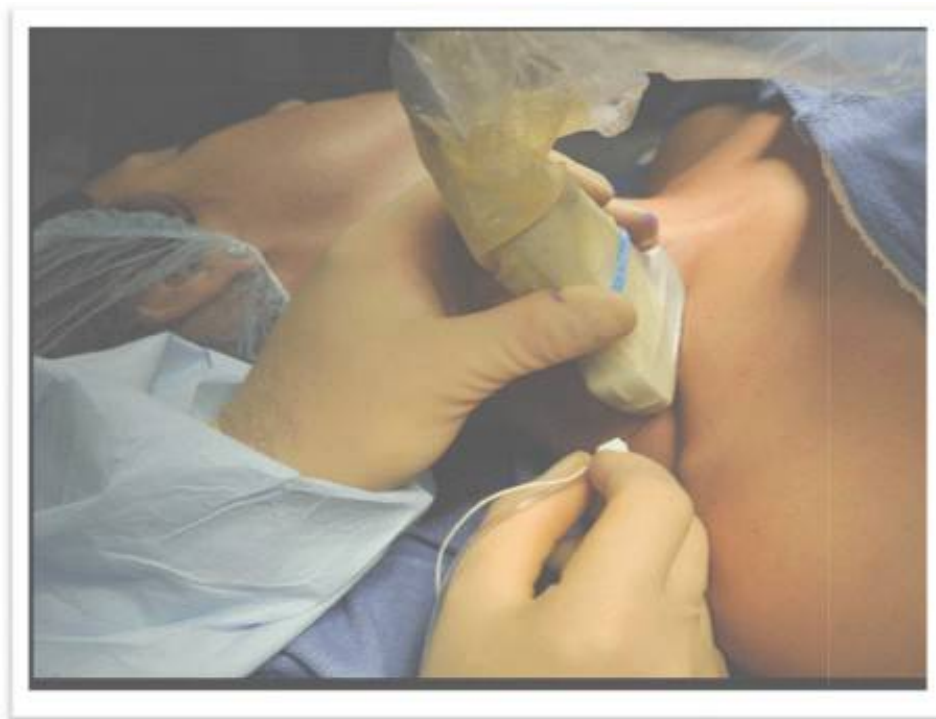


Figure 3: Ultrasound image of the brachial plexus (BP) assuming an oval shape and circled by the tissue sheath (yellow arrows)

During the conduct of block and thereafter, the patients were observed for any complications and toxicity of the drugs injected After injection of the local anaesthetic, the following parameters were studied:

Sensory block characteristic in each of the major peripheral nerve distribution (ulnar, radial, medial and musculocutaneous) was assessed by pinprick using the blunt end of a 23-gauge needle

Sensory block was graded according to the following scale: Grade 0 = no block (normal sensation)

Grade 1 = partial block (decreased sensation) Grade 2 = complete block (no sensation)

Onset of sensory blockage was defined as the time from the end of injection to grade 1 sensory blockage

Peak(complete) of sensory blockage was defined as the time from the end of injection to grade 2 sensory blockage

Motor block characteristic was measured by assessing the following motor functions: flexion at the elbow (musculocutaneous nerve), extension of the elbow and the wrist (radial nerve), opposition of the thumb and index finger (median nerve), and opposition of the thumb and small finger (ulnar nerve) Motor block was graded according to the following scale:

Grade 0 = no block (full muscle activity)

Grade 1 = partial block (decreased muscle activity)

Grade 2 = complete block (no muscle activity)

Onset of motor blockage was defined as the time from the end of injection to grade 1 motor blockage

Peak (complete) of motor blockage was defined as the time from the end of injection to grade 2 motor blockage

Only patients with complete motor and sensory block were included in the study

Hemodynamic vitals (Pulse rate, blood pressure, SpO₂) were recorded at 1,5,10, 15, 30, 45, 60, 90, 120, 150 mins till the end of surgery from the end of injection of local anaesthetics

Intraoperative complications like hypotension (Fall in systolic blood pressure >30% from the baseline), Bradycardia (Heart rate < 60/min), nausea and vomiting, hoarsness of voice were observed

Total duration of each case was noted

Post-operative follow-up was carried out in the recovery and post-operative ward Hemodynamic vitals (Pulse rate, blood pressure, SpO₂) and the duration of analgesia according to 0-10 visual analogue score (VAS) for pain were noted till 24 hrs Motor block was assessed by asking the patients to move their fingers and to flex the elbow When the patients began to experience pain (VAS \geq 4), it was considered that analgesic action of the drugs was terminated, and rescue analgesic in the form of injection diclofenac 1-15 mg/kg iv was given

Duration of motor block was defined as the time elapse between the end of drug injection to move their fingers and elbow flexion

Duration of analgesia was defined as time elapse between the end of injection to when patient experiencing the pain of VAS \geq 4 severity

Possible complications of brachial plexus block such as pneumothorax, hematoma, signs and symptoms for local anesthetic toxicity was looked for and treated, if any

Results were expressed as Mean \pm SD (standard deviation) Statistical analysis was performed using z test for intergroup comparison $p < 005$ was considered as statistically significant

OBSERVATIONS AND RESULTS

After studying 60 cases, observation and results are summarized in tabulated form and described below Each group contains 30 patients

TABLE 1**Demographic Data**

Parameters	Group S	Group D	P value
Age (yrs)	3653±1122	3833± 1189	P>005
Weight(kg)	6583±300	6686±474	P>005
Sex (male/female)	22/08	22/08	Not significant
ASA grade (I/II)	23/7	23/07	Not significant

Table 1 shows demographic data of two groups

Patients in Group S and Group D were comparable with the respect to the patients age, weight, sex ,ASA status and duration of surgery

TABLE 2**Duration of Surgery**

	Group S	Group D	P value
Duration of surgery(min)	106±2692	110±2741	P >005

Table 2 shows the mean duration of surgery which are comparable between both Groups

TABLE 3**Onset of sensory and motor block**

Parameters	Group S	Group D	P value
Onset of sensory block(min)	433±088	373±090	P <005
Onset of motor block(min)	603±071	513±097	P<005

Table 3 shows mean time of onset of sensory and motor block

The onset of sensory and motor blockade were significantly more rapid in the Group D (373±090 vs 433±088 min and 513±097 vs 603±071 min, respectively) than in the Group S (P<005)

TABLE 4**Peak of sensory and motor block**

Parameters	Group S	Group D	P value
Peak of sensory block(min)	1196±080	963±096	P <005
Peak of motor block(min)	1613±130	129±112	P<005

Table 4 shows mean time to achieve peak (complete) sensory and motor block

The time to achieve peak (complete) sensory and motor blockade were significantly more rapid in the Group D (963 ± 096 vs 1196 ± 080) min and 129 ± 112 vs 1613 ± 130 min, respectively) than in the Group S ($P<005$)

TABLE 5

Duration of motor block and time to first rescue analgesia

Parameters	Group S	Group D	P value
Duration of motor block(min)	48216 ± 3423	61983 ± 3294	$P <005$
Time to first rescue analgesia(min)	60966 ± 3552	106283 ± 5695	$P<005$

Table 5 shows mean time of duration of motor block and mean time to first rescue analgesia

The duration of motor blockade and time to first rescue analgesia were significantly longer in the Group D (61983 ± 3294 vs 48216 ± 3423 min and 106283 ± 5695 vs 60966 ± 3552 min, respectively) than in the Group S ($P<005$)

TABLE 6
PERIOPERATIVE PULSE RATE (per min)

TIME	GROUP S	GROUP D	P- VALUE
PRE OPERATIVE	897±566	908±507	P>005
AFTER BLOCK			
1 MIN	888±558	8993±511	P > 005
5 MIN	8626±540	8810±480	P > 005
10 MIN	8393±519	853±417	P > 005
15 MIN	8183±492	827±370	P > 005
30 MIN	796±472	8046±383	P > 005
45 MIN	7906±475	8053±415	P > 005
60 MIN	7956±484	8073±526	P > 005
90 MIN	7876±451	797±546	P > 005
120 MIN	8116±544	8013±445	P > 005
150 MIN	8083±529	8106±445	P > 005
180 MIN	7973±571	787±447	P > 005
240 MIN	803±401	817±476	P > 005
300 MIN	8023±525	829±458	P > 005
360 MIN	8226±409	826±586	P > 005
420 MIN	8213±497	8113±615	P > 005
480 MIN	8313±484	8426±700	P > 005
600 MIN	8336±530	8286±644	P > 005
720 MIN	8466±679	8446±624	P > 005

840 MIN	8566±759	8413±620	P > 005
960 MIN	8553±659	869±495	P > 005
1080 MIN	8613±511	8713±534	P > 005
1200 MIN	8633±702	8506±510	P > 005
1440 MIN	852±795	8413±561	P > 005

Table 6 shows mean pulse rate of patients in perioperative period

There was no significant difference in mean pulse rate of patients of both the groups (P>005) and pulse rate were stable and comparable between two groups

MEAN PULSE RATE

TABLE 7

PERI OPERATIVE SYSTOLIC BLOOD PRESSURE(mmHg)

TIME	GROUP S	GROUP D	P- VALUE
PRE OPERATIVE	12707±925	1263±108	P>005
AFTER BLOCK			
1 MIN	12603±908	1251±1023	P > 005
5 MIN	12413±864	12343±1064	P > 005
10 MIN	12314±780	12243±1047	P > 005
15 MIN	12177±748	1204±770	P > 005
30 MIN	1209±801	11937±774	P > 005
45 MIN	12127±734	11903±699	P > 005
60 MIN	11787±610	11827±581	P > 005

90 MIN	11787±619	1199±654	P > 005
120 MIN	11847±426	1193±552	P > 005
150 MIN	11917±441	11987±663	P > 005
180 MIN	12060±580	12313±638	P > 005
240 MIN	12107±477	11993±505	P > 005
300 MIN	1194±432	11943±409	P > 005
360 MIN	1195±479	12113±459	P > 005
420 MIN	1204±779	1209±352	P > 005
480 MIN	1188±734	11883±623	P > 005
600 MIN	12133±739	11957±729	P > 005
720 MIN	1188±697	11927±592	P > 005
840 MIN	120±619	12107±762	P > 005
960 MIN	1186±761	12007±817	P > 005
1080 MIN	1208±876	12053±550	P > 005
1200 MIN	12087±801	12393±683	P > 005
1440 MIN	12067±805	12493±736	P > 005

Table 7 shows mean systolic blood pressure of patients in perioperative period There was no significant difference in mean systolic blood pressure of patients of both the groups(P>005) and systolic blood pressure were stable and comparable between two groups

MEAN SYSTOLIC BLOOD PRESSURE**TABLE 8****PERIOPERATIVE DIASTOLIC BLOOD PRESSURE(mmHg)**

TIME	GROUP S	GROUP D	P- VALUE
PRE OPERATIVE	8113±438	802±546	
AFTER BLOCK			
1 MIN	801±375	7856±386	P > 005
5 MIN	7806±362	7793±613	P > 005
10 MIN	7803±319	7716±463	P > 005
15 MIN	7734±307	7676±435	P > 005
30 MIN	7773±517	789±370	P > 005
45 MIN	7773±569	7873±421	P > 005
60 MIN	7806±515	7923±402	P > 005
90 MIN	791±626	8096±372	P > 005
120 MIN	794±502	8056±369	P > 005
150 MIN	8013±369	8113±394	P > 005
180 MIN	8133±397	8056±340	P > 005
240 MIN	7993±368	8106±429	P > 005
300 MIN	7993±380	8013±366	P > 005
360 MIN	7826±392	792±334	P > 005
420 MIN	7913±438	8043±449	P > 005
480 MIN	7737±444	7883±396	P > 005
600 MIN	7806±496	7936±368	P > 005

720 MIN	7917±379	8023±353	P > 005
840 MIN	801±297	8106±387	P > 005
960 MIN	7931±379	7863±380	P > 005
1080 MIN	7893±557	7976±347	P > 005
1200 MIN	8017±448	7953±353	P > 005
1440 MIN	7926±358	8076±447	P > 005

Table 8 shows mean Diastolic blood pressure of patients in perioperative period

There was no significant difference in mean Diastolic blood pressure of patients of both the groups (P>005) and Diastolic blood pressure were stable and comparable between two groups

MEAN DIASTOLIC BLOOD PRESSURE

TABLE 9

PERIOPERATIVE COMPLICATIONS

COMPLICATION	GROUP S	GROUP D	INFERENCE
NAUSEA	0	0	NS
VOMITING	0	0	NS
HYPOTENSION	0	0	NS
BRADYCARDIA	0	0	NS
LOCAL HAEMATOMA	0	0	NS
PNEUMOTHORAX	0	0	NS
SURGICAL EMPHYSEMA	0	0	NS

NERVE INJURY	0	0	NS
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Table 9 shows the incidence of perioperative complications in both group patients

There was no major perioperative complications in either group of patients

DISCUSSION

Brachial plexus block is a popular and widely employed peripheral nerve block technique for perioperative anaesthesia and analgesia for surgeries of upper extremity and supraclavicular approach is the easiest and most consistent method for surgeries below shoulder joint

For below shoulder surgeries of upper extremities supraclavicular brachial plexus block alone as a sole anesthetic technique provides good operative condition but have shorter duration of post operative analgesia

Steroids have powerful anti inflammatory as well as analgesic property Dexamethasone is a very potent and highly selective glucocorticoid Various studies have been done using dexamethasone (8 mg) as an adjuvant to local anesthetic mixture in brachial plexus block resulting in variable effect on onset but prolonged duration of analgesia and motor block

The safety profile of dexamethasone is promising and no trail has reported neurotoxicity attributable to it Corticosteroids have been used safely in epidural space for the treatment of radicular pain arising from nerve root irritation 33 and dexamethasone specifically has been studied as an adjuvant to epidural local anesthetic²⁵ and no nuerological risk found

In above context the present study was performed to evaluate the efficacy of dexamethasone (8mg) used as an adjuvant to 05% bupivacaine in USG guided supraclavicular brachial plexus block for postoperative analgesia

Demographic data:

Table 1 shows demographic data in terms of age, weight, sex, ASA status of the patients which were comparable in both the groups

Duration of surgery:

Table 2 shows the mean duration of surgery

In our study the mean duration of surgery in Group S was 106 ± 2692 mins and 110 ± 2741 min in group D which was statistically insignificant ($P > 0.05$)

Characteristic of sensory and motor block :**Characteristic of onset of sensory and motor block:**

Table 3 shows the characteristic of onset of sensory and motor block

In our study, the mean time of onset of sensory block in group S was 433 ± 088 min and group D was 373 ± 090 min The mean time of onset of motor block in group S was 603 ± 071 min and group D was 513 ± 097 min The onset of sensory block and motor block was significantly faster in dexamethasone group compared with saline group ($p < 0.05$)

MP Golwala et al¹⁸ in their study also reported the mean time of onset of sensory block in control group was 27566 ± 3032 sec and in dexamethasone receiving group was 19633 ± 2645 sec The mean time of Onset of motor block in control group was 32666 ± 2720 sec and in dexamethasone receiving group was 22566 ± 2686 sec

Both time of onset of sensory and motor block was faster in dexamethasone group compared with saline group and difference was statistically significant ($p < 0.05$)

Yadav RK et al⁴⁵ in their study reported that the time of onset of sensory block was faster in dexamethasone group (38+18 min) than control group (46+11 min) Similarly time onset of motor block was also faster in dexamethasone group (60+21 min) than control group (77+20 min) So, time to onset of sensory and motor block were significantly faster in dexamethasone group as compare to control group These were statistically significant

Shrestha BR, et al³⁹ reported onset of action of 10-30 min (mean 1815±425 min) in local anaesthetic group and 10-20 min (mean 1415±210 min) in local anaesthetic + dexamethasone group and found it statistically significant ($p < 0.05$)

Characteristic of peak of sensory and motor block :

Table 4 shows the characteristics of peak of sensory and motor block

In our study mean time to achieve peak of sensory block in group S was 1196±080 min and group D was 963±096 min The mean time to achieve Peak of motor block in group S was 1613±130 min and group D was 129±112 min The time to achieve peak sensory block and motor block was significantly faster in dexamethasone group compared with saline group ($p < 0.05$)

MP Golwala et al¹⁸ in their study reported mean peak effect time of sensory and motor block was 70833 ± 5058 sec and 76733 ± 4726 sec in control group and 54433 ± 4768 sec and 65133 ± 3875 sec in dexamethasone receiving group respectively The mean time of peak of sensory block

and motor block was significantly faster in dexamethasone group and statistically significant ($p < 0.05$) like our study

Prashant A Birader et al⁹ in their study reported mean time of peak onset of sensory and motor blockade were significantly more rapid in the dexamethasone group (134 ± 28 vs 16 ± 23 min and 160 ± 27 vs 187 ± 28 min, respectively) than in the control group which was statistically significant ($P < 0.0001$)

Yadav RK et al⁴⁵ in their study reported the time to complete sensory and motor block was significantly faster in dexamethasone group as compared to control group

Results of our study are comparable to above studies

Characteristic of Duration of motor block and time of 1st rescue analgesia:

In our study, mean time of duration of motor block and mean time for 1st rescue analgesia in group S was 48246 ± 3423 min & 60966 ± 3552 min and in group D was 61983 ± 3294 min & 106283 ± 5695 min, respectively. The mean time of duration of motor block and mean time of first rescue analgesia was longer in dexamethasone group as compared to saline group which were statistically significant ($p < 0.05$)

Our results demonstrate that dexamethasone significantly prolongs analgesic effect of plain bupivacaine (0.5%) used as a single injection in supraclavicular block

In our study dexamethasone prolongs the duration of analgesia 17 times when used as an adjuvant to 0.5% bupivacaine

Adjuvant dexamethasone significantly prolonged the duration of analgesia in all reviewed studies regardless of the local anesthetic agent used or type of block performed. USG guided supraclavicular brachial plexus block provides a better quality of block than supraclavicular

block using anatomic landmarks and neurostimulator confirmation⁴³ While dexamethasone used as an adjuvant in brachial plexus blocks clearly prolongs the duration

The mechanism of dexamethasone induced prolongation of peripheral nerve blockade is not well understood Dexamethasone alone does not exhibit analgesic effects when incorporated into microspheres¹¹ It is commonly attributed to its anti-inflammatory action This is supported by the finding that the degree of block prolongation had the same rank order as the relative anti-inflammatory potencies of glucocorticoids and is completely reversed by administration of a specific glucocorticoid receptor antagonist^{11,13} These effects are therefore mediated via the classic glucocorticoid receptor and are local effects rather than systemic since incorporation of dexamethasone has not been shown to alter kinetics of bupivacaine release from microcapsules¹¹ Action on glucocorticoid receptor is proposed to alter the functioning of ion channels or produce local acidosis in nerve cell, thereby reducing the concentration of local anaesthetic required to produce conduction failure or trapping the highly ionised bupivacaine molecule into the neuronal cell^{13,26} Both these events would produce an extended action of local anaesthetics

Perioperative haemodynamics:

Table 6,7,8 shows perioperative hemodynamic parameters data In our study there was no significant difference in the hemodynamics like pulse, systolic and diastolic blood pressure found between both the groups

Peri operative complications:

Table 9 shows incidence of perioperative complications In our study no major complications like nausea, vomiting, hypotension, bradycardia noted in both groups perioperatively

SUMMARY

After taking thorough history and pre-operative assessment and Informed consent, 60 patients (30 patients in each group) who were satisfying the inclusion criteria were enrolled into the study

Brachial plexus block was performed with supraclavicular approach using USG guidance

Patients with complete sensory and motor block were included in study

Patients were divided in to two groups according to the local anesthetic mixture they received in supraclavicular approach of brachial plexus block

Group S: patients who received 0.5% bupivacaine 23 ml plus 0.9% normal saline 2 ml making a total volume of 25 ml were included in Group S

Group D: patients who received 0.5% bupivacaine 23 ml plus dexamethasone 8 mg (2 ml) making a total volume of 25 ml were included in Group D

The age, sex, weight, ASA grade of patients and duration of surgery were comparable among both groups

Parameters were noted in the form of mean \pm SD A 'p' value of <0.05 was considered as statistically significant

The mean time of onset of sensory block in group S was 433 \pm 088 min and group D was 373 \pm 090 min

The mean time of onset of motor block in group S was 603 \pm 071 min and group D was 513 \pm 097 min

The onset of sensory block and motor block was significantly faster in dexamethasone group compared with saline group ($p < 0.05$) The mean time to achieve peak sensory block in group S was 1196 ± 080 min and group D was 963 ± 096 min

The mean time of achieve peak motor block in group S was 1613 ± 130 min and group D was 129 ± 112 min

The mean time to achieve peak sensory block and motor block was significantly faster in dexamethasone group compared with saline group ($p < 0.05$)

The mean time of duration of motor block in group S was 48246 ± 3423 min and in group D was 61983 ± 3294 min

The mean time for 1st rescue analgesia in group S was 60966 ± 3552 min and in group D was 106283 ± 5695 min

The mean time of duration of motor block and mean time of first rescue analgesia was longer in dexamethasone group as compared to saline group which were statistically significant ($p < 0.05$)

Hemodynamic parameters like pulse rate, blood pressure and SpO₂ were stable and comparable in both groups

No complications and adverse events were noted in either group

CONCLUSION

In conclusion, adding Dexamethasone (8mg) as an adjuvant to 0.5% bupivacaine in ultrasound guided supraclavicular brachial plexus block results in faster onset of sensory and motor block with the significant prolongation of duration of motor block and post operative analgesia without any side effects

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27

Original article

A STUDY TO ASSESS RELATIONSHIP BETWEEN GESTATIONAL DIABETES MELLITUS AND BLOOD GROUPS

Key Word: ABO blood groups, Gestational Diabetes

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Abstract:

Introduction: Gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recognition during pregnancy. Gestational diabetes is a condition that affects the wellbeing of mother and fetus. The study was done on 299

pregnant women attending antenatal clinic in civil hospital Ahmadabad in the months of May to August 2018

AIM: To find out the correlation between gestational diabetes mellitus and blood groups

Materials and Method: All 299 pregnant women recruited for the study were given 75 gm glucose orally Their blood glucose levels were determined after 2 hour by glucometer Those having blood glucose more than 140mg/dl were identified as GDM Out of 299, 96 subjects diagnosed as GDM and 203 subjects diagnosed as NON GDM Blood group distribution of GDM and non GDM were compared

RESULT: 46.86% GDM had blood group “O” and 87.5% GDM had RH positive blood group

CONCLUSION: Blood group “O” is significantly associated with gestational diabetes

Introduction

Gestational diabetes mellitus (GDM) is a common condition that is defined as glucose intolerance of varying degree with onset or first recognition during pregnancy It affects approximately 5% of all pregnancies all over the world¹ Prevalence is 16% of live births in 2013 (International Diabetes Federation)⁴

High blood sugar is one of the most common medical conditions associated with pregnancy If left untreated, it can have an intergenerational impact, adversely affecting not just the health of the mother, but also that of the newborn Dangers include increased risk of high blood pressure, uncontrolled blood loss, infection, abnormal weight gain of the unborn baby in the womb, congenital malformation, spontaneous abortion and intrauterine death² Other complications for mother and child are risk of cesarean and

operative vaginal delivery, macrosomia, shoulder dystocia, neonatal hypoglycemia and hyperbilirubinemia

Evidences from India show that women in the country are at much higher risk of developing glucose intolerance during pregnancy as compared to white women In pan India study conducted by FOGSI and DIPSI shows about one-third of the pregnant women are diagnosed with GDM during the first trimester and over quarter of them have a history of fetal loss in the previous pregnancies Similar findings were also found in GDM demonstration project in Hoshangabad where pregnant women diagnosed for GDM during first, second and third trimester were 33%, 40% and 28% respectively³

Several studies correlating “ABO” and “Rhesus” blood groups with type 2 DM are documented There are limited studies available especially in Indian populations which correlate “ABO” and “Rhesus” blood groups with GDM Present study was undertaken to correlate “ABO” and “Rhesus” blood groups with GDM If any definite correlation is established, pregnant women with a particular blood group can be considered at high risk and should be screened and treated accordingly

Material and Methods

The study was done on 299 pregnant women attending antenatal clinic in civil hospital Ahmadabad in the months of May to August 2018 Pregnant women with preexisting DM, hypertension and other pregnancy related complications were excluded Pregnant women of all ages and all trimester were included All 299 pregnant women recruited for the study were given 75gm glucose orally Their blood glucose levels were determined after 2

hours by glucometer Those having blood glucose more than equal to 140mg/dl were identified as GDM This 2h-75g OGTT(Oral Glucose Tolerance Test) for diagnosis of GDM is recommended by WHO and is accepted globally⁹

Out of 299 pregnant women subjected to 2h-75g OGTT, 96 subjects were diagnosed as GDM and 203 subjects were diagnosed as NON GDM ABO and Rh blood groups of all 299 subjects were determined by automated method using Diagast equipment Blood group distribution of GDM and non GDM were compared

Observation

In our study total of 299 pregnant women were recruited out of which 96 were diagnosed as GDM and 203 were diagnosed as non GDM (Table I)Maximum number of cases diagnosed as GDM were in the age group of 18-25 (Table II)Also we found that most women who were diagnosed as having GDM were in their second trimester(Table III)Out of the total 96 GDM patients 45(468%) had O blood group,23 (239%) had B blood group,22(229%) had A blood group and6(625%) had AB blood group out of total 203 Non GDM 50(2463%) had A blood group,73(3596%) had B blood group,18(886%)had AB blood group,62(3054%) had O blood group

Using chi square test we found that association of blood group O with GDM statically significant ($p<005$)We additionally studied the distribution of Rh status in those diagnosed as having GDM and we found that 84(875%) had Rh positive blood group and 12(125%) had Rh negative blood groups

Table I:-Distribution of results of OGTT done in ANC

Sr no	OGTT result	Number
I	Positive (≥ 140 mg%) GDM	96(3210)
II	Negative (≤ 140 mg%) GDM	203(6789)
III	Total	299(100)

Out of the total 299 ANC, 3210 % were diagnosed as GDM and 6789% as Non GDM

Table II:- Age group distribution among the GDM(n=96)

Sr No	Age group	Number (%)
I	18-25	50(5208)
II	26-30	31(3229)
III	31-35	14(1458)
IV	36-40	1(104)

Out of the total 96 GDM patient, 50 (5208%) were in age group 18-25, 31 (3229%) were in age group 26-30, 14 (1458%) were in age group 31-35 and 1 (104%) was in age group 36-40

TableIII:- Trimester group distribution among the GDM (n=96)

Sr No	Trimester	Number (%)
I	1 st Trimester	17(177)

II	2 nd Trimester	51(5312)
III	3 rd Trimester	28(2916)

Out of the total 96 GDM patient, 51(5312%) were in 2nd trimester, 28(2916%) were in 3rd trimester followed by 17 (177%) were in 1st trimester

Table IV:- ABO blood groups distribution among the GDM and Non-GDM

Sr No	ABO Blood groups	GDM (n=96) (%)	Non-GDM (n=203) (%)
I	A	22(229)	50(2463)
II	B	23(239)	73(3596)
III	AB	6(625)	18(886)
IV	O	45(4687)	62(3054)

Out of the total 96 GDM patients 468% had O blood group, 239% had B blood group, 229% had A blood group and 625% had AB blood group The p-value is 0038 The result is significant at p<0.05 Association of blood group O with GDM is statistically significant

Table V:- Rh Blood groups distribution among the GDM and Non-GDM

Sr no	Rh Blood groups	GDM (n=96) (%)	Non-GDM (n=203)(%)
I	Positive	84(87.5)	193(95.07)
II	Negative	12(12.5)	10(4.92)

Out of the total 96 GDM patients, 87.5 % had Rh positive blood group, and 12.5 % had Rh negative blood group. The association between Rh positive blood group and GDM is statistically significant.

Discussion

In the present study, we found that blood group O and Rh positive is significantly associated with GDM. Blood group A is least associated with GDM. Our findings are in tune with Andrea Huidobro M et al 2017 who also concluded positive correlation between blood group O and Rh factor and GDM. Karagoz et al 2015⁴ reported that blood group O had high risk of developing GDM. Zhang et al 2015⁵ established that blood group AB linked as protective factor against GDM.

In our study, 51(53.12%) were in 2nd trimester, 28(29.16%) were in 3rd trimester followed by 17 (17.7%) were in 1st trimester.

Insulin sensitivity and secretion vary during different stage of pregnancy. In first trimester as well as early in second trimester, an increase in insulin sensitivity occurs mainly due to

higher level of estrogens In the late second and early third trimester the increase release of hormone including human placental lactogen, leptin, prolectin and cortisol from the placenta are responsible for the increase in insulin resistance⁶

The possible mechanism in development of an association among ABO, Rhesus blood types and incidence of types 2 diabetes is still not well defined The recent genome wide association studies suggest that the ABO blood group antigen enhance the general body inflammatory state single nucleotide polymorphism at the ABO locus are linked with two serum markers of inflammation TNF alpha (tumor necrosis factor alpha) and interleukin 6 Increased expression of TNF alpha has been associated with inflammation It is well known that the systemic inflammation is the main cause of insulin resistance and play a role in development of type 2 diabetes^{4,5,7}

The study suggests that ABO blood groups and Gestational Diabetes may be interrelated because of broad genetic and immunologic basis Overall this suggests that there may be a genetic link between blood groups and GDM that lead to a high association of blood group O with GDM and low association of blood group AB with GDM

Conclusion

From our study we conclude that pregnant women with blood group O are at high risk of developing GDM Blood group AB is negatively related with development of GDM We also conclude a positive association between Rh+ve blood group with GDM It is advisable to screen the antenatal cases with OGTT for detection of GDM from early gestational period This screening should continue strictly in second and third trimester as

the insulin resistance is maximum in this period At this point it must be remembered that ANC with blood group O+ve are under the higher risk of developing DM So, these patients should be closely followed up in antepartum as well as postpartum periods by the OGTT

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28 Original article

PULMONARY EMBOLISM AT A TERTIARY CARE HOSPITAL

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Abstract

Introduction: Pulmonary embolism is an acute cardiovascular disorder having high mortality rate despite of available diagnostic and treatment modalities. Early recognition and provision of early effective treatment brings good outcome with reversal of right ventricular function.

Aims: To study the cases of pulmonary embolism for demographic data, clinical presentation, risk factors and investigation.

Material and Method: Retrospective study done in 61 patients aged 19-80 years admitted at a tertiary care hospital from January to September 2018. All suspected patients of pulmonary embolism who underwent CTPA were included in the study. Patients <15 years, History of pulmonary trauma and Recurrence were excluded.

Result: Details about demographic data, clinical presentation, diagnostic methods, reports and outcome collected. In our study out of 61, 23 patients had positive in CTPA and 42 patients had D-dimer level >1000 ng/ml. Their main complaints were dyspnea, tachypnea, chest pain and cough. In our study 45 patients could be discharged and 9 patients expired.

Conclusion: PE is a potentially life threatening condition which is difficult to diagnose clinically but in time diagnostic strategy with CTPA and D-Dimer, helps in early recognition and provision of effective treatment which brings good outcome.

Key words-

Pulmonary Embolism, CTPA, D-dimer

STUDY OF CASES OF PULMONARY EMBOLISM AT A TERTIARY CARE HOSPITAL

INTRODUCTION:

Pulmonary embolism is an acute cardiovascular disorder having high mortality rates despite of available diagnostic and treatment modalities. Mostly it is reported in elderly but occurs in adult group also. It is a life threatening condition with right sided heart failure (involves right ventricle). Patients with pulmonary embolism present with varieties of symptoms that often misinterpreted for diagnosis and responsible for high mortality rate. So, Early recognition and provision of early effective treatment brings good outcome with reversal of right ventricular function⁽¹⁾

AIM:

To study the cases of pulmonary embolism for demographic data, clinical presentation, risk factors & investigations (CTPA, D-dimer)

MATERIAL:

Type of study- Retrospective

Sample size- 61 patients

Period of Study- January to September 2018

Study place- Tertiary care hospital

Study group- All suspected patients with pulmonary embolism underwent CTPA (CT pulmonary angiography)

Inclusion criteria- All suspected patients for PE underwent CTPA

Exclusion criteria- Age <15 years, Patients with pulmonary trauma, Recurrence of PE

Study material- Case records, CTPA reports

METHODOLOGY:

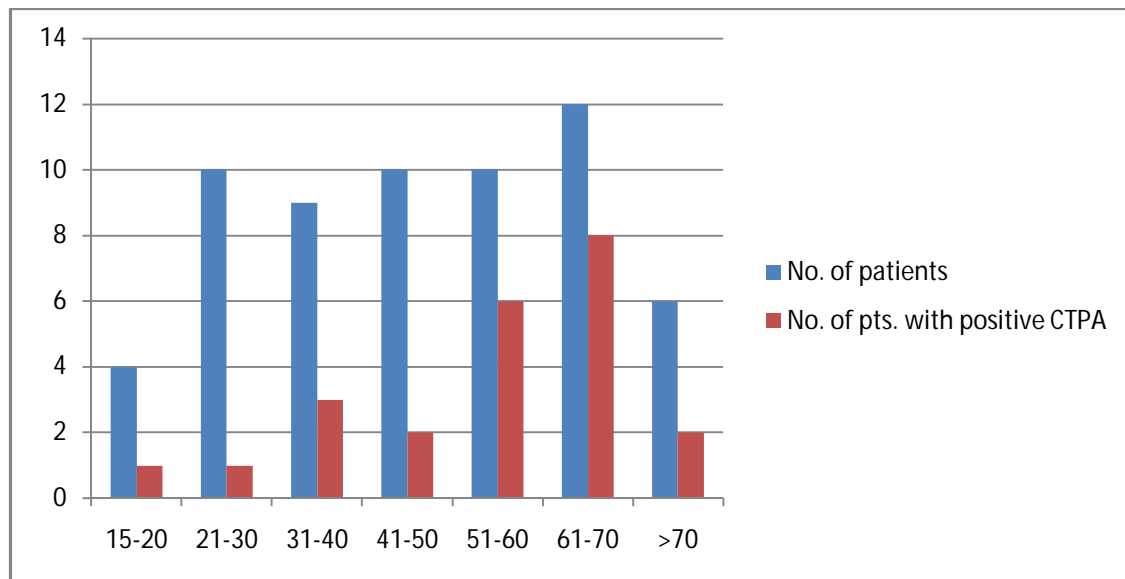
This study was done at tertiary care hospital. First, we inquired about record of CTPA in radiology department and collected patient's name and IR Number. Based on that, we collected case records from record department. Details about demographic data, clinical presentation, diagnostic methods, reports & outcome collected.

Collected data entered in MS excel sheet and analyzed by using SPSS version

RESULTS:

Table-1: Age wise distribution

Age (years)	No of patients	No of pts with positive CTPA
15-20	04	1
21-30	10	1
31-40	09	3
41-50	10	2
51-60	10	6
61-70	12	8
>70	06	2
Total	61	23



Maximum no of positive CTPA was in the patients with age group of 61-70years

Maximum age with positive CTPA is 80 years while Minimum age is 19years

In our study 4 patients found between the age group 15-20 years and all had history of long bone fracture and treated & discharged from hospital Their clinical presentation was of PE, so suspected and underwent CTPA Out of these 4 young patients, one had positive CTPA Dr Sandeep Rana reported a case of PE in 24 years male patient⁽²⁾

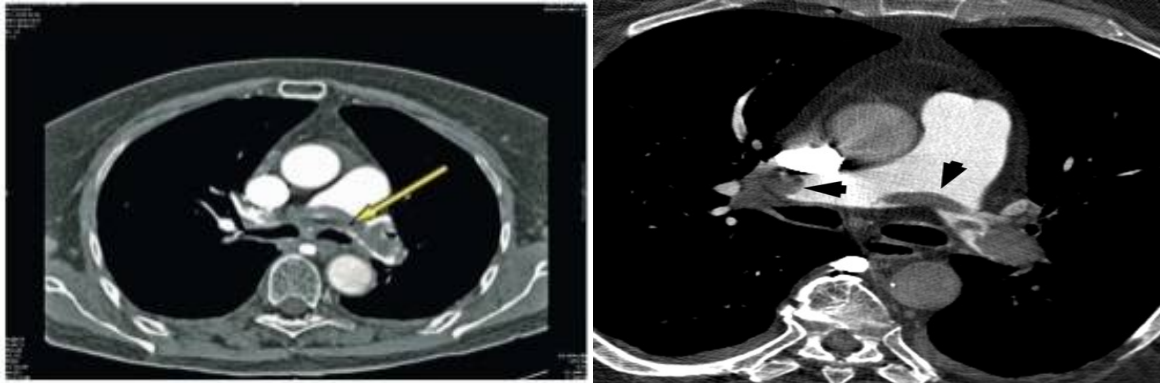
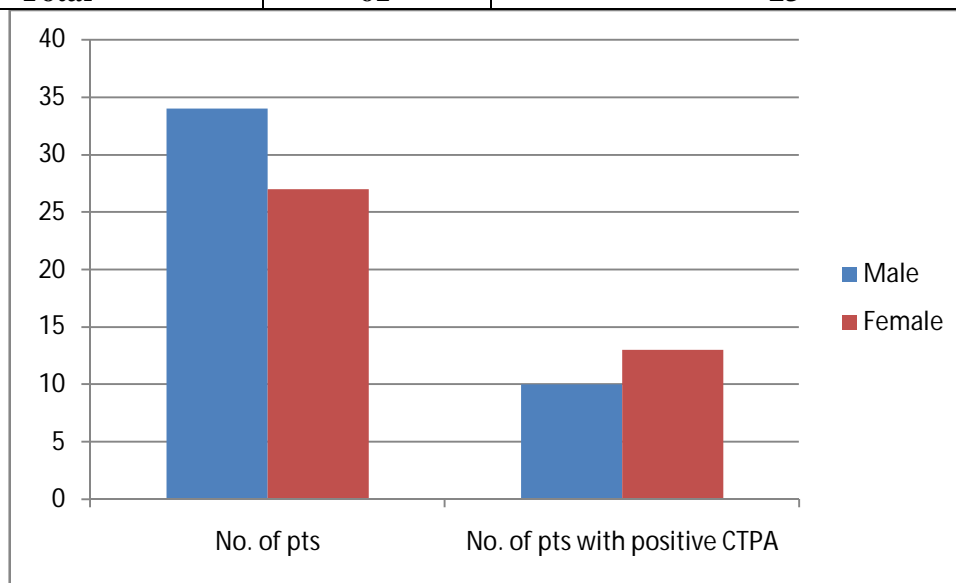


Figure-1, 2 Arrows are suggestive of thrombus in pulmonary arteries (positive CTPA)

CTPA is now most widely used technique for diagnosis of PE It has a high predictive value with a concordant clinical assessment But additional testing is necessary when clinical probability is in consistence with imaging results CTPA has 97% positive predictive value^(3,4)

Table-2: Sex wise distribution

Sex	No of pts	No of pts with positive CTPA
Male	34	10
Female	27	13
Total	61	23



In our study maximum no of patients with positive CTPA were females (13 patients) compared to male (10 patients)

Study done by Dr Silvy Laporte shown that occurrence of PE was equal in both men and women were equal in number⁽⁵⁾

Table-3: Clinical presentation

Clinicalpresentation	No of patients	Our study (%)	DrMiniati M (%)
Dyspnea	48	78	81
Chest pain	34	55	39
Cough	26	42	04
Tachycardia	18	29	-
Syncope	02	327	22
Hemoptysis	01	16	05
Arrhythmia (Atrial Fibrillation)	01	16	-

According to above table maximum no of patients were found with Dyspnea(78%) followed by chest pain(55%) and cough(42%)

Dr Miniati M studied in 800 patients and found dyspnea in 290 patients followed by chest pain in 140, syncope in 78, hemoptysis in 18 and cough in 14 patients⁽⁶⁾

Table-4: D-Dimmer level

D-Dimmer level (normal value <500 ng/ml)	No of pts
<500	05
500-1000	14
1000-1600	08
>1600	34
Total	61

If patients present with symptoms suggestive of PE, initial D-Dimmer measurement is help full regarding PE because if D-Dimmer level is >500 ng/ml than there is possibility of PE and if D-Dimmer level is >1600 ng/ml than there is very high chance for PE If the level is <500 ng/ml than there is no further investigation are required

In our study we selected the cases of suspected PE, underwent CTPA and D-Dimmer done In our study all 23 CTPA positive patients had D-Dimmer >1600 ng/ml It has overall Diagnostic sensitivity for PE is 94-98% but overall Diagnostic specificity is 50-60 %^(7,8)

D-Dimmer level is also high in certain other conditions likes Age>70 years, Pregnancy, Active malignancy, Surgical procedure in previous week, Liver disease, Rheumatic arthritis, Infection and trauma

Table-5: PT with INR & APTT reports

Report	Normal values	Normal	Abnormal	Total
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	(Seconds)	(No of pts)	(No of pts)	
PT	10-15	57	4	61
INR	<11	60	1	61
APTT	20-35	58	3	61

In our study 8 patients had abnormal PT with INR & APTT Measurement of PT with INR & APTT reports is required to know whether the patients have liver diseases or not Significant abnormal level is a contraindication for anticoagulant therapy

Table-6 :Etiology

Etiology	No of pts	No of pts with positive CTPA
Long bone fractures	24	11
Hip & Knee replacement surgery	12	04
DVT	09	05
Spinal cord injury	06	01
Major surgery	05	01
Obesity	04	01
Malignancy	01	00
Total	61	23

In our study maximum No of patients with Positive CTPA belonged to Long bone fracture followed by DVT. Our hospital has a well-established dedicated trauma center, so more no of trauma patients come from all places. This may be the reason that we got more no of trauma cases in our study. We received 42 cases related to trauma, out of that, 16 cases had positive findings for CTPA.

Table-7: Wells score

Wells score	No of pts	No of pts (positive CTPA)
<4 points(Less possibility)	42	04
>4 points(Most possibility)	19	19
Total	61	23

We noted the findings in history, physical examination and calculated Wells score

Usually Wells score is calculated to suspect patients with PE but in our study we included patients who already done CTPA and correlated each other

Table-8: Treatment

Treatment	No of pts
Unfractionated heparin	28
LMWH	25
Newer anti-coagulants (Dabigatran)	01

Fibrinolysis (Alteplase)	02
Cather guided Thrombolysis	00
Surgical embolectomy	00
Total	56

Unfractionated heparin was started in all patients with positive CTPA Three patients were found with high SCreatine >2 mg/dl, and there D-dimmer value found between 1000-1600 ng/ml, so treated with unfractionated heparin LMWH was given in 25 patients whose D-Dimmer was >500 ng/ml

Table-9: 2D Echo findings

2D Echo findings	No of Pts	No of pts with positive CTPA
Normal	32	04
Abnormal	29	19
Total	61	23

In suspected patients for PE, evaluation with bed side 2D Echo is helpful Certain sign suggest that there may be the chance to develop PE Most important sign is “McConnell’s sign”

According to this sign in Echo there is a hypo or akinetic mid and basal right ventricular (RV) free wall associated with seemingly normal or hyperkinetic RV apical wall motion However the specificity and sensitivity of these sign is 94% and 77% respectively⁽⁹⁾

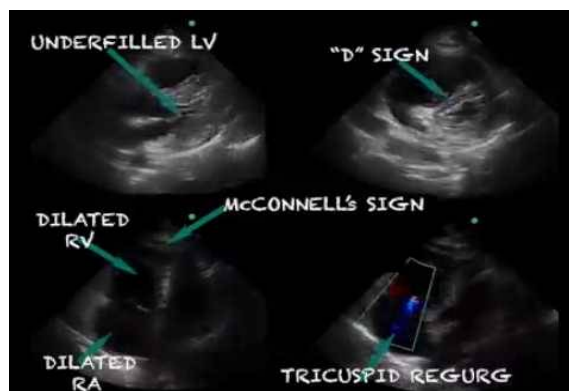


Figure-3 Echocardiography in Pulmonary Embolism patient

Table-10: Outcome

Outcome	CTPA Negative (No of pts)	CTPA Positive (No of pts)	Total
Discharged	29	16	45
DAMA	04	03	07
Expired	05	04	09

Total	38	23	61
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(DAMA-Discharge against Medical Advice)

Above table-10 shows that 29 patients could be discharged, whose CTPA was negative as compare to 16 patients with positive CTPA. More No of expired patients with negative CTPA is related to their co-morbid conditions also as PE suspected in such critical patients. The main conditions in our patients were septicemia, Myocardial Infarction, respiratory failure and renal failure. Dr Frederick A Anderson show 12% case fatality ratio while our study has case fatality is 15 % ⁽¹⁰⁾Dr Federico Lavorini mentioned 25% mortality in untreated cases and 2-8% in treated which correlates with 9% of our study⁽¹¹⁾

DISCUSSION:

Pathophysiology-

PE occurs when deep venous thrombi detach and embolize to the pulmonary circulation. Larger emboli wedge in the main pulmonary artery, while smaller emboli occlude the peripheral arteries. Pulmonary infarction occurs in about 10% of patients without underlying cardiopulmonary disease. Obstruction of the pulmonary arteries creates dead space ventilation as alveolar ventilation exceeds pulmonary capillary blood flow. This contributes to ventilation-perfusion mismatch, with vascular occlusion of the arteries increasing pulmonary vascular resistance. In addition, humeral mediators, such as serotonin and thromboxane, are released from activated platelets and may trigger vasoconstriction in unaffected areas of lung. As the pulmonary artery systolic pressure increases, right ventricular after load increases, leading to right ventricular failure. As the right ventricular failure progresses, impairment in left ventricular filling may develop. Rapid progression to myocardial ischemia may occur secondary to inadequate coronary artery filling.

CLINICAL PRESENTATION-

Patients of pulmonary embolism present with wide varieties of symptoms so, initial identification of pulmonary embolism is a task. Certain signs & symptoms are described in a following chart. According to it most common symptom is dyspnea follow by chest pain.

Table-11: Signs and symptoms

Symptoms	Signs
Dyspnea, Chest pain, Cough, Hemoptysis	Tachypnea, Tachycardia, Rales
Seizure, Syncope, Abdominal pain,	Fourth heart sound, Atrial fibrillation
Productive cough, Wheezing, Altered sensorium	Hypo/Hyperthermia, Chest Wall tenderness

RISK FACTORS-**Table-12: Risk factors for PE**

<u>Weak</u>	<u>Medium</u>	<u>High</u>
Hyperhomocystenaemia	Central venous line	Insufficiency of anticoagulant
Immobility(air travel >8hours)	Chemotherapy	Elevated level of factor VIII
Bed rest(>3days)	Congestive Heart failure	Fracture of long bone
Increasing age >40 years	Hormonal replacement therapy	Hip & Knee replacement surgery
Laparoscopic surgery	Malignancy	Major general surgery
Obesity	Pregnancy/postpartum	Major trauma
Pregnancy/antepartum	Previous VTE	Spinal cord injury ⁽¹⁾

DIAGNOSTIC METHODS-

There are certain guide lines published by professional societies, including American College of Physicians/American Academy of Family Physicians ⁽¹²⁾, American College of Emergency Physicians (ACEP) and the European Society of Cardiology According to these guidelines pretest probability (including history, physical examination and laboratory results) is identified It also includes clinical decision tool like original Wells criteria, Revised Geneva Score and Simplified Geneva score to determine whether individual patients require additional testing on the basis of risk stratification ⁽¹³⁾

Clinical decision depends on experience and familiar with pathophysiology and presentation of Pulmonary Embolism in ED

Table-13: Wells scoreCriteria

Criteria	Points
Clinical signs & symptoms of DVT	3
Pulmonary embolism most likely diagnosis	3
Tachycardia(>100/min)	15
Immobilization/Surgery in previous 4Weeks	15
Prior DVT/PE	15
Hemoptysis	1
Active malignancy (Treated with in 6 month)	1

If <4 points- PE less possibility, >4 points- PE most possibility

Table-14: Pulmonary Embolism Rule Out Criteria (PERC)

Clinical characteristics	Meet criteria	Does not meet criteria
Age <50 years	0	1
Initial heart rate<100 BPM	0	1
Initial SpO ₂ >94% on room air	0	1
No unilateral leg swelling	0	1

No hemoptysis	0	1
No surgery or trauma within 4 week	0	1
No H/O venous thromboembolism	0	1
No estrogen use	0	1

Note – All criteria must be present to rule out PE

TREATMENT:-

If anticoagulation treatment is started in the emergency room along with supportive care of hypoxemia and hemodynamic instability, mortality decreases^(14,15) Haemodynamically unstable patients may benefit from fibrinolytic therapy, however, significant bleeding occurs in 13% of patients The use of bolus thrombolytics during cardiopulmonary arrest may have some benefit when PE is strongly suspected⁽¹⁶⁾ Mechanical thrombolysis with catheter-directed embolectomy and fibrinolytic therapy can also be used Systemic heparin, either in the form of unfractionated heparin or low-molecular-weight heparin (LMWH) is the mainstay of treatment LMWH is advantageous in ease of administration, monitoring, lower potential for heparin-induced thrombocytopenia However, it is not an appropriate choice for patients with renal failure or for patients at significant risk of bleeding, because of its longer half-life and lack of reversibility Newer options for anticoagulation include direct thrombin inhibitors like dabigatran, factor Xa inhibition such as Rivaroxaban also can be use These newer anti-coagulant agents show good results in certain studies with lower chance of bleeding^(15, 17) If patients continue to have Pulmonary Embolism despite therapeutic anticoagulation, permanent or temporary inferior vena cava filters (IVCF) may be used

CONCLUSION:

PE is a potentially life threatening condition which is difficult to diagnose clinically but in time diagnostic strategy with CTPA and D-Dimmer helps in early recognition and provision of effective treatment, which brings good outcome

LIMITATION OF STUDY:

The No of cases was low Our study was retrospective and data collected from case records so, we got findings whatever is written in case records

ACKNOWLEDGMENT

We are grateful to Dr Pankaj R Patel, Dean, Smt NHL Municipal Medical College, Ahmedabad and Dr ST Malhan, Superintendent, VS General Hospital, Ahmedabad for allowing us for this study We are also thankful to our department, patients and institutional staff for their co-operation in completing our study successfully

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29 Original article

ANALYTICAL EVALUATION OF DRUG PACKAGE INSERTS

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ABSTRACT

Introduction: Package inserts are officially approved documents accompanying the drug which intends to provide information on safety and effectiveness of the product This information is in accordance to country specific regulatory guidelines It serves as a source of information to both users and prescribers Hence the information incorporated has to be optimal to avoid medication errors

Objectives: Evaluate the package inserts for completeness of information according to heading mentioned in Section 62 and 63 of schedule D of Drug and Cosmetic Rule, 1945

Methods: Package inserts were collected from five pharmacies on request over a duration of 1 month and were analysed for the completeness of information according to Section 62 and 63 of schedule D of Drug and Cosmetic Rule, 1945 Information if present under the defined header, was scored one and zero if not Total score of each header was calculated by adding the score from the individual package insert

Results: 80 package inserts were included in the study None of the reviewed package inserts contained all the headers as required by the Drugs and Cosmetics Act Total 16 headings were evaluated under both Section 62 and 63, highest value for the presence of heading were 15 out of 16 headers That shows the best value of compliance was 9375%

Conclusion: Present study encountered incompleteness of information in the package inserts It is, therefore recommended that regulatory body should strengthen rules and regulations for the pharmaceutical companies to increase the compliance of adequacy of information in their package inserts to ensure rationale, effective and safe use of medicines

Keywords: Drug package inserts, Drug and Cosmetic Act, Prescribing information

Introduction

A drug package insert (prescribing information or patient information leaflet or prescribing drug label) is a document given along with the prescription or over the counter medication⁽¹⁾ With increasing awareness and growing literacy in the community, the trend regarding the safety issues and healthcare is also changing In the present digital era, it is a common practice among the consumers to refill their medication without the consultation of the prescribing doctors As these drug dispensing facilities are available on one's door step, it is of even more importance to disseminate specific and complete information regarding the marketed products Package insert is one such mode by which the gap between user(consumer) and the health care service provider can be minimalised This would ultimately reduce the number of adverse drug reactions resulting from medication errors

In India, the concept of drug package insert is governed by The Drugs and Cosmetics Act (1940) and Rules (1945)⁽²⁾ The pharmacological information of the marketed product, which is provided as the drug package insert, is directed towards prescribers only Keeping this into consideration, this study was designed to evaluate the presentation and completeness of available drug package inserts of commonly used drugs in India

Method

This observational cross sectional study was conducted at Department of Pharmacology, AMC MET Medical College & Sheth LG General Hospital, Ahmedabad after the approval of the Institutional Review Board The drug package inserts of commonly used drugs like antimicrobials, antihypertensives, antacids and non-steroidal anti-inflammatory drugs were collected from pharmacy stores located in five different areas of Ahmedabad over a period of 1 month The duplicate package inserts (same drug, formulation, and company) were identified and excluded The remaining package inserts were included in the study and analysed for the presentation and completeness of clinical information

The clinical information included in the package inserts were analysed according to the headings mentioned in "Section 62 and 63" of Schedule D of Drugs and Cosmetics Rules, 1945 The Drugs and Cosmetics Act (1940) and Rules (1945) governs the concept of package insert in India In Section 6 of Schedule D (II) of the Rules, 'Section 62' mandates that the package insert must be

in English and must include information on therapeutic indications; posology and method of administration; contraindications; special warnings and precautions; drug interactions; contraindications in pregnancy and lactation; effects on ability to drive and use machines; undesirable effects; and antidote for overdosing 'Section 63' directs pharmaceutical information on list of excipients; incompatibilities; shelf life as packaged, after dilution or reconstitution or after first opening the container; special precautions for storage; nature and specification of container; and instruction for use/handling^(3,4)(Table 1)

Table 1 – Schedule D of the Drugs and Cosmetics Rules (1945)	
Section 62	Section 63
Posology and method of administration	List of excipients
Contraindication	Incompatibilities
Special warning and precaution	Shelf life as package for sale
Interaction	Shelf life after dilution or reconstitution
Pregnancy and lactation	Shelf life after opening the container
Effects on ability to drive, if contraindicated	Special precaution for storage
Undesirable effects	Nature and specification of container
Antidote for overdosing	Instruction for use/handling

If the information was mentioned under relevant heading, score of one was given otherwise score of zero was assigned The total score for each heading was then calculated by adding the score from individual drug package inserts Final scores were expressed as absolute numbers and percentages

Results

A total of 86 package inserts were collected from pharmacies during the study period Of these, 06 duplicate inserts were excluded and remaining 80 were included for further analysis The classification of drug package inserts as per the indication and dosage form is given in the Figure 1 and 2, respectively

Figure 1 - Distribution of package inserts as per therapeutic class

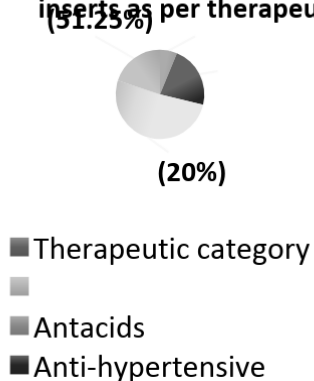
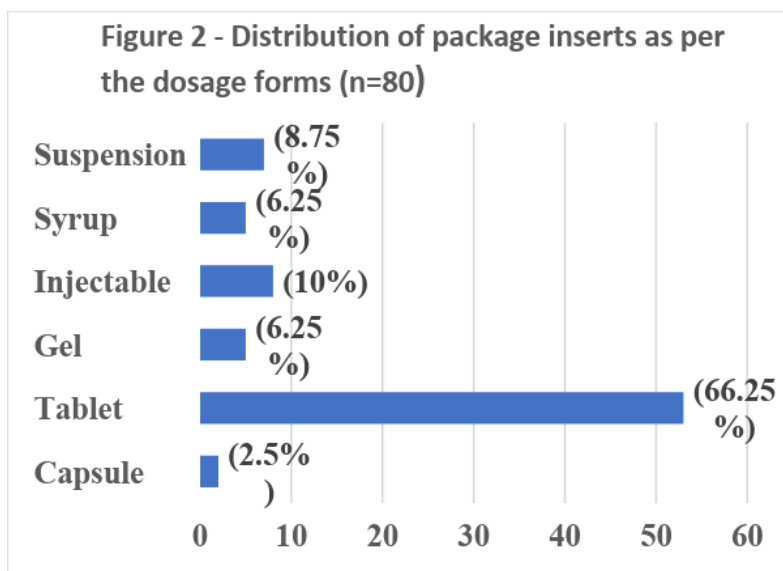


Figure 2 - Distribution of package inserts as per the dosage forms (n=80)

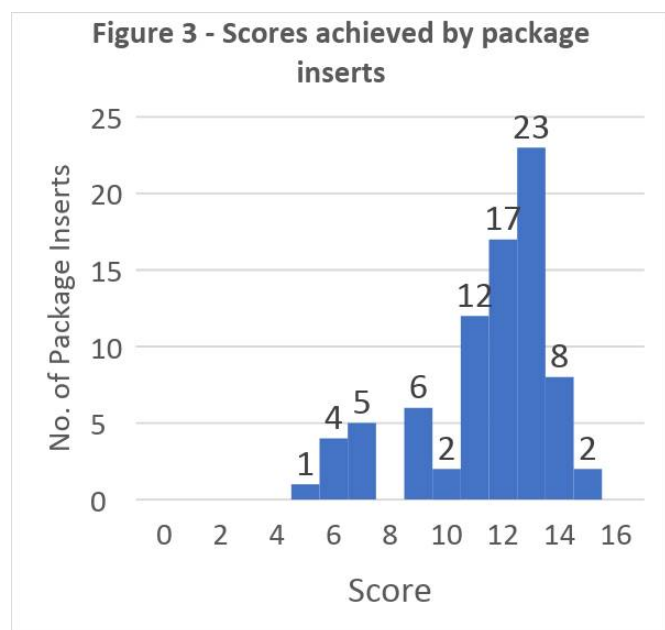


Analysis of data presented as per Section 62 and 63 is given in Table 2. None of the reviewed inserts contained all the sections as required by the Drugs and Cosmetics Act.

Table 2 – Results of analysis of package inserts		
Serial no	Section 62	No of package inserts (N=80)/ (Percentage)
1	Posology and method of administration	67(8375%)
2	Contraindication	69(8625%)
3	Special warning and precaution	57(7125%)
4	Interaction	56(7000%)

5	Pregnancy and lactation if contraindicated	68(8500%)
6	Effect on ability of drive and operate machines	17(2125%)
7	Undesirable effects/side effects	63(7875%)
8	Antidote for overdose	67(8375%)
Serial no	Section 63	No of package inserts(N=80)/ (Percentage)
9	List of excipients	79(9875%)
10	Incompatibilities	06(0750%)
11	Shelf life	11(1375%)
12	Shelf life after dilution/reconstitution	07(0875%)
13	Shelf life after opening the container	23(2875%)
14	Special precaution for storage	80(100%)
15	Nature and specification of container	80(100%)
16	Instruction for use/handling	59(7375%)

A total of 16 headings were evaluated mentioned under both Section 62 and 63 Maximum score of 15 was observed in 2 inserts whereas the minimum score encountered was 5, observed in only 1 insert; 23 package inserts had a score of 13 as shown in Figure 3 That shows the best value of compliance was 9375%



In therapeutic information, indications for use were present in 99% of package inserts Posology and method of administration, and antidote for overdosing were present in 84% of the inserts While 79% of the total inserts analysed had not mentioned the effect on ability to drive or use machines, if contraindicated In pharmaceutical information, special precaution for storage and nature and specifications of container were represented in at least 80% of the inserts Instruction for use and handling were mentioned in 7375% of the inserts Additional information, apart from that mentioned under section 62 and 63, were mentioned as clinical pharmacology, information update date, paediatric - geriatric use, clinical trials, mechanism of action Food drug interaction, name and address of manufacture and provision of full information on request highlighted

The shelf-life and incompatibilities were present only in 1375% and 750% of inserts respectively Variations in the layout of inserts varies from one company to other pharmaceutical company All the inserts were legible

Serial no	Additional information	No of package inserts(N=80)/ (Percentage)
1	Clinical pharmacology/ mechanism of action	56(7000%)
2	Information update date	26(3250%)
3	Paediatric use	49(6125%)
4	Geriatric use	30(3750%)
5	Clinical trials	07(0875%)
6	Pharmacokinetics	33(4125%)
7	Name and address of manufacture	78(9750%)
8	Provision of full information on request highlighted	30(3750%)
9	Retail price	00(00%)
10	References	00(00%)

Discussion

The package insert is a good source of information for the users as well as the health care providers Each country or region has its own administrative authority that regulates drugs and provides the information that consumers receive with their prescriptions In India, it is the Central Drugs Standard Control Organization (CDSCO) Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India who monitors the import, manufacturing, sale and distribution of drug The package insert follows a standard format which

ensures safe and effective use of the drug by providing accurate, specific, complete and timely updated information in an easily comprehensible manner

The results in our study shows up to 9375% compliance in regards to the presence of important headings stated in the Sections 62 and 63 of Schedule D of Drugs and Cosmetics Rules, 1945 as when compared to the 71% compliance reported by Kalam et al Under the section 63, list of excipients was present in majority (9875%) of the inserts analysed which is higher than the that reported by Shivkar et al⁽⁶⁾ On the other hand, the posology and method of administration, contraindication, special precaution and undesirable/side effects warning was present in 8375%, 8675%, 7125% and 7875% of package inserts which is lower than the that reported by Shivkar et al⁽⁶⁾

When correlated with the results of other such similar studies in regards to the headers mentioned for analysing the package insert, the vital information like drug interactions, pregnancy and lactation if contraindicated was noted in 70% and 85% respectively, which is quite similar to the that reported in studies by Shivkar et al and Solanki et al, ^(6,7) but slightly lower when compared to the study reported by Sudhamadhuri et al and Kalam et al^(8,9) However information on antidote for overdose and effect on ability to drive was present in 8375% and 2125% respectively, which is more than that reported by Kalam et al

As the consumers tend to refill their prescription without consulting the doctor, information under the heading 'instructions for use/handling' is of marked importance Instructions for use/handling was mentioned in about 7375% of the inserts, which is more than those reported by Sudhamadhuri et al, Kalam et al, Ramdas et al and Makbool et al, ^(8,9,10,11) Information on storage, nature and specification of container was mentioned in 100% of package inserts, which is higher than the results reported by the studies earlier The additional information present in the package inserts analysed under the heading of clinical pharmacology, clinical trials, pharmacokinetics and update date were encountered in 70%, 0875%, 4125% and 3250% respectively, which is quite higher than that noted in Shivkar et al⁽⁶⁾ The information regarding the retail price and references were not mentioned in any of the inserts analysed, which was similar to that reported by Makbool et al⁽¹¹⁾ The results of this study show higher percentage of presence of headings under pharmaceutical information compared to the study conducted by Sudhamadhuri et al and Ramdas et al^(8,10)

Conclusion

Package inserts are the source of information to the end users and hence are vital source of information for effective and safe use of drug Awareness of this information also helps in increasing the patient compliance to treatment The present study concluded that though major information is presented by the pharmaceutical companies in the package inserts, there are certain vital information like that on shelf life, incompatibilities and literature evidence from clinical trials been missed out To ensure completeness of information, regulatory bodies should strengthen the policy of approval of product information documents in order to increase the compliance and uniformity of information mentioned in them

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29

Original article

FACIO MAXILLARY FRACTURES ATTENDED IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: - Facio-maxillary injuries account for 933% of total injuries Facial injuries occur in a significant proportion of trauma patients requiring prompt diagnosis of fracture and soft tissue injuries with possible emergency intervention Facio-maxillary fractures may present with associated neural and spine injuries In fact there may be associated limb injuries also **Aim of the Study:** - To find out about the common causes, different types of fractures, male female ratio, different complications and patients who needed surgical intervention **Materials and Methods:** - This is a prospective cross sectional study comprising of 60 patients who were having different facio-maxillary fractures and visited to LG Hospital from June 2017 to May 2018 **Observation and Results:** - Facio-maxillary fractures and their incidence varies with different places Male to female ratio was 14:1 in our study Facio-maxillary fractures are associated mostly with Road Traffic Accidents (RTA 80%), followed by fall (12%), assault (5%) and sports injuries (3%) Commonest facial bone to get fractured is nasal bone (533%), followed by mandible (433%), maxilla (40%), orbit (233%), zygoma (10%) and frontal (66%) Condylar fracture is most common amongst mandible fractures, 8 cases (308%) Most common isolated bone to get fractured is nasal bone (167%) followed by mandible (10%), maxilla (67%), orbit (67%), frontal (33%), zygoma (33%) Clinical examination of the patient is very important in terms of facial asymmetry and oedema, mouth opening and teeth occlusion 3D CT face helps in diagnosis of facio-maxillary fractures In uncomplicated cases of facio maxillary fractures of maxilla and mandible with proper mouth opening and teeth occlusion, conservative management was done and in patients with decreased mouth opening and improper teeth occlusion surgical management was done In cases of nasal bone fractures, if there was external deviation of nose or nasal blockage, patient was managed surgically and if there was absence of external deviation or nasal blockage, patient was managed conservatively Out of 60 patients, 24 (40%) patients were operated while 36 (60%) patients were managed conservatively Most of the mandible fractures (769%) were operated (20 Out of 26) while other bone fractures (Nasal- 687%, Maxilla- 917%, Zygoma- 333%, Orbital and frontal- 100%) were managed conservatively Most common complication following injury was hypoesthesia (4 out of 60 patients) Local site infection, angle of mouth deviation and haematoma were seen in only one patient each **Conclusion:** - Based on this study we can conclude that facio maxillary injuries account for major percentage of injuries following RTA (80%) Most of the facial bone fractures were treated conservatively (60%) 3D CT face is the gold standard investigation to rule out different facio maxillary fractures This data

is important for evaluation of existing preventing measures and useful in development of new methods of injury prevention and treatment

KEYWORDS

FACIAL TRAUMA, FRACTURES, MANDIBLE, MAXILLA

INTRODUCTION

Facio-maxillary injuries account for 933% of total injuries [1] There are different types of facio-maxillary fractures according to the involved bones like nasal bone fracture, maxillary fracture, mandibular fracture, frontal bone fracture, zygoma fracture and orbital fracture Some of them are isolated fractures while some are combined fractures In mandible different parts which get fractured are- condyle, body, symphysis, angle, parasymphysis, coronoid process, alveolar process and ramus Le Fort described three levels of midface fracture (FIG-7) [2] Le Fort type I- fracture runs above the floor of the nasal cavity, through nasal septum, maxillary sinuses and inferior parts of medial and lateral pterygoid plates Le Fort type II- fracture runs from the floor of the maxillary sinuses superiorly to the infra-orbital margin and through the zygomatico-maxillary suture, within orbit it passes across the lacrimal bone to the nasion In Le Fort type III, there is disconnection of the facial skeleton from the cranial base Facial injuries occur in a significant proportion of trauma patients requiring prompt diagnosis of fractures and soft tissue injuries with possible emergency interventions [3] There are many studies in the literature that have analysed the demographic factors associated with facial trauma according to various criteria [3, 4, 5] The epidemiology of fractures varies with regard to injury type, severity and cause, depending on the population study [6] The differences in populations with regard to the causes of fractures may be the result of differences in culture and varieties of risk factors Continuous long-term collection of data regarding the epidemiology of facial fractures is important because it provides information necessary for the development and evaluation of preventive measures that might help reduce the incidence of facial injuries [6] The aim of this study was to find out about the common causes, different types of fractures, male female ratio, different complications and patients who needed surgical intervention

METHOD

This is a prospective cross sectional study comprising of 60 patients who were having different facio-maxillary fractures and visited to LG Hospital from June 2017 to May 2018 Patients were evaluated thoroughly by history taking, proper examination and routine investigations In general examination - Consciousness, orientation to time, place and person, neck movements and general mobility of the patients were checked In local examination - Facial oedema, facial asymmetry, skin lacerations, deep cuts, decreased mouth opening, improper teeth occlusion, teeth loss, nasal bleeding, black eye, epiphora, eyeball movements and redness of eyes were checked We carried out investigations such as 2D & 3D CT Facial bones, CT Brain and CT cervical spine (if needed) and all routine blood investigations

Inclusion criteria:-

All cases with facio-maxillary fractures of all age groups were included in our study

Exclusion criteria:-

Cases with severe head and spine injuries in which urgent Neurosurgical or Orthopaedic intervention was required, were excluded from our study

OBSERVATION AND RESULT

In decreasing order, causes for facio-maxillary injury were RTA (80%), fall down (12%), assault (5%) and sports injury (3%) We have compared these causes with Jordan and Korean Study The results of our study are consistent with these two studies(FIG 1, TABLE 1) [3,7]

FIG1 CAUSES OF FACIO-MAXILLARY INJURY

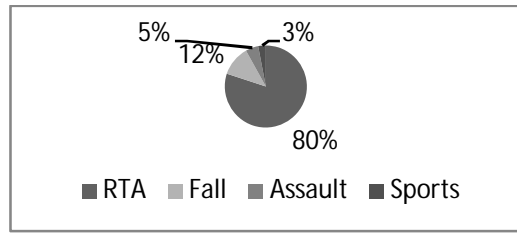


TABLE1 COMPARISION OF DIFFERENT CAUSES OF FACIO-MAXILLARY INJURIES IN OUR STUDY WITH STUDY OF JORDAN AND KOREA

CAUSE	OUR STUDY-2017 NUMBER OF PATIENTS n=60 (%)	INDIAN JOURNAL OF PLASTIC SURGERY, 2010 by KUN HWANG, KOREA(n=2094)	STUDY OF JORDAN 1992-1997,BATAINEH AB(n=563)
RTA	48(80%)	52%	552%
FALL	7(12%)	166%	197%
SPO RTS INJURY	2(3%)	97%	82%
ASSAULT	3(5%)	155%	169%

The most common facial bone to be fractured is nasal bone(533%) followed by mandible (433%), maxilla (40%), orbit (233%), zygoma (10%) and frontal (66%) These findings are in

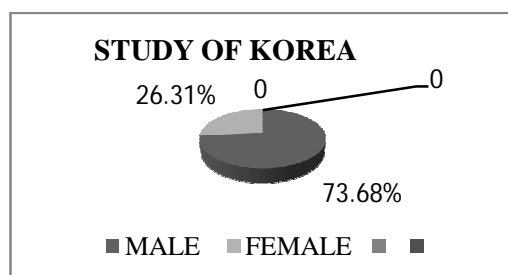
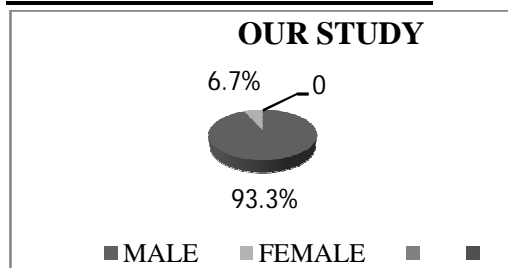
concurrence with the study of Korea and Jordan (TABLE 2)[1,3] In our study, we found 4 patients with Le Forte Type I and 2 patients with Le Forte Type II Fractures

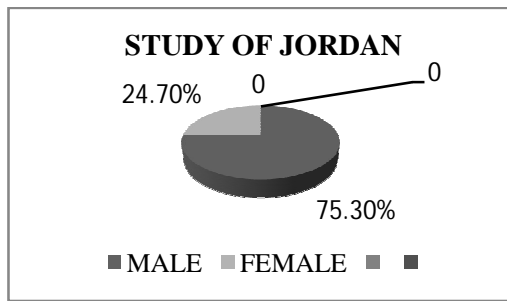
TABLE2 COMPARISON OF INCIDENCE OF FACIAL BONE FRACTURES

FRACTURED BONE	% OF ISOLATED # NO OF PATIENTS (%)	% OF COMBINED # NO OF PATIENTS (%)	TOTAL % OF # ASSOCIATED WITH OTHER #+ ISOLATED # NO OF PATIENTS (%)	STUDY OF KOREA (ISOLATED #)	STUDY OF JORDAN (TOTAL #)
	IN OUR STUDY				
NASAL	10(167%)	22(366%)	32 (533%)	377%	
MANDIBLE	6 (10 %)	20(333%)	26(433%)	30%	744%
MAXILLA	4(67 %)	20(30%)	24(367%)	13%	135%
ZYGOMA	2 (33%)	4(67%)	6 (10%)	57%	107%
ORBIT	4 (67 %)	10(166%)	14 (233 %)	76%	
FRONTAL	2 (33%)	2(33)	4(66%)	03%	

Facio-maxillary injuries were more common in males than females, which is in agreement with other studies(FIG 2) [1,3]

FIG2MALE FEMALE RATIO



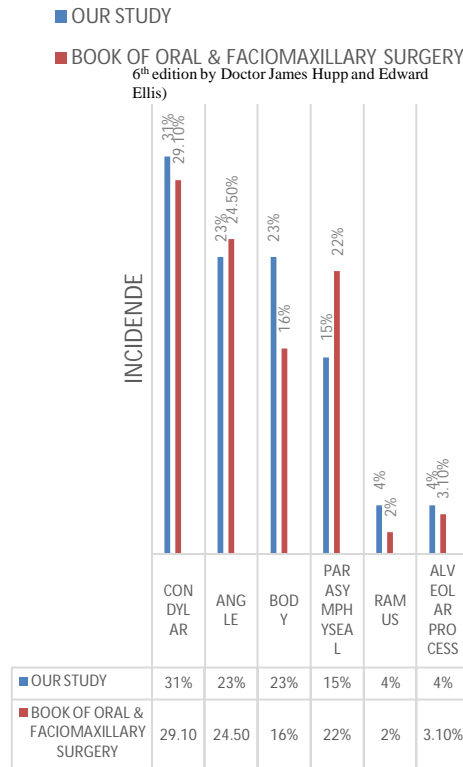


Condylar fracture is the commonest amongst different types of mandibular fractures followed by angle of mandible, symphysis, body, ramus and alveolar process

We have compared incidence of different parts of mandible fractures with a Book on “Contemporary oral and facio-maxillary surgery” (6th edition by Doctor James hupp and Edwaed Ellis) It showed that most common part to get fractured is condyle of the mandible (FIG 3) [8]

FIG3 COMPARISON OF INCIDENCE OF FRACTURE OF DIFFERENT PARTS OF MANDIBLE FRACTURES IN OUR STUDY WITH A BOOK ON “CONTEMPORARY

ORAL AND FACIO-MAXILLARY SURGERY”(6th edition by Doctor James hupp and



PART OF MANDIBLE

EdwaedEllis)”

Most of the patients with mandible fractures (769%) were operated (20 Out of 26) by either open or closed reduction while majority of other fractures (Nasal- 687%, Maxilla- 917%, Zygoma- 333%, Orbital and frontal- 100%) were managed conservatively (TABLE 3) [9]

TABLE 3 COMPARISON OF MANAGEMENT OF FRACTURES OF DIFFERENT FACIAL BONES

BONE FRACTURE (n)	MANAGEMENT DONE IN OUR STUDY	
	CONSERVATIVE(%)	OPERATIVE(%)
NASAL(32)	22(687%)	10(313%)
MANDIBLE(26)	6(231%)	20(769%)
MAXILLA(24)	22(917%)	2(83%)
ZYGOMA(6)	2(333%)	4(667%)
ORBIT(14)	14(100%)	-
FRONTAL(4)	4(100%)	-

Most common complication is hypoesthesia (133%) followed by infection, angle of mouth deviation and haematomas (TABLE 4)

TABLE 4 COMPLICATIONS

NAME OF THE COMPLICATION	NUMBER OF PATIENTS IN OUR STUDY	IN OUR STUDY (%)	IN KOREAN STUDY (%)
HYPOAESTHESIA	8	133%	684% (p < 00001)
DIPLOPIA	-	0%	256%
INFECTION	2	33%	23% (p 07176)
MOUTH ANGLE DEVIATION	2	33%	23% (p 07176)
HAEMATOMA	2	33%	08% (p 01353)
TM JOINT ANKYLOSIS	-	0%	08%

DISCUSSION

Large numbers of studies have been reported on the aetiology of facial trauma [10, 11] Location such as geographic region, socio-economic status can influence both type and frequency of injuries reported for a given population [6] The increasing prevalence of facial bone injuries emphasises the necessity for epidemiological surveys to determine optimal prevention strategies and patient management [3] Long-term collection and analysis of epidemiologic data regarding facial fractures in severely injured patients is an important step in the evaluation of conventional preventive measures [8] It is also necessary to determine trends to help, guide the development of new methods of injury prevention [8] The commonest cause of fracture in our study is RTA (80%), this is consistent with other studies of Korea and Jordan [1,3] Prevention can be made by proper traffic rules implication and safety wears In addition, drinking and driving prevention campaigns require strengthening because most of the injuries related to RTA were alcohol related The results of this survey are consistent with prior reports in Korea [12] In studies of Korea and Jordan, sports injuries were more common than India because people over there are more engaged with sports activities In studies of Korea and Jordan, incidence of assault is common [1, 3] To prevent the injuries due to assault, violence protection programs concentrating on both assault and self-inflicted injury may help decrease the frequency of facial trauma resulting from intentional injuries in the population In our study, males were affected more (933%) as compared to other countries as in India mostly males are bread earners The commonest bone to get fractured was nasal bone Isolated nasal bone fractures were accounted in 167% of cases and associated fractures in 533% of cases Our findings are in concordance with previous study in Korea that commonest fracture was nasal bone (377%) [1] This is because the nose is an easy target in personal violence The nose is projecting, relatively unprotected and with very little soft tissue cover In our study, most of the cases of isolated nasal bone fractures (687%) were managed conservatively Most of the other bone fractures were treated conservatively (Zygoma- 333%, Maxilla- 917%, Orbital and frontal- 100%) except mandible Most common part



of the mandible fracture was condyle Most of the mandibular fractures were operated (769%) For prevention of Maxilla and Mandibular fractures, rules regarding wearing of Helmets should be followed Most common complication in our study was hypoesthesia which was 133% which correlates with the study of Korea (684%, most common) [1] Few of the pictures of the Computed Tomography scan related to our study showing different types of mandibular fractures, nasal bone fracture, maxillary fracture and zygoma fracture are shown in Fig 3, 4, 5, 6 Fig7 shows classification of mid face fractures

FIG3 FRACTURES OF FACIAL SKELETON

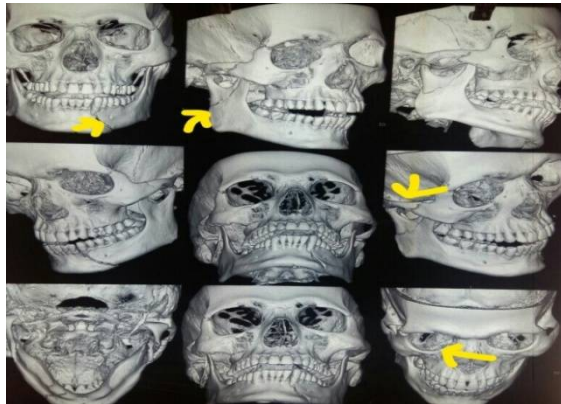


FIG4 DIFFERENT TYPES OF MANDIBULAR FRACTURE

FIG5 MANDIBULAR FRACTURE **FIG6 NASALBONE FRACTURE**

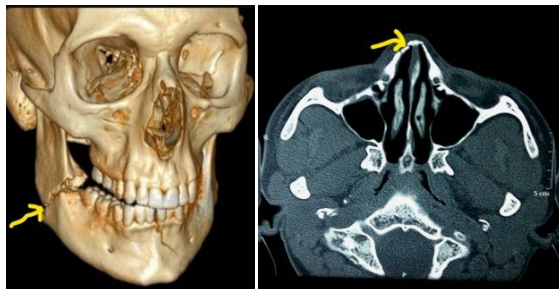
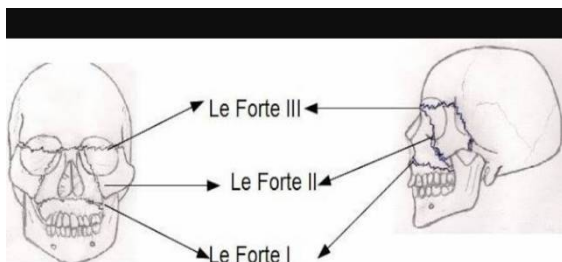


FIG7 MID FACE FRACTURES



CONCLUSION

Based on this study we can conclude that facio-maxillary injuries account for major percentage of injuries following RTA Patients with severe head

and spine injuries were treated for that injury first Clinical examination of the patient is very important 3D CT face is the gold standard investigation in cases of different facio maxillary fractures In uncomplicated cases of nasal bone fractures without external deviation or nasal blockage, conservative management was done In uncomplicated cases of facio maxillary injuries involving maxilla and mandible with proper mouth opening and teeth occlusion, conservative management was done In patients of nasal bone fractures with external deviation and nasal blockage, surgical management was done In patients with maxilla and mandibular fractures with decreased mouth opening and improper teeth occlusion, surgical management was done Complications, following the surgical interventions, were very less compared to the outcome of the surgery This data is important for evaluation of existing preventive measures and is useful in development of new methods of injury prevention and treatment

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30

Original article

DIAGNOSTIC VALUE OF PLAIN ABDOMINAL RADIOGRAPH IN NON TRAUMATIC CAUSES OF ACUTE ABDOMEN

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ABSTRACT

- **BACKGROUND** : Abdominal pain is a common presentation to emergency department Preoperative diagnosis of acute abdomen is crucial to minimize the morbidity and mortality where the diagnostic facilities are limited Plain abdominal films are usually recommended for conditions like perforation of GI tract, intestinal obstruction & ureteric calculus on clinical assessment In India, where availability of MRI & CT in remote areas & affordability of these investigations by poor patients become hindrance to achieve early diagnosis in acute abdominal conditions
- **METHODS** : A total of 336 cases of clinically suspected acute abdomen (non-traumatic) underwent routine plain x-ray abdomen Study was performed between August to October 2018 X-rays were carried out on Allengers 350mA, 500mA & 800 mA machine
- **RESULTS** : Our study showed that among 336 clinically suspected cases of acute abdomen , PAR was positive in 634 % cases It was normal or inconclusive in rest 366 % cases of clinically suspected acute abdomen In our study, from total 136 cases of clinically suspected renal or uretreic calculi, 120 (88%) had positive x-ray findings Further evaluation like ultrasound or CT scan was done of these patients & x ray were true positive in about 90 cases(77%) In clinically suspected 45 cases of intestinal obstruction , 40 cases (88%) had x ray findings to suggest intestinal obstruction In follow up of these patients, from 40, 38 patients (95%) were true positive for intestinal obstruction on CT scan In our study, x rays were 100 % confirmatory for perforation But , in clinically suspected cases like pancreatitis & cholecystitis only 13% & 23% respectively had positive findings on x-rays Thus, this study shows that x-rays are

confirmatory for cases of perforation Though , it is reliable for intestinal obstruction & renal stones, it is not confirmatory Other imaging modalities are necessary to confirm the diagnosis

- **CONCLUSION :** Plain abdominal radiographs(PAR) in cases of acute abdomen are most widely used first imaging modality It is noninvasive, low cost first line modality & easy to perform imaging modality that can be used in every patients presenting to casualty PAR are most useful in cases with perforation , intestinal obstruction & renal / ureteric / vesicoureteric junction / urinary bladder calculi

INTRODUCTION :

- The term ‘acute abdomen’ consists of all those conditions that present with clinical features of short duration (arbitrarily within 24 hours) which might indicate a progressive intra-abdominal condition that is threatening to life or is causing severe morbidity¹ Our study is basically to evaluate the diagnostic value of plain abdominal radiograph in various causes of acute abdomen The causes of acute abdomen are renal or ureteric calculi, acute appendicitis, acute cholecystitis, peritonitis, intestinal obstruction, acute pancreatitis, severe gastritis, intususception, perforation of hollow viscus, gastric and colonic volvulus, paralytic ileus , colitis, intraabdominal abscess, ovarian torsion in females & trauma² This study is pertained to nontraumatic causes of acute abdomen only Though x- rays are routine investigations, it has limitations as among all these acute conditions only some causes of acute abdomen are detected on plain radiographs & x-rays are not specific for every conditions of acute abdomen^{3,4,7,8} Majority of causes of acute abdomen found positive on plain abdominal radiograph in our study are renal or ureteric calculi, intestinal obstruction and perforation It is most sensitive for detection of pneumoperitoneum & intestinal obstruction 5 Thus, Plain x-ray abdomen gives a valuable clue to the clinicians to carry out further investigation Preoperative diagnosis of acute abdomen is crucial to minimize the morbidity and mortality where the diagnostic facilities are limited On Plain Abdominal radiographs(PAR): (kv:60-65, short exposure time) & Supine abdominal radiograph-distribution of gas, calibre of bowel, displacement of bowel & obliteration of fat line can be made out Erect abdominal radiograph air-fluid levels and free gas are detected Horizontal-ray films(erect or lateral decubitus)-free intra-abdominal air, fluid levels & on Lateral abdominal radiograph-demonstrate calcification in an aortic aneurysm

AIMS & OBJECTIVES :

- To establish diagnostic value of plain x-ray abdomen in acute abdomen
- To know the various pathologies recognised by plain x-ray abdomen
- To know age & gender wise distribution of cases for acute abdomen
- To help clinician in initial management of patients

METHODS & MATERIALS :

This study was performed for 3 months period between august to October 2018 Informed consent was taken Patients with suspected clinical diagnosis of renal or ureteric calculi, intestinal obstruction & perforation or the other causes of acute abdomen were included X-rays were taken on allengers 350 mA, 500 mA & 800 mA machine Plain abdominal radiographs taken were supine abdominal radiographs, erect abdominal radiographs, horizontal ray radiographs & lateral decubitus in some cases The patient was kept in a given position for 10 minutes before the horizontal-ray radiograph to allow time for any free gas to rise to the highest point The bladder was emptied before the supine radiograph was taken and the area from the diaphragm to the hernial orifices was included in the film These Plain x-rays were evaluated by a blinded (DS) radiologist The images were interpreted with only the knowledge that patients presented with abdominal pain A proforma was prepared consisting of the patient's demographic features, clinical presentation, variables pertaining to the plain abdominal radiograph and other tests involved in the investigative algorithm Other investigations performed to arrive at the correct and final diagnosis for a patient with acute abdominal pain were also measured These data were analysed manually to meet the objectives of the study Patients undergoing surgical procedures had the type of surgery and surgical findings recorded

RESULTS :

TABLE 1 : AGE WISE DISTRIBUTION OF CASES ACCORDING TO FINAL CLINICAL DIAGNOSIS

AGE IN YEARS	RENAL STONES /COLIC	INTESTINAL OBSTRUCTION	PERFORATION	INTUSSUSCEPTION	PANCREATITIS
0-10	-	02	-	02	-
11-20	04	04	-	-	-
21-30	15	08	09	-	02
31-40	32	07	09	-	05
41-50	33	10	11	-	06
51-60	37	10	04	-	01
>60	15	04	02	-	01

Most patients of acute abdomen presented to our hospital were of 41 to 50 years of age Among which renal colic was most common cause of acute abdomen in this age group Least affected age group for acute abdomen was 0-10 years Renal colic was most common finding seen in 51-60 years age group Intestinal obstruction was mostly seen in 41 to 60 years of age group Perforation

was most common finding seen in 41-50 years of age Intussuception was commonest finding in 0-10 years age group Pancreatitis was commonest in 41 – 50 years age group

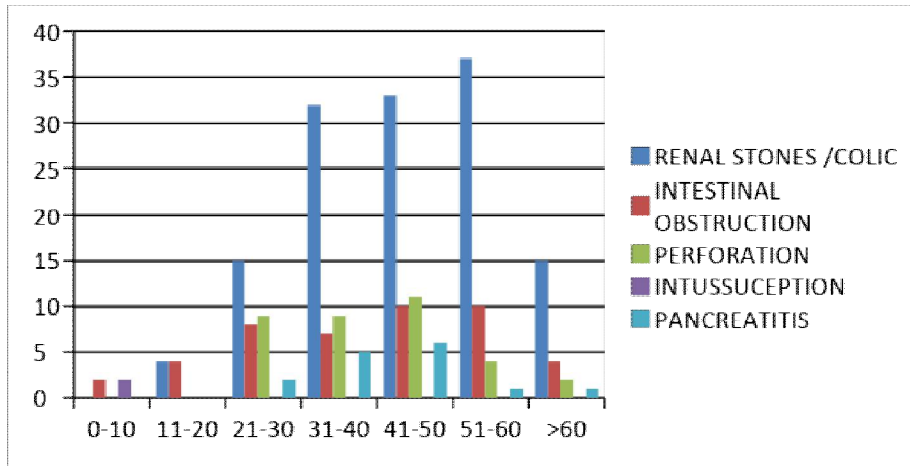


TABLE 2 : CLINICAL SUSPECTED DIAGNOSIS OF CASES

CLINICAL DIAGNOSIS	CASES
Renal/ureteric colic	136(40%)
Intestinal obstruction	45(13%)
Peritonitis	15(44%)
Intussuception	02(05%)
Pancreatitis	15(4%)
Paralytic ileus	18(5%)
Volvulus	02(05%)
Acute cholecystitis	23(68%)
Foreign body	08(23%)
Others	72(21%)
Total	336

From total 336 clinically suspected cases of acute abdomen, most cases were of renal colic (40%) followed by intestinal obstruction (13%) Least cases were of intussuception & volvulus (05%)

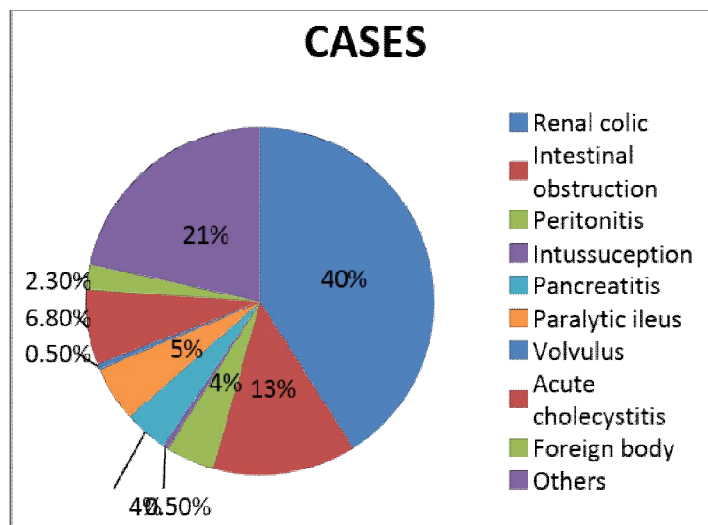


TABLE 3 : DISTRIBUTION ACCORDING TO SYMPTOMS

	RENAL COLIC	INTESTINAL OBSTRUCTION	PERITONITIS	INTUSSUSCEPTION	PANCREATITIS
GENERALISED ABDOMINAL PAIN	28	02	28	-	-
FLANK PAIN	90	-	-	-	-
ABDOMINAL DISTENSION + VOMITING + CONSTIPATION	-	36	02	02	-
HEMATURIA	02	-	-	-	-
EPIGASTRIC PAIN	-	-	05	-	02

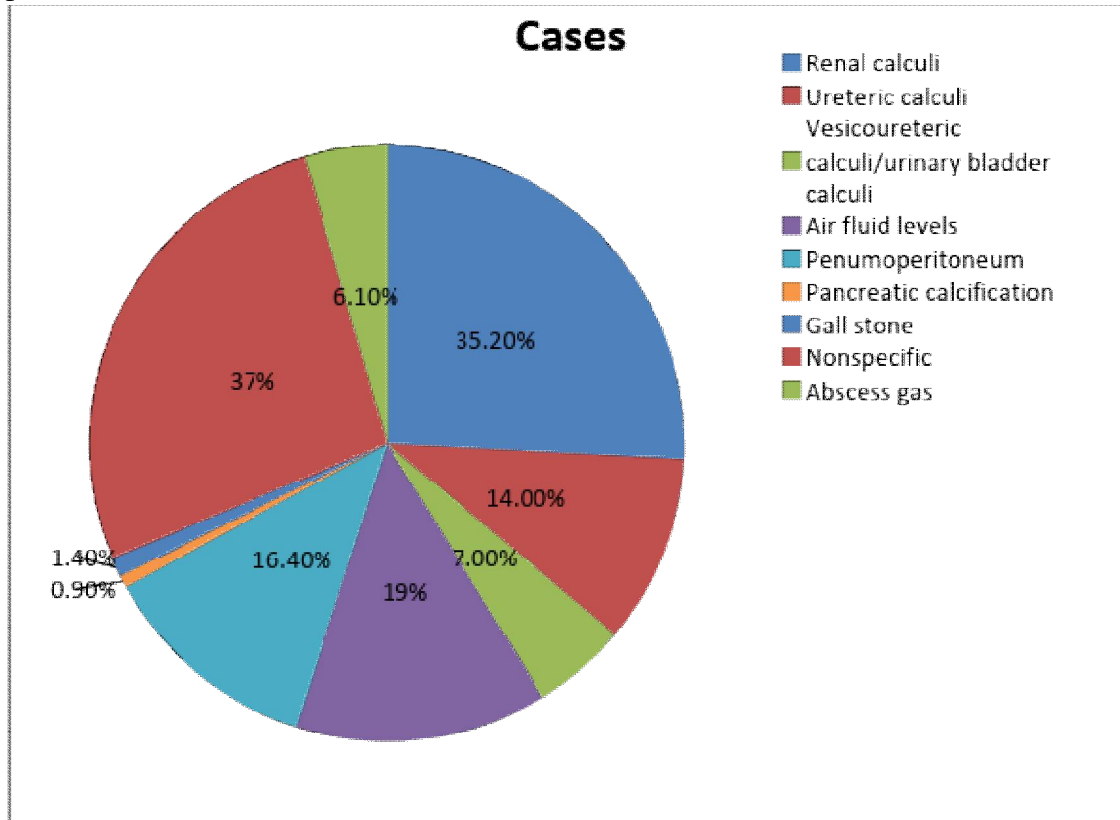
Most of the patients had symptoms of flank pain (90) followed by generalized abdominal pain (58) Least symptom found was hematuria (02)

TABLE 4 : X-RAY FINDINGS OF EXAMINED CASES

X-RAY FINDINGS	CASES
Renal calculi	75(352%)
Ureteric calculi	30(14%)
Vesicoureteric calculi/urinary bladder calculi	15(7%)
Air fluid levels	40(187%)
Pneumoperitoneum	35(164%)
Pancreatic calcification	02(09%)
Gall stone	03(14%)
Nonspecific	123(366%)
Abscess gas	13(61%)

Among 336 cases of clinically suspected acute abdomen, 213 (634%) cases had positive x-ray findings to suggest the underlying pathology of acute abdomen and remaining 123(366%) cases had nonspecific or nonconclusive findings on x-rays From positive 213 findings, most common finding was renal calculi (352%) followed by air fluid levels(187%) Least common finding was

pancreatic calcification(09%)



IMAGES :



Image 1

Image 2

Erect PAR showing large amount of bilateral round radio-

Subdiaphragmatic free air
hemipelvis, p/o enterolith

PAR showing well defined

Opacity in right



Image 3

Erect PAR showing multiple air fluid levels,
gas filled small

Suggesting intestinal obstruction



Image 4

PAR showing distended

Bowel loops



Image 5- showing few well defined round to oval radioopacities at level of L1 & L3 vertebrae on right side suggesting renal calculi multiple well defined round to oval organised radioopacities noted at level of L2 & L3 vertebrae, possibility of ureteric calculi DJ stent noted on left side at level of L1 & L2 vertebrae Fragment of DJ stent noted in pelvis

DISCUSSION :

Plain abdominal radiography remains an important diagnostic tool if it is restricted to certain surgical conditions, especially those pertaining to intestinal obstruction and pneumoperitoneum^{10,11,12} Abdominal radiography has historically been the first imaging examination performed in the emergency department in evaluating abdominal pain It is easily available, cheapest, easy to perform, noninvasive & widely used first imaging modality It is the quickest imaging modality

that can diagnose pneumoperitoneum⁶ & further investigations may not be required, thus reducing time, cost & morbidity & thus helpful for both patient & surgeon. Radiation hazards wise, it gives least radiation exposure to patient as compared to CT & fluoroscopy. However, it has limitations such as it can't be performed in pregnant patients & it provides suboptimal information in case of obese patients. In our study, Urinary tract pathology was accounting for a high number of positive findings on plain abdominal radiograph (PAR) (56%), corresponding closely with the findings of Eisenberg and colleagues⁸. Although urinary calculi might be visible, there is a possibility of false positive and false-negative reporting. This could be due to the fact that radioopaque ureteral stones are infrequently identified on PAR and could easily be confused with other abdominal or pelvic calcifications. In our study, from total 136 cases of clinically suspected renal or ureteric calculi, 120 (88%) had positive x-ray findings. Further evaluation like ultrasound or CT scan was done of these patients & x-rays were true positive in about 90 cases (77%). Only radioopaque stones are visible on PAR. PAR has disadvantage that radiolucent calculi are not visualized. For radiolucent calculi, further investigations are required. In clinically suspected 45 cases of intestinal obstruction, 40 cases (88%) had x-ray findings to suggest intestinal obstruction. In follow up of these patients, from 40, 38 patients (95%) were true positive for intestinal obstruction on CT scan. In our study, x-rays were 100% confirmatory for perforation. But, in clinically suspected cases like pancreatitis & cholecystitis only 13% & 23% respectively had positive findings on x-rays. Thus, this study shows that x-rays are confirmatory for cases of perforation. Though, it is reliable for intestinal obstruction & renal stones, it is not confirmatory. Other imaging modalities are necessary to confirm the diagnosis. In our study, percentage in diagnosing pneumoperitoneum and intestinal obstruction was nearly 100% & 95% respectively which is nearly similar to Gupta K et al⁵. The most frequent sign in perforation which we found was crescent shaped free air beneath the diaphragm which is similar to study of Marija Frkovic⁹. Our study showed that among 336 clinically suspected cases of acute abdomen, PAR was positive in 63.4% cases. It was normal or inconclusive in rest 36.6% cases of clinically suspected acute abdomen. This high yielding positive data may be due to the fact that this study was oriented on clinically suspected cases of acute abdomen. In a retrospective study of 1000 patients with nontraumatic acute abdominal pain, Ahn et al concluded "abdominal radiographs are not specific in the evaluation of adult patients presenting to the emergency department with nontraumatic abdominal pain"^{3,4}. Other series have also concluded that abdominal radiography is of limited use in the assessment of patients with acute abdominal pain^{7,8}. Our study data shows that PAR is most useful in patients with suspicion of pneumoperitoneum, intestinal obstruction & renal or ureteric stones. Our study also shows that PAR is not useful in other nontraumatic causes of acute abdomen like pancreatitis, volvulus, cholecystitis & intussusception etc which is similar to other series study^{4,5}. Thus, this study can help the clinician to carry out further management & narrow down the diagnosis.

CONCLUSION :

Plain abdominal radiographs (PAR) in cases of acute abdomen are most widely used first imaging modality. It is noninvasive, low cost first line modality & easy to perform imaging modality that can be used in every patient presenting to casualty. PAR are most useful in cases with perforation, intestinal obstruction & renal / ureteric / vesicoureteric junction / urinary bladder calculi. PAR helps clinician to narrow down the diagnosis & helps in further management of the

patients PAR rules out emergency surgical conditions like perforation & intestinal obstruction & thus significantly reduces morbidity & mortality So, PAR are arbitrary in every patients with acute abdominal pain Our study showed that among 336 clinically suspected cases of acute abdomen , PAR was positive in 634 % cases It was normal or inconclusive in rest 366 % cases of clinically suspected acute abdomen In our study, x-rays were 100% confirmatory for pneumoperitoneum, 95 % for intestinal obstruction, 77 % for renal or ureteric calculi & were less confirmatory for other conditions, so these conditions require further investigations

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31

Original article**OUR BASELINE OBSERVATIONS OF MEDICAL CAMP AT ELDERLY HOUSE WITH NSS CADETS OF AMCMET MEDICAL COLLEGE AHMEDABAD**

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Key words:

Abbreviation: NSS: National service scheme ,

Introduction:

National Service Scheme, handled by Ministry of Youth Affairs & Sports Govt of India, known as NSS was established in Gandhiji's Birth Centenary in 1969, 37 Universities having 40,000 students with main focus on the improvement of personality of students by community services Now, NSS has more than 32 million students that dispersed in 298 Universities and in 42 Senior Secondary Councils and Directorate of Vocational Education in all country From its commence, more than 375 crores students from Colleges, Universities and Institutions of super learning have improved from NSS activities, by student volunteers with motto "Not Me But You" NSS units of college give message to student s about importance of support the need for self-less service As a part of NSS unit activities of our AMCMET medical college a medical camp was held with the aim to get answer 1 What are the common camp based health problems of elderly population in one remotely located elderly house in Ahmedabad ? 2 What are the prevalence and percentage of health problems amongst elderly?

Hypothesis: Elderly population is especially staying in remote located elderly houses area must have significant magnitude of health problems and the health problems simply be managed by camp based approach

Research questions: As a part of NSS unit activities of our college a camp a medical camp was held to with the aim and objects to answer 1 what are the common camp based health problems of elderly population in one remotely located elderly house in Ahmedabad ? 2 What are the prevalence and percentage of health problems amongst elderly?

Objective: 1 To Find out the common health problems of elderly population in one remotely located elderly house to plan the medical camp more effectively in future? 2 To find out their prevalence and percentage amongst elderly to plan the medical camp more effectively in future

Study design: Observation study with primary invention

Participants: Elderly persons beyond age of 60 year both male and females

Outcome variables: Prevalence of health problems amongst participant in medical camp and their percentages

Method: The medical camp was conducted at one remotely located elderly house ie “Manilal Gandhi Vanprashthashram ” in vatva Ahmedabad district we had all needful,diagnostic tools,

Stethoscope

Sphigmomanometer

Glucometer

And we had purchased all needful medicine and surgical and wound dressing material for relief of medical problems with kind and generous support of one NGO ie FORUM

Result: 38 Man and 28 female ,total 66 were present in elderly house and present for taking benefit of medical camp It was found that prevalence of presentation were Joint pain and arthritis 364 %,Neuritis pain 45%,Cough Dry 182%, Asthma 61% , Cough wet 61%, constipation 45%,URTI 121%, Itching 333%,Ring worm 182%,Vertigo 91%,UTI 121%, Abnormal movement /parkinsonism 182%, Depression 182 % ,Indigestion 333%,Hyper Acidity 182%,Edema feet 76 %,Difficulty in breathing 121%,Hypertension 515%,Diarrhea/Hypotension 30%, DM needing insulin 30%,DM on oral ADD 76%, Hypothyroid on T4 30%, Insomnia 182%, Cataract 91% surgical wound and dressing 31%

The finding suggests that we need some medicines , some diagnostic tools like Sphigmomanometer , Gluco meter ,stethoscopes ,surgical dressing material and antiseptics to conduct a medical camp at elderly house

Statistical analysis: Percentages of health problems amongst elderly

Conclusion and Recommendations: From the study we recommend that NSS unit of medical and non medical colleges can conduct a medical camp at elderly houses under supervision of medical doctors ,enthusiastic senior medical students successfully By this way the medical need of senior citizens staying in remotely located elderly houses can be fulfilled successfully This serves an example public- public partnership for social service NSS units of medical colleges should organize such medical camp on remotely located elderly houses to give medical support and relief from their suffering and by that way the medical students can learn an unique community based problem and the way to reduce their suffering with National service schemes

Keywords : National Service Scheme of Gujarat university & NSS Unit of AMCMET medical college ,health problems of elderly community of elderly house, Awareness, Camp based approach ,

Conflict of interest: NIL

Funding: Needful drugs were purchased by from one NGO (FORUM)

Introduction:

National Service Scheme, handled by Ministry of Youth Affairs & Sports Govt of India, known as NSS was established in Gandhiji's Birth Centenary in 1969, 37 Universities having 40,000 students with main focus on the improvement of personality of students by community services Now, NSS has more than 32 million students that dispersed in 298 Universities and in 42 Senior Secondary Councils and Directorate of Vocational Education in all country From its commence, more than 375 crores students from Colleges, Universities and Institutions of super learning have improved from NSS activities, by student volunteers As a part of NSS unit activities of our AMCMET medical college a medical camp was held with the aim to get answer 1 What are the common camp based health problems of elderly population in one remotely located elderly house in Ahmedabad ? 2 What are the prevalence and percentage of health problems amongst elderly?

The concept of making national service a part of university education took about 20 years to evolve from the state of an idea into that of a scheme The early seeds of it were sown by Dr S Radhakrishnan in his Report (1948) The Central Advisory Board of Education discussed the idea and made some recommendations in 1950 In the first Five Year Plan document (1951) the need for social service camps found a mention During the next few years some institutions already started organizing such camps In 1959 an outline proposal came up for discussion in the meeting of education ministers from all over India The concept was accepted, and desh mukh Committee was formed to propose concrete suggestions (1959) In 1960 further suggestions came from Prof KG Saiyidain and these are responsible, more or less, for the scheme as we have it now But implementation was further delayed Then came Dr Kothari's strong recommendations in 1966 During the next ,year Vice Chancellors' Meeting took place and in 1969 a conference of student leaders welcomed the scheme The scheme was launched on September 24, in the Gandhi Centenary Year, 1969 Having traced this history the present chapter reviews the basic concepts, broad organizational goals, motto and operational objectives of NSS, and then narrows down to discuss village adoption

The motto or watchword of the National Service Scheme is 'NOT ME BUT YOU This reflects the essence of democratic living and upholds the need for selfless service and appreciation of the other person's point of view, and also to show consideration for fellow human beings It

underlines the fact that the welfare of an individual is ultimately dependent on the welfare of society as the whole Basic Concepts of NSS The overall aim of National Service Scheme as envisaged earlier, is to give an extension dimension to the higher education system and orient the student youth to community service while they are studying in educational institutions The educated youth who are expected to take the reins of administration in future are found to be unaware of the problems of the community and in certain cases are indifferent towards their needs and problems

Broad Objectives The broad objectives of NSS are to: (i) understand the community in which the volunteers work; (ii) understand themselves in relation to their community; (iii) identify the needs and problems of the community and involve them in problem solving processes; (iv) develop in them of social and civic responsibility; (v) utilize their knowledge in finding practical solution to individual and community problems; (vi) develop competence required for group-living and sharing of responsibilities; (vii) gain skills in mobilizing community participation; + (viii) acquire leadership qualities and democratic attitude; (ix) develop capacity to meet emergencies and natural disasters and; (x) practice national integration and social harmony

With improvement in health and medical standard in our planet including our country there will be a growing number of elderly populations Elderly population and elderly houses are itself an unique community issue In our study we have our results and need of camp based approach to manage elderly population indwelling in elderly house with medical camp with the help of NSS cadet and program officer team of medical college

The aim of the study was to know 1]the prevalence and distribution of medical problems among elderly population irrespective of gender and 2] And our strategies to manage such problems on camp bases at the site of elderly house

We Hypothesize: Elderly population is especially staying in remote located elderly houses area must have significant magnitude of health problems and the health problems simply be managed by camp based approach

Method: The aim of the study was to know 1]the prevalence and distribution of medical problems among elderly population irrespective of gender and 2] And our strategies to manage such problems on camp bases at the site of elderly house The medical camp was conducted at one remotely located elderly house “Manilal Gandhi Vanprashthashram ” in vatva Ahmedabad district we had purchased all needful, diagnostic tools ieStethoscope, Sphigmomanometer, Glucometer...we had purchased all needful medicines and surgical ,antiseptics and wound dressing material for relief of minor surgical problems with kind and generous support of one NGO ie FORUM

Observations and results:

38 Man and 28 female ,total 66 were present in elderly house and present for taking benefit of medical camp

Medical problems	No	%	Treatment /Advice given	Further intervention Demanding
Joint pain and arthritis	24	364	yes	-
Neuritis pain	3	45	yes	-
Cough Dry	12	182	yes	-
Cough wet	4	61	yes	-
Asthma		61	yes	-
constipation	3	45	yes	-
URTI	8	121	yes	-
Itching	22	333	yes	-
Ring warms	12	182	yes	-
Vertigo	6	91	yes	To attend OPD IN LG hospital
UTI/Prostate	8	121	yes	“
Abnormal movement /parkinsonism	12	182	yes	”
Generalized weakness	8	121	yes	-
Depression	12	182	yes	-
Indigestion	22	333	yes	-
Hyper Acidity	12	182	yes	-
Edema feet	5	76	yes	-
Difficulty in breathing	8	121	yes	“
Hypertension	34	515	yes	-
Diarrhea/Hypotension	2	30	yes	-
DM needing insulin	2	30	yes	-
DM on oral ADD	5	76	yes	-
Hypothyroid on T4	2	31	yes	-
Sleep /Insomnia	12	182	yes	-
Cataract	6	91	yes	“
Deafness	2	31	yes	”
Surgical wound	2	31	yes	-
Dental pain	2	31	yes	“

Discussions:

The study documented that the medical need of elderly populations can be satisfactorily met with regular medical camps. One need simple medical diagnostic tools like stethoscope, sphygmomanometer and glucometer and primary drugs and simple surgical antiseptics. Additional referral service can also be met with additional specialty camps with the support of ie Audiologist, ophthalmologist, dentists etc. The AMCMET medical college has NSS unit, affiliated Gujarat university and has affiliated LG Municipal General Hospital with essential specialty referral services. With some dedicated medical professors and volunteers students of NSS unit can regularly visit the elderly houses located remote area in Ahmedabad. Before ten years in Ahmedabad and Gujarat university, there were two medical colleges and both have NSS units. Today in Ahmedabad /Gujarat university there are more than six medical colleges but only one medical college have NSS unit. Author have not idea that at National level how many medical colleges have NSS units. But AIIMS Delhi has NSS unit. With improvement in health and medical standard in our planet including our country there will be a growing number of elderly populations. Elderly population and elderly houses are itself a unique community issue. With this study and with have our results we recommend the need of camp based approach to manage elderly population indwelling in elderly house with medical camp with the help of NSS cadet and program officer of medical college and non medical college. From students perspectives the main aim of joining NSS is **Personality Development through community services And as the medical students ultimately have to work in community the medical students can get significant benefits by working with community in NSS**. Students will get exposure for different types of works and talents ...By such camp based approach Student will explore different cultures, mentality and actual situations/problems in different parts of the community through camps. The work will provide self satisfaction which is worth of spending time in it. By doing work in it one will be definitely contributing in a nation services.

Incidentally Some of the objective are coincides with the objectives of Medical Council of India

some of the activities done in our college are ,Tree plantations, Blood donation, thalasemia and sickle cell anaemia detection camps, Celebrating different days like World Health Days, Woman 's Day, Aids day, etc, Slogans making, poster making, elocution competitions on different issues are organized to create awareness. One of the social services /activities we have personated in this paper is camping at elderly houses. By doing so many camps with support of other NGO, we have understand the health and medical problems of elderly groups and try to support them by camping. The result of this camping is also useful to those organization who planning such activates including medical and other no medical colleges ,

The best part about joining a NSS and attending a camp is that it is truly volunteer driven This means that you can pull out and reduce the time commitment at any point ie social sites, internet with the benefit of a university a certificate which goes a long way in your career and higher education One get to know the society very closely, meet new people understand their needs and do good for them in whatever small means one can, it gives an inner satisfaction which one can't explain in words And the feeling when one visit old age homes/blind homes/orphanages and spend some time with them and one will see some sort of happiness on their face which is better than any materialistic things in the world

One can have the sense of responsibility for doing something good for the society to make their life better in whatever small way one can and NSS camp just provides you the platform for the same...Every NSS Volunteer who actively participate experience that camp as an unforgettable experience that everyone should attend once in life By attending NSS camp one will opt for a journey to discover yourself, will learn about their strengths and weaknesses The work done in camp will provide you the best self satisfaction the best extra - curricular activity It makes one a socially active and responsible person and will learn to stand up different among the crowd

Conclusion and Recommendations: From the study we recommend that NSS unit of medical and non medical colleges can conduct a medical camp at elderly houses under supervision of medical doctors ,enthusiastic senior medical students successfully By this way the medical need of senior citizens staying in remotely located elderly houses can be fulfilled successfully This serves an example public- public partnership for social service NSS units of medical colleges should organize such medical camp on remotely located elderly houses to give medical support and relief from their suffering and by that way the medical students can learn an unique community based problem and the way to reduce their suffering with National service schemes

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32

INCOMING CONFERENCES

12 ACADEMIC MEET

7th April 2019

AMCMET Medical college **LG Hospital** campus Maninagar Ahmedabad

With APPI **A MULTIDISCIPLINARY CONFERENCE / CME**

Environment and diseases

Send Abstract of your paper, poster, speech to contact Emails: forum99in@gmail.com.

Conference is Accredited by Gujarat Medical Council [Applied]

Last date of registration

31st January 2019

Online registration link

<https://wwwplexusmdcom/event/AM19>

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