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Editorial

Original Articles

Editorial

Pneumonia: A Threat to our Children

Mohsin Masud Jan
Editor

Pakistan is one of the 15 countries, with the greatest number of deaths from pneumonia and diarrhea in children under the age of five years.

Compared to 2013 (6.4 million), there has been a decrease in child deaths in 2017, nevertheless pneumonia and diarrhea have steadily contributed (pneumonia 16 per cent) to those deaths over these years.

In 2012, Pakistan became the first South Asian country to roll out Pneumococcal Conjugate Vaccine (PCV 10) with support from Gavi, the Vaccine Alliance, when it had already helped children in many other countries avoid pneumonia.

"The vaccine has the potential to save thousands of lives in Pakistan's under-five children. Proved prohibitively expensive to an average Pakistani family, (around Rs12000 in open market) it is available free of cost in the government's immunization programme."

Routine childhood immunisation is a set of scheduled inoculations, free of cost, given from birth to 15 months to protect the child from diseases like diphtheria, pertussis (whooping cough), measles, pneumonia, tetanus, meningitis, polio, tuberculosis, and hepatitis B. Booster doses are later required for some vaccines.

Although the vaccines are available for the entire cohort (6 million a year) of Pakistani children, due to the low immunisation coverage almost half the children remain unimmunised and vulnerable to pneumonia.

The last Pakistan Demographic and Health Survey (PDHS 2012-13) shows country's immunisation coverage around 54 per cent which means almost half the children are not receiving the vaccine. If the vaccines are available in the country, why don't they reach those in need?

Although the vaccines are available for the entire cohort (6 million a year) of Pakistani children, due to the low immunisation coverage almost half the children remain unimmunised and vulnerable to pneumonia.

EPI vaccines, by the grace of God, are being provided for children absolutely free of cost. Even if a child belongs to the poorest of households in a community.

This was done to make the caregivers, health providers and heads of learning institutions of children, responsible to ensure that a child is fully protected against all diseases being covered under the country's immunisation programme.

In Pakistan, a large number of children die of diseases that can be prevented through vaccination. Access to immunisation is the right of every child and duty of the state to ensure the services reach every child. Any hindrance caused to provision of immunisation services causes grievous harm to a child and exposes him or her to highly infectious diseases that cause death or disability.

Mortality due to childhood pneumonia is strongly linked to poverty-related factors such as malnutrition. This must be addressed where disease burden is still high and access to care is insufficient. Other factors include lack of safe water and sanitation, indoor air pollution and inadequate access to healthcare.

As a result children have a weakened immune system and therefore when faced with an infectious threat their system is poorly equipped to respond and defend the body. A vicious cycle of a vulnerable immune system and severe illness commences increasing the risk of mortality.

The smoke and pollution also proves to be a risk and a cause for children being infected with pneumonia. Then, smoking inside the house is synonymous to making the children smoke as well. This can lead to countless health issues for children regarding breathing and pneumonia as well.

Immunisation saves lives and offers children a better chance of a healthier and more economically productive future. It is one of the most successful and cost-effective health interventions and can help give each child a chance of survival beyond their fifth birthday.

There is no second opinion that improvements in immunisation coverage contributes to reduced child deaths. In order to improve equitable coverage, it is crucial to strengthen the supply side but at the same time we need to work on demand generation as well as too few parents know that the vaccine is necessary for child health, free-of-cost and available at immunization centers nationally.

Original Article

Gynecomastia

Single Stage Correction of Gynecomastia: Liposuction & Glandular Excision

Amber Bawa[1], Mirza Shehab Afzal Beg[1], Syed Sheeraz ur Rahman[2] and Sobia Yasmeen[1]

ABSTRACT

Objective: To determine the frequency of complications after single stage correction of gynecomastia, along with level of satisfaction in patients and surgeon 4 weeks post operatively

Study Design: Prospective cohort study.

Place and Duration of Study: This study was conducted at the Department of Plastic Surgery, Liaquat National Hospital, Karachi from April 2014 to March 2017.

Material and Methods: Informed consent was taken from all patients enrolled. The surgical technique consisted of liposuction and excision of the glandular tissue by minimal Periareolar incision. Skin excision was done where needed. Post operatively, patients were followed for complication rate and 4 weeks postoperatively both patient and surgeon were asked to grade their level of satisfaction.

Results: 26 patients were enrolled and analyzed. Over all, complication rate was 15% (4/26). One developed hematoma for which he required re-operation, one had irregularities and two had flattening of chest. Patient Satisfaction was 85% & Surgeons Satisfaction was 87%.

Conclusion: Liposuction along with glandular & skin excision decreases post-op nipple projection and have aesthetically pleasing results with a low rate of complications and excellent patient & surgeon's satisfaction.

Key Words: Gynecomastia, suction-assisted liposuction, periareolar incision, satisfaction rate.

Citation of articles: Bawa A, Beg MSA, Rahman SS, Yasmeen S. Single Stage Correction of Gynecomastia: Liposuction & Glandular Excision. Med Forum 2017;28(9):2-5.

INTRODUCTION

Gynecomastia (GM) is a benign condition of the male breast in which there is enlargement of mammary gland[1]. GM is classified into 4 grades of increasing severity. It can be asymmetrical and often bilateral. Patients usually present because of cosmetic and psychological problems[2]. Global data showed a 32-36% prevalence worldwide[3]. Treatment of gynecomastia varied from direct surgical excision to other techniques mainly liposuction or combination of both. Skin excision is done according to the grade. Procedures like ultrasound-assisted liposuction, mammotome mastectomy arthroscopic shaver, or endoscopic removal were introduced to decrease the morbidity of conventional excision but these procedures don't work alone for correction of all types of gynecomastia[4,5]. The goal of surgical treatment is to achieve a pleasant shape of male breast and chest wall with acceptable scars, no nipple projection and skin irregularities, preservation of nipple and areola sensation and acceptable complication rate[6].

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We observed that after liposuction alone there was still some degree of nipple projection [fig: 1A], which needed to be addressed. In this study, we will review our personal experience of using a combination of liposuction and a subsequent surgical excision through a peri-areolar incision in a single stage along with skin excision if needed.

To date, no studies have been performed in Pakistan analyzing the patient and surgeons satisfaction after single stage correction of gynecomastia. Our study also aims to evaluate patient & surgeons satisfaction, furthermore assessing our complications frequency.

MATERIALS AND METHODS

It is a prospective cohort study conducted at the Department of Plastic Surgery, Liaquat national hospital, Karachi from April 2014 to March 2017.

Inclusion Criteria:

1. 18 years of age or above
2. Gynecomastia regardless of any cause
3. Agrees to participate

Exclusion Criteria:

1. Age below 18years
2. Not willing to participate

Informed consent was taken from all patients. Post procedure all patients were discharged the next day and were followed in outpatient clinic weekly for one month to observe the complication rate and to take measures which are required accordingly. At 4weeks chest belts were removed and both patient and surgeon

were asked to grade there level of satisfaction. All data entered in SPSS version 21 and results were analyzed. Descriptive analysis was used using percentages for quantitative variables. For continuous data , mean with SD was used.

- **Assessment parameters:** complications like seroma, hematoma, abscess, partial nipple necrosis, irregularities, asymmetry, flattening of chest & need for re-operation was included. Operating surgeon satisfaction & patients satisfaction was scored from 1 to 5 based on a review of comments during the post-operative visit and was rated according to the following scale 5: excellent, 4: good, 3: fair, 2 and below: poor.
- **Surgical technique:** pre-op marking was done in sitting position. Under general anesthesia, both breasts were infiltrated by tumescent technique (1 liter n/s + 1 ampule adrenaline + 2 ampules of plain 2% Xylocaine + ½ kenacort). Chest incision is given 6cm below inframammary line less than a cm and liposuction was done. A peri-areolar incision was given and glandular tissue was excised (fig:1 B). Skin excision was done if needed. Hemostasis secured, wound closed & chest belt placed.

Postoperative care & follow-up: early mobilization was done. Watched for any collection, hematoma or nipple necrosis. Patient was discharged on 1st post-operative day and was called for follow-up weekly for one month and then monthly as needed. Chest belt was in place for 4 weeks.

RESULTS

Total 26 patients underwent surgical treatment for gynecomastia. All were bilateral (52 breasts). Mean age was 32 ± 6.776 years (range, 18 to 48 years) & mean follow-up was 2 ± 1.356 months (range 1 to 6 months). All patients underwent liposuction & glandular excision only one patient needed skin excision. Post procedure one patient developed hematoma for which he required re-operation, one had contour irregularities and two had flattening of chest. Over all complication rate was 15% (4/26) as given in Table No. 1.

Table No. 1:Complications observed postoperatively after single stage correction of gynecomastia

Complications	Number of patients (N=26)
Seroma	0
Hematoma& Reoperation	1(4%)
Contour Irregularities	1(4%)
Flattening of the chest	2(8%)
Abscess	0
Partial nipple necrosis	0
Asymmetry	0

Over all 85% (22/26) of patients were happy (rated excellent & good) with the final outcome. 23% (6/26) rated as excellent, 62% (16/26) rated as good only 15% (4/26) were not happy with their results n rated fair. None of patients rated poor (Fig# 2).

Over all of 87% (23/26) patients, surgeon was happy with the final outcome. He rated 30% (8/26) as excellent, 57% (15/26) as good & 13% (3/26) as fair (Fig# 2).

Fig No.1: A) Post-liposuction still has some degree of nipple projection.

Fig No.1: B) Glandular tissue excision by periareolar incision gives better

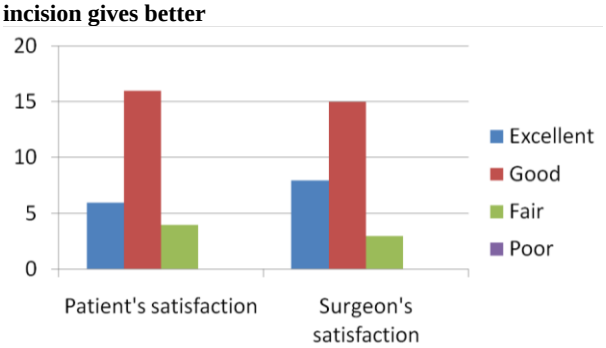

Figure No. 2: Patient's & Surgeon's satisfaction

DISCUSSION

Gynecomastia is a common breast lesion in males, accounting for up to 91.9% of male breast disorders.[7] Causes of gynecomastia vary, but most common are either idiopathic or persistent pubertal gynecomastia without a significant secondary cause[8]. There are several case series in which no cause could be identified in majority of the patients.[9]

Gynecomastia is worrisome for all age groups. Adolescent usually present because of cosmetic and psychological problems[2] as it is a source of embarrassment. Elderly are usually concern about the possibility of cancer.

Many surgical techniques are available for the treatment of gynecomastia. However, in literature, a large number of surgical procedures have been described and there is no generally accepted satisfactory approach[10]

The combined use of liposuction with open excision which we have used in our study was first introduced by Teimourian and Perlman.[11] Later Hammond and his colleagues described a combined technique using ultrasound assisted liposuction combined with surgical excision in 2005[12], & in 2007 by a group from the Netherlands, where they used suction assisted liposuction combined with surgical excision[13].

In this study, suction-assisted liposuction with glandular excision was used in all grades of gynecomastia. Skin excision was done only in one patient as most of our patients were young mean age was 32 ± 6.776 years (range 18 to 48 years) & there skin has amazing capability to contract after procedure[5].

Complication rate in our study was 15% (4/26). Most common was flattening of chest, occurred in two patients. One patient developed hematoma for which he required re-operation& one had contour irregularities. Similar study reported there complication rate to be 0% (0/32) by Yang HY et al in 2007[14]. In 2008 Lius et al reported there complication rate to be 12.5% (5/40) which included 2 hematoma & 3 peri-areolar necrosis[15]. El-Sabbaghet al reported in 2016 a similar study and there complication rate is 36% (5/14) included 3 seroma & 2 peri-areolar skin necrosis[16]. On comparing to similar work done worldwide, our complication rate was almost in the same range that shows our technique is according to standards worldwide.

Post operatively no drains were used in our patients as drains causes discomfort to the patient, drain sites can leave conspicuous scars and may represent as potential sources of tract formation or infection. Traditionally it was believe that it is use to remove undesirable postoperative fluid & minimize tissue dead space, but Keskin M et al reported in a study that when intraoperative tumescent fluid and a postoperative compression garment are used, omitting the placement of closed-suction drainage increases patient comfort without the risk of increasing complications from gynecomastia surgery.[17] In a study by El-Sabbagh et al[16] drains were routinely used and patients were allowed to discharge on 1st day with drains, but there is no significant difference in complication rate.

Patient satisfaction is the key determinant of success of any cosmetic procedure. Ridha et al[18] concluded that men with gynecomastia constitute a specific group of patients, in which a measure of treatment success should be patient's satisfaction. We also measured our treatment success by patient satisfaction which is 85%in our study. Md. Sohaib Akhtaret al.[19] reported their patient's satisfaction rate to be 86% & Taheri AR et al[20] reported a mean patient satisfaction score of 8.1±1.396 with the range of 5-10 from total 10 score that is equal to 81%. This shows treatment of gynecomastia regardless of any surgical technique used is beneficial for patient's psychological outcome.

Surgeon's satisfaction rate in our study is 87%. Taheri AR et al[20] reported 8.36 (83.6%) total mean of physician satisfaction score. Surgeon himself rated the procedure which is one of the limitations of both the studies.

Over all our study shows promising results for aesthetic and psychological uplift of the patient but as it has limited no of patients and no control group which should be considered in future.

CONCLUSION

Gynecomastia of all grades was corrected by the same approach. Skin excision was added to a patient who had skin excess. There is low complication rate and excellent patient & surgeon's satisfaction in our study. We recommend that Liposuction with glandular & skin excision can safely be done in the same sitting with aesthetically pleasing results.

Acknowledgement: We thank our colleagues of Liaquat national hospital who supported during the course of our research period.

Author's Contribution:

Concept & Design of Study:	Mirza Shehab Afzal Beg
Drafting:	Syed Sheeraz ur Rahman
Data Analysis:	Amber Bawa & Sobia Yasmeens
Revisiting Critically:	Syed Sheeraz ur Rahman
Final Approval of version:	Mirza Shehab Afzal Beg

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Partial Edentulism

A Survey of Partial Edentulism Using Kennedy's Classification: A Single Center Study

Irum Munir Raja[1], Farah Naz[1] and Muhammad Athar Khan[2]

ABSTRACT

Objective: To determine the frequency of Kennedy's classification in partially edentulous patients visiting Liaquat College of Medicine and Dentistry, Karachi.

Study Design: Cross Sectional Study

Place and Duration of Study: This study was conducted at the Department of Prosthodontics at Liaquat College of Medicine and Dentistry, Karachi from February 2016 to March 2017.

Materials and Methods: A sample of 298 patients both male and females were examined by using Kennedy's classification in partially edentulous patients. The study included adult patients 15 years and above age group, all patients were clinical examinations follow Kennedy's classification. Kennedy's classes I, II, III and IV are classified according to age and sex of patients, also in the maxilla and mandible arch.

Results: The study also brought forth the incidence of Kennedy's Class II and Class III being the most prevalent in the oral cavity as compared to the Class I and Class IV, Class IV being the least commonly occurring.

Conclusion: The most common were Class II and Class III classification in both arches, mostly in the mandibular arch, points towards the fact of limited oral hygiene awareness in the patients.

Key Words: Kennedy classification, partial edeuntulism, dental arch

Citation of articles: Raja IM, Naz F, Khan MA. A Survey of Partial Edentulism Using Kennedy's Classification: A Single Center Study. Med Forum 2017;28(9):6-8.

INTRODUCTION

Tooth loss is prevalent amongst all age groups. A wide range of reasons can be listed as to why and how tooth loss occurs. The most common ones include gross dental caries, periodontal disease, dento-alveolar trauma, tooth avulsion due to accidents, orthodontic extractions, radiotherapy and oral cancer[1-3]. Teeth are essential for the foremost way of obtaining nutrition, i.e., mastication. Including that, phonation and esthetics are some indispensable key attributes to the presence of teeth in the oral cavity[4-6]. It is very important at times when partial edentulousness occurs at crucial places where loss of function, e.g. phonetics or mastication, hinders patient's well-being and thus the patient loses his / her self-esteem[7].

Partial edentulism usually refers to absence of few teeth from an arch within the oral cavity which leaves behind a space, or gap, between natural teeth, called the edentulous space[16].

The different patterns which emerge with partial edentulism in patients referred for treatment indicate the dental problems too, which can be addressed along with creating a simple classification system to confer the pattern of edentulism. Kennedy's classification of partial edentulism is used in this case.

Kennedy's classification of partial edentulism actually confers the pattern of edentulism within the oral cavity as it creates an image of the type of tooth loss. Plus, it also confers within the mind's eye the type of partial denture, it's design and necessary components within it that need to be constructed, a rough idea if anything[8-9].

According to past dental literature, there are a total of sixty-five-thousand potential combinations relating to partial edentulism prevalence in both arches within the oral cavity. To make matters simple, henceforth, a general emerging pattern is considered in a great majority of maxillary and mandibular arches, which makes the process easier to understand by the dental team of professionals[17].

The objectives of this study is to determine the prevalent types of partial edentulism in the oral cavity in terms of Kennedy's classification, the arch in the oral cavity in which partial edentulism is most commonly encountered, and gender correlation with edentulism.

MATERIALS AND METHODS

A descriptive cross sectional study enrolled patients through non probability consecutive sampling. Patients were included who fulfilled the inclusion criteria and agreed to participate in the study after taking a written informed consent. An inclusion criterion includes gender, partial edentulous space in age between 15 and 80 years. The study did not include patients with lack of

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third molar, unerupted or absence of teeth, apical and loose teeth. According to previous studies, 26.9% cases were found to have a partial edeuntulism in mandibular arch[6] with a power of 80%, a confidence interval of 95%, and an alpha level of 0.05, the required sample size was 298. Statistical analysis was performed on SPSS version 20 for windows. Results were presented as frequency and percentages in the form of tables and graphs.

RESULTS

A total of 97 patients were part of the edentulism in the two arches and 201 patients had only one arches with a total of 298 partially edentulous arches.

Table No.1: Demographic Characteristics of Study Participants

Mean Age (years)	35.4 ± 9.1
Gender (n%)	
Male	168(56.4)
Female	130(43.6)
Education Level (n%)	
Illiterate	66(22.2)
Primary	127(42.6)
Secondary	59(20)
Intermediate	34(11.4)
Bachelors	12(3.8)

Table No.2: Age Wise distribution of Kennedy Classes

	Kennedy Class n(%)			
Patient Age(years)	Class I	Class II	Class III	Class IV
15 - 24	0	3(5.1)	4(2.0)	0.0
25 - 34	14(50)	32(54.2)	115(57.5)	4(36.4)
35 - 44	9(32.1)	19(32.2)	57(28.5)	5(45.5)
45 - 54	4(14.2)	5(8.5)	13(6.5)	2(18.2)
55 - 64	0	0.0	5(2.5)	0.0
65 - 74	1(3.7)	0.0	3(1.5)	0.0
75 and above	0	0.0	3(1.5)	0.0

Figure No.1: Frequency of different Kennedy's classes among the maxillary and mandibular arches.

As shown in Figure 1, in both the upper jaw and the lower jaw third category of arches is the more frequent pattern partially edentulism (72% in the mandible, 54% in the maxilla) and fourth category is the least pattern encountered (2.6% in the mandible and 6% in maxilla). Kennedy's class first, third and fourth is more common in men than women and the second category is more frequent in women.

DISCUSSION

Various studies have been undertaken on the incidence of patterns of Kennedy's classification all around the world. The Kennedy's classification is highly variable from country to country due to many factors like health and educational status, awareness of oral health care and maintenance, socio-economic status, and the importance of oral health[10].

Several studies have shown that partial edentulism is more common in the mandibular arch than the maxillary[6, 11-15]. Which agrees with the findings in the current study which also resulted in mandibular arches being more prevalent in partial edentulism, most probably due to teeth erupting in it before they erupt in the maxillary arch[13].

Also the study demonstrated that men commonly present with partial edentulism than females. Which accounts for the dental literature, for example, Hoover *et al*. also reporting that partial edentulism is more prevalent in males than females[18]. However, according to another study by Marcus *et al*. stated that there was no possible correlation between partial edentulism and its prevalence in males and females being significant[17, 19].

The results in this study are also in agreement with the fact from other studies in the dental literature that Kennedy class III is the most prevalent in maxillary and mandibular arches[20-24].

Limitations, though, in this study was that the educational status of the patients were taken in to account to determine the level of education in relation to the incidence of partial edentulism in the corresponding patients. Also, that most of the patients presenting with partial edentulism were of middle, or low, socio-economic status, so a limited group of patients was targeted, with not a large cross-section sampling as would have been preferred.

The least common but still present Kennedy's class IV classification occurred mostly in the maxilla which attributes concerns to the trauma rates and accidents mostly associated with this arch and these teeth being affected most commonly.

CONCLUSION

The most common incidence of Class II and Class III classification in both arches, mostly in the mandibular arch, points towards the fact of limited oral hygiene awareness in the patients visiting Liaquat College of Medicine and Dentistry. The need to mete out greater awareness of dental hygiene thus is brought into the limelight. The frequency of higher trauma rates in

maxilla and the resultant class III classification being relatively common associated with this arch shows that extra safety measures need be provided to patients, especially growing young adults.

Author's Contribution:

Concept & Design of Study:	Irum Munir Raja
Drafting:	Muhammad Athar Khan
Data Analysis:	Farah Naz
Revisiting Critically:	Muhammad Athar Khan
Final Approval of version:	Irum Munir Raja

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Septicemic Burn Patients

Cross Sectional Study for Pseudomonas Aeruginosa Prevalence in Septicemic Burn Patients

Rakhshinda Younus[1], Jai Kirshin Ambwani[2], Dial Das[3], Mohammad Asif Durrani[4] and Akber Ali Soomro[2]

ABSTRACT

Objective: To determine the bacterial profile in patients with burns that cause septicemia.
Study Design: Cross sectional study
Place and Duration of Study: This study was conducted at the Department of Microbiology, Basic Medical Sciences Institute (BMSI), Jinnah Postgraduate Medical Centre (JPMC), Karachi from February 2014 to June 2014.
Materials and Methods: A total of 100 burn patients were registered who were admitted to the Burns Ward, Civil Hospital Karachi over the 2 weeks' period.
Results: Only 42 blood specimens from patients were processed. 10 (23%) were culture positive. Specimens yielded 15 microorganisms. Of this number, 13 (86.66%) were Gram-negatives and 2 (13.3%) were Gram-positive. Among the Gram-negatives, Proteus vulgaris was 3 (20%) while Staphylococcus aureus was 2(13.33%). Pseudomonas aeruginosa were the most common accounting for 7 (46.66%).
Conclusion: Complications due to sepsis still remain a remarkable cause of morbidity and mortality in severely burned patients. An adequate early treatment after an immediate diagnosis of causative organisms in these cases gives an encouraging outcome along with significant patient survival results.
Key Words: Burn patients, Septicemia, Gram positive bacteria, Gram negative bacteria

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INTRODUCTION

An infection due to microbes during thermal injury in burn patients is always a main problem in management (Kumar et al., 2010)[1]. Thermal injury damages the skin barriers which likely stop the entry of microorganisms (Singh et al., 2003; Barret et al, 1999; Murray and Finegold 1984; Lari AKet al, 1998; Nasser et al, 2003)[2,3,4,5,6]. Hemostatic changes due to severe burns are not comparable to other types of injuries where there is a high mortality rate in initial phase (Begum et al., 2011)[7]. Skin is the largest organs in body in terms of size and coverage. An intact human skin is vital in preserving the homeostasis, thermoregulation along with protection against infections.

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Burn injuries create a breach in skin surface and hinder vital functions that are essential for sustaining life thus allowing microbial colonization of burn wound (Chalise et al., 2008 & Naseer et al., 2003)[8,9].
Sepsis brought about in burn patients is common because of bronchopneumonia,pyelonephritis, thrombo-phlebitis and woundinfections; most of the septic events occur during initialtwo weeks of the burns. Extensiveburns cause of death in affected persons (Begum et al., 2011)[7].
Fermentative gram negative bacilli, Pseudomonas aeruginosais emerging as an important pathogen as causative agent in burn patients (Vidal et al, 2003)[9] and persists as a major hospital-acquired infection threat to burn patients. It has been observed that resistance is arising against multiple antimicrobial drugs frequently complicates the treatment of Pseudomonas aeruginosa infection (Naqvi et al., 2005)[10]. Infections with Pseudomonas aeruginosa began to be seen in increasing numbers. From 11% to 30% of burns are contaminated by microorganisms of the gastrointestinal tract, skin and upper respiratory system, including Pseudomonas aeruginosa, Staphylococcus aureus, Escherichia coli, Klebsiella species, Enterococcus species and Candida species (Begum et al, 2011)[7].

MATERIALS AND METHODS

This cross-sectional study was conducted between February 2014 to June 2014 in the Department of

Microbiology, Basic Medical Sciences Institute (BMSI), Jinnah Postgraduate Medical Centre (JPMC), Karachi. Prior approval was in hand from the institutional ethical review committee and an informed written consent was obtained from each patient/guardian. Patients were registered for the study irrespective of age or gender, degree, percentage or duration of burn.

A total 239 culture samples were divided into two groups. 197 samples of pus were taken from wounds and 42 samples of blood were taken from suspected patients of septicemia were collected from 100 registered patients. After taking necessary aseptic measures, the samples were collected and necessary data was filled accordingly. Each wound swab was taken from infected wounds after cleaning of any ointment on day 7 and 14 after admission (Ekrami and Kalantar, 2007)[11] and it was inoculated on Blood agar, MacConkey agar and Sabourad Dextrose agar (SDA) (Altoparlaket al., 2004)[12]. These plates were incubated aerobically at 35±2°C for 24 hours. Inoculated blood culture bottles were incubated for 24 to 48 hours (and even up to one week where needed) at 37°C and then examined for turbidity indicative of positive growth. After overnight incubation, established microbiological methods, which include colonial morphology, Gram's staining and biochemical characteristics were used for identification according to CLSI (Clinical & laboratory standard institute) criteria.

Each significant isolate was identified by colonial morphology, Gram staining and biochemical reactions according to the standard procedure. Blood samples were collected after all aseptic measures and in case of suspected septicemia5-10 ml of blood was collected in a disposable syringe aseptically. Blood was pushed into a bottle containing 50 ml of brain heart infusion broth where blood was mixed in broth by tilting or rotating the bottle gently and was transported to the Microbiology Department of BMSI in minimum time (Collee and Marr, 1999)[13]. The blood culture broth was incubated at 37°C for 7 days. Three sub cultures were made after 24 hours, 72 hours and on the 7th day over Blood, MacConkey and Sabouraud's dextrose agar respectively (Manoharan et al, 2010)[14]. Established microbiological methods, which include colonial morphology, Gram's staining and biochemical characteristics, were used for identification.

RESULTS

Table 1 shows the comparison of positive cultures, between wound swabs and blood specimens taken from 100 patients. A total of 239 specimens of wound swabs and blood were collected. Out of 197 wound swabs microbial growth was found in 185 (93.9%) cases. While on the other hand, out of 42 blood cultures microbial growth was found in 10 (23.8%) cases. Data shows higher percentage of positive cultures in wound specimens as compared to blood specimens. However, 44 (18.41%) specimens did not show any microbial growth.

Table 2 shows different pathogens (n=15) isolated from patients suffering from septicaemia. Most predominant pathogen isolated was Pseudomonas aeruginosa i.e. 7 (46.66%).

Table 3 shows that among 10 patients of septicemia 50% were suffering from infection due to single pathogen while 50% were having infection due to more than one pathogen.

Table 4 shows the comparison of bacterial isolates recovered from blood cultures with that of organisms recovered from wound specimens. Out of 10 cases of septicemia 7 (70%) isolates were similar to those recovered from burn wounds, while 3 (30%) were different to those, isolated from burn wounds.

Table No.1: Comparison of positive cultures between wound and blood specimens

Type of specimen	Number	Culture +ve
Wound	197	185 (93.9%)
Blood	42	10 (23.8%)
Total	239	195 (81.5%)

Table No.2: Microorganisms isolated from patients of septicaemia (N=15)

Organisms	Number	Percentage
Pseudomonas aeruginosa	7	46.66
Proteus vulgaris	3	20.00
Klebsiellapneumonieae	2	13.33
E.coli	1	6.66
Staphylococcus aureus	2	13.33

Table No.3: Percentage of solitary and mixed growth from blood specimens in patients of septicaemia

No. of blood culture	Solitary growth (%)	Mixed growth (%)
10	50%	50%

Table No.4: Similarity of bacterial isolates recovered from blood and wound specimens

No. of septicaemia	Isolated organisms similar to burn wound	Isolated organism different from burn wound
10	7 (70%)	3 (30%)

DISCUSSION

Various studies show that burn patients are more vulnerable to infections. In the present study septicemia occurred in 10% of patients that is similar with the studies conducted by Oncul et al. (2009), Ekrami and Kalantar (2007) and Alp et al. (2011)[15,11,16] in which septicaemia occurred in 19.9%, 18.6% and 17% patients respectively, which is in accordance to this study. Another study done in tertiary care unit in

Bangladesh showed no growth in 5 blood samples (Begum et al., 2011)[7]. Also study done by Ressner et al. (2008)[17] found 92/1258 (7.31%) bacteremia in burn patients. The most frequent pathogens were Staphylococcus aureus and Pseudomonas aeruginosa while this study revealed Pseudomonas ascommonly isolated pathogen; these findings are partially similar to this study. Burn wounds remained the main source of sepsis in these patients which might be due to emergence of multi-resistant hospital-oriented pathogens that prevailed in the burn units and transformedin to the normal flora in patients within few days after stay in hospital. The bacteriological profile of burn units in various hospitals has been changed worldwide according to various reports but P. aeruginosais considered to be related with transportation of patients from one place to other. Murray et al. (2007)[18] showed most recovered bacteria from blood culture were Pseudomonas aeruginosa (26.09%) 19/73. Mahar et al. (2010)[19] observed 62.7% prevalence of NFGNB (Nonfermenting Gram-Negative Bacilli) in bacteremia. The finding of our study is in accordance to this study (70%). This variation in burn patients is showing the empirical use of antibiotics in their burn units. Overcrowding, massive contaminated environment, lack of isolation and improper hand washing are few common causes of increase rate of burn wound infections and sepsis (Saha et al., 2011)[20].

In spite of advancements in primary wound care of burn patients, i.e. antimicrobial use (both topical as well as systemic), debridement of wound in early stages; the death still ensues due to the sepsis that still stays as a major cause in these cases. A dysfunctioning immune system along with bacterial colonization of skin and long-term hospital stay followed by invasive methods for diagnosis and treatment purposes all add to sepsis of burn individuals (deMacedo and Santos, 2005)[21]. Burn patients are at increased risk of hospital-acquired infections due to extended stay at burn units. By the time this change will be noticed by these units that there is a remarkable change in prevalence of common pathogenic organisms (Begum et al., 2011)[7].

CONCLUSION

Complications due to sepsis still remain a remarkable cause of morbidity and mortality in severely burned patients. An adequate early treatment after an immediate diagnosis of causative organisms in these cases gives an encouraging outcome along with significant patient survival results.

Author's Contribution:

Concept & Design of Study:	Rakhshinda Younus
Drafting:	Jai Kirshin Ambwani
Data Analysis:	Dial Das& Akber Ali Soomro
Revisiting Critically:	Mohammad Asif Durrani
Final Approval of version:	Rakhshinda Younus

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Flexor Tendon Injuries Repair

Key Factors in Zone V Flexor Tendon Repair, Our experience at Liaquat National Hospital

Batool Urooj Rajput[1], Syed Sheeraz ur Rahman[2], Mirza Shehab Afzal Beg[1] and Maryam Noor[1]

ABSTRACT

Objective: The aim of this study is to analyze the outcome of long flexor tendon injuries in zone 5 when repair done using Modified Kessler Technique.

Study Design: Descriptive case series study

Place and Duration of Study: This study was conducted at the Plastic surgery Department, Liaquat National Hospital, Karachi from January 2015 to June 2015.

Materials and Methods: It was a single centered descriptive case series. All tendons were repaired by Modified Kessler Technique and patients were assessed postoperatively at 2,4,6,8 and 12 weeks via goniometer. The Strickland scoring system was used to assess range of motion and data was recorded on SPSS v. 20

Results: On the basis of Strickland scoring system, good to excellent results were obtained in 79% of Flexor Pollicis Longus and 82% of other flexor tendons, while a small number had fair to poor results. Tendon dehiscence was seen in 2 FPL and 2 Flexor Digitorum Profundus). 3 patients required tenolysis after 6 months of surgery including 1 FPL and 2 FDS.

Conclusion: Early exploration with proper identification of structures, repair with meticulous technique along with early postoperative mobilization in a compliant patient are necessary to return to normal daily activities and leads to good results in majority of the patients.

Key Words: Tendon injuries, zone V, spaghetti wrist, modified Kessler technique, modified Belfast regimen

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INTRODUCTION

E.V. Lucas had once said 'the art of living is to show your hand' and this statement rightly explains the importance of hand. Hand is a vital organ which perform many functions which are essential for daily activities. Apart from its role in performing daily functions, it performs other essential work that ranging from gripping to touching to writing. Loss of hand function is a frightening experience; it not only effects the emotional status of an individual but also the socioeconomic status of the family specially in third world countries. Hand injuries in the form of fractures, tendon injuries, neurovascular injuries, or combination of all these, due to RTAs, glass cuts or non-accidental injuries are commonly seen.

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Tendons of hand are most vulnerable as it is beneath the skin and in lacerations, glass cut injuries and knives injuries tendons are first one to be injured. Tendons play a fundamental role by connecting the muscles to bone to allow the force to be transmitted from muscle to bones in order for joints to move. 90 % to 95 % of tendons comprise of tenocytes and tenoblasts whereas remaining 5% to 10% are composed of chondrocytes at the point of origin and insertion of muscle, vascular cells, capillary endothelial cells and smooth cells of the arterioles[1]. Prolonged disability following flexor tendon injury can result in physical and emotional instability of the patient.

The hand is divided into 5 zones because the management is specific for each zone. Zone 1 extends distal to the flexor digitorum superficialis (FDS) insertion and involves injury of the flexor digitorum profundus (FDP). Zone II (no man's land) is between the limits of the flexor tendon sheath which is at the A1 pulley and the insertion of the flexor digitorum superficialis. Zone III extends from the distal edge of the transverse carpal ligament and the A1 pulley, and involves injuries to the lumbricals. Zone IV involves the tendons within the carpal tunnel and zone V extends from the origin of the flexor tendons at their respective muscle bellies to the proximal edge of the carpal tunnel[2,3,4]. Zone V is most commonly injured zone.[5]

Patients are usually presented with either inability to flex the fingers, pain while flexing the fingers in incomplete injuries or with obvious cuts. In all 5 zones, tendon injuries are common. Zone V is most exposed and most vulnerable zone. Injuries in this zone are associated with injuries to arteries and nerves and hence this zone is most important zone[6,7].

Despite recent advances and researches, no guideline has been formulated for the management of different zones. Flexor tendon injuries can be associated with adhesions and loss of hand functions despite advance surgical techniques and high protocol rehabilitation programs.

Modified Kessler repair was employed for all tendon repairs as core suture with additional epitenon repair[8].

Repair of flexor tendons after injuries can show variable outcomes depending on surgeon's experience, extent of injuries and above all postoperative physiotherapy.

Modified Belfast regimen was used in which patient was asked to perform 10 active and 10 passive flexion of fingers and straightening all fingers till they just touch the splint on hourly basis[9]. The patient is asked to touch fingers to the pam in passive motion while palm is kept dressing free for ease of motion. The aim is to achieve the fingertip to palm distance of less than 1 cm in 2 weeks.

The Strickland scoring system sums the degrees of active flexion at the distal interphalangeal joint and the proximal interphalangeal joint and subtracts the degrees of extension deficit. The result is compared with an ideal of 175 degrees (total active motion)[9,10,11].

$$\frac{\text{(Active PIP+DIP flexion – (PIP + DIP losses of extension)}}{175^0} \times 100$$

Rating	Original	Modified
Excellent	85-100 degrees	75-100 degrees
Good	70-84 degrees	50-74 degrees
Fair	50-69 degrees	25-49 degrees
Poor	0-49 degrees	0-24 degrees

We present our experience with a known regimen modified according to our own culture.

MATERIALS AND METHODS

This descriptive case series study was conducted at Plastic Surgery Department, Liaquat National Hospital from January 2015 to June 2015.

Sample size: 50

Inclusion criteria:

- Patients between 10 years to 60 years
- Patients with long finger flexor tendon injuries involving zone V with no tendon loss.
- Neurovascular injuries requiring primary repairs

Exclusion criteria:

- Joint disease or connective tissue disorder.
- Past history of tendon or nerve repair.
- Presenting 10 days after injury.
- Associated hand fractures.
- Associated hand and radius and ulna fractures
- Non-complaint patients

Modified Kessler technique was used for the repair of all tendons. Double stranded core suture 3/0 or 4/0 proline or ethibond was used to repair the tendon and epitenon was repaired with circumferential 6/0 proline. Hand was kept in dorsal plaster splint with wrist in neutral or 20-30-degree extension depending on tightness of repair in order to keep tendon repair tension free. Metacarpophalangeal joints were kept at 90-degree flexion and interphalangeal joints fully extended. Active and passive movements were allowed in splint from 1st postoperative day according to modified Belfast regimen.

Splint was removed after 6 weeks but night splint was continued for further 2 weeks. Movements were assessed at 2,4,6,8 and 12 weeks via goniometer.

Range of motion was assessed by Strickland scoring system in which active PIP and DIP flexion and PIP and DIP loss of flexion measured and graded according to the score.

Data was analyzed was used via SPSS v.20. Quantitative data was presented in frequencies.

RESULTS

Out of 24,462 emergency visits from January 2015 till June 2015, 1260 patients presented with hand injuries which accounts for 5.1% of all emergency consultations. Total number of 340 patients were picked to have tendon injuries out of which 192 were flexor tendon injuries of all zone. This was further sub-divided according to zonal injuries. Zone I had 26 patients whereas 52, 34, 13 and 50 were in Zone II, III, IV and V respectively.

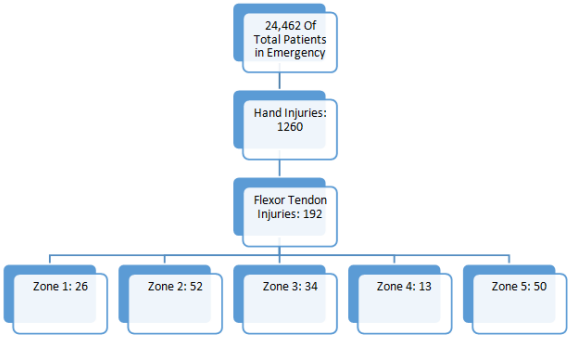

Figure No.1: Details of sub-divided zonal injuries

In our study, mean age was 32 years with male to female ratio was 1.7:1. Non-dominant hand was commonly injured as compared to dominant hand i.e. 28 non-dominant and 22 were dominant

191 tendons were repaired and there were further evaluated in terms of finger or thumb involved.

According the Figure 2, FDS of middle finger was most commonly injured whereas FDP of little finger was least commonly injured.

79% of Flexor Pollicis Longus (FPL) and 82% of other flexor tendons showed good to excellent results and a small number had fair and poor result (Figure: 3). 4 patients had tendon dehiscence (2 in FPL and 2 in FDP). 3 patients required tenolysis after 6 months of surgery including 1 FPL and 2 FDS

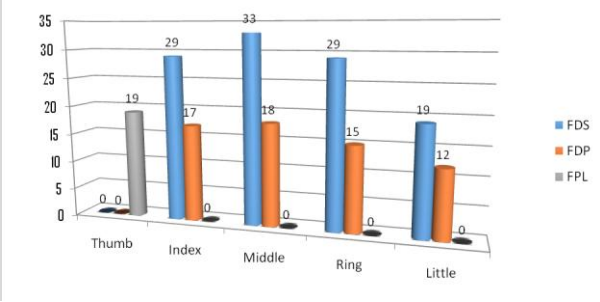

Figure No.2: Number of Tendons injured.

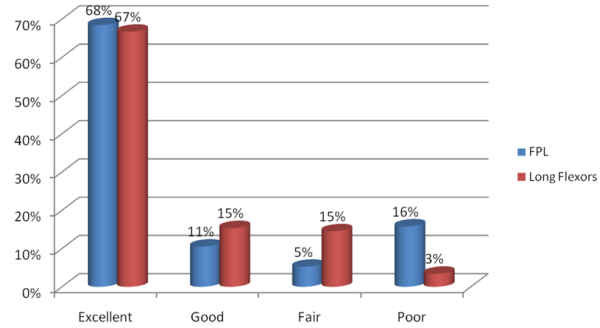

Figure No.3: Outcomes

DISCUSSION

Hand is the most active part of body and most vulnerable with least protection. The normal integrity of hand is essential for its function even a trivial injury can cause severe loss of its function. Volar wrist laceration has potential to cause severe debilitating outcomes[12]. As per Puckett and Meyer[13] minimum of three completely transected structures in lacerations occurring between the distal wrist crease and the flexor musculotendinous junctions at least one nerve and often a vessel was defined as spaghetti wrist. Some studies define it as injuries involving 10 structures or more with a nerve and artery and it is a common presentation in zone V. Definition of spaghetti wrist is not clearly defined[14]. Preoperatively, proximity of structure helps in accurate identification and repair demands high skills and precision. In postoperative period, early physiotherapy is essential for prevention of adhesion[15].

Olivier et al compared two techniques of repair in his study. In Motion-stable wire suture group, splint was not applied and early motion was allowed as compared to modified Kessler suture but the outcome was similar in both the group[16]. Hudson and Dejager did study on 15 patients and 76 flexors were repaired and found that 5 had satisfactory results however 20 and 15 had fair and poor outcomes[17].

Factors like mechanism of injury, time since injury, surgeon's experience and technique, associated neurovascular injuries, and postoperative rehabilitation are important to obtain satisfactory results. In fast movers, tendon rupture was more common whereas in those who are slow movers developed adhesion and this was also observed in our study.

There has been a debate in literature regarding early mobilization versus late mobilization in order to give resting time for tissues to heal but more recent studies are inclined towards early mobilization as this had been shown to be more beneficial in terms of function of hand.

Kleinert regime which supported passive mobilization was initially used involved dorsal splinting of hand blocking the wrist in 45 degrees of flexion and MP joints in 10-20 degrees, traction was applied by rubber band directed to the finger nail from the proximal wrist and patient was instructed to actively extend fingers 10 times every hour, allowing the rubber band to flex the fingers[18,19]. Hegazy et al did a case series and concluded that early mobilization improves the outcome as well as minimize the risk adhesion as it is a limiting factor in return of adequate hand function[20]. In our study, this is further endorsed, as we had patients from mix backgrounds from PhD to manual worker and this modified Belfast regimen was reproducible by majority of our patients resulting in better outcome.

Our study had limitations that it is a single centered study and the function of FCU and FCR and PL were not assessed. Associated neurovascular injuries need to be addressed separately and were included in our study.

In terms of compliance and following mobilization orders, each patient was different and subjective assessment was being done hence a proper protocol needs to be devised to have objective assessment.

CONCLUSION

Acute hand injuries are common presentation in Emergency department. Proper and focused history and physical examination is needed to identify the injured structures including tendons, nerves and arteries. Early exploration with proper identification of structures and repair with meticulous technique along with early postoperative mobilization in a compliant patient are necessary for satisfactory results. If properly managed in postoperative period, functional disabilities can be minimized and patient can be returned to normal activities early.

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Original Article

Methicillin Resistant in Diabetic Foot

Frequency of Methicillin Resistant Staphylococcus Aureus in Diabetic Foot Infections

Makil Shah[1], Mohammad Shoaib[1], Abdul Razaq[2], Mohammad Ashraf[3] and Wasim Ahmad[4]

ABSTRACT

Objectives: The objective of the study was to determine the frequency of Methicillin resistant Staphylococcus aureus in diabetic foot infections.

Study Design: Descriptive / cross sectional study.

Place and Duration: This study was conducted at the Department of Surgery, Bannu Medical College Bannu from 03.06.2014 to 02-12-2015.

Materials and Methods: In this study, a total of 140 patients presenting with diabetic foot ulcers were recruited through consecutive sampling and subjected to detection of MRSA.

Results: The mean age of the patients was 42.2 $\pm$ 8.3 years. We had 51.4% males & 48.6% females in the study population. MRSA was detected in 23.6% of diabetic feet.

Conclusion: MRSA is a highly prevalent problem among our local population with diabetic foot and we recommend more research studies focusing on its risk factors so that preventive measures may be taken.

Key Words: Diabetes mellitus, Diabetic foot, Staphylococcus aureus, Methicillin Resistant Staphylococcus aureus

Citation of articles: Shah M, Shoaib M, Razaq A, Ashraf M, Ahmad W. Frequency of Methicillin Resistant Staph Aureus in Diabetic Foot Infections. Med Forum 2017;28(9):17-20.

INTRODUCTION

Diabetic foot infection is a clinical syndrome characterized by local findings of inflammation or purulence (sometimes accompanied by systemic manifestations of sepsis) occurring in site below the malleolus in a person with diabetes. Diabetes is a metabolic disorder affecting 371 million people worldwide. At present Pakistan has around 6.6 million people with diabetes; the number is anticipated to rise 11.4 million by year 2030.[1] Diabetic Foot infections are seen in up to 20% of diabetic patients and hence are the most commonly faced surgical problem.[2] Unless treated appropriately. It leads to amputation or disarticulation of varying levels, at least ones in such patient's lifetime. Worldwide, several studies have been conducted with respect to the bacteriology and antibiotic sensitivity pattern.[2] Staph aureus (S.aureus) is an enzyme "coagulase" positive species, which makes its colonies on human skin and nasopharynx. By doing this, it causes a variety of suppurative infections. Besides human skin structure infections, S. aureus may also causes some more somber infections such as phlebitis, pneumonia, meningitis, urinary tract infections, mastitis, diabetic foot infections and deep-seated infections, etc such as Osteomyelitis and endocarditis.[3]

The sole purpose of the Methicillin antibiotic was to introduce it in clinical practice in order to fight against infections that are resultant of penicillin resistant Staph species.

With time passage, a part of organisms acquired resistant to methicillin and the resistant strains were termed as "methicillin resistant Staph aureus" (MRSA). These resistant strains are needed to be treated with some different types of antibiotics. Since 1961, MRSA frequency has proved to be increased gradually and now hospital and community associated MRSA infections are a rising health apprehension around the globe.[4]

Nosocomial infections are majorly caused by MRSA with a lethal strain of Healthcare acquired methicillin-resistant S. aureus (HA-MRSA). It has urbanized confrontation to more than a few antibiotics. HA-MRSA infections might include surgical wound infections, UTIs, pneumonia , bloodstream and diabetic foot infections. HA-MRSA infections are treated with numerous antibiotics including trimethoprim-sulfamethoxazole, vancomycine, clindamycin etc as a first choice.[5]

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Bacteria makes their colonies when there is some wound infection in the body. Proper infections are developed if the colonization gets association with many other factors including deminished blood supply, as in the diabetic foot infection, inherent virulence of specific bacteria like S.aureus along with host immune factors etc. All types of wound can gets contaminated through various factors including surrounding skin, the local environment, and endogenous patient. [5]

Furthermore, the hospital stay, surgry techniques & extended or broad-spectrum antibiotic treatment of patient might causes bacterial colonization around wound or infection, or both, with opposing organisms including MRSA.[6] The antibiotic-resistant bacteria pretense a chief apprehension to wound care because of their ability to resist many of the antibiotics used today to treat infections.[7]

MRSA infections are seen in both developed and developing countries. In Pakistan, MRSA has been established in health care settings and is emerging as a main nosocomial pathogen. Reports are there that shows that it has prevailed in local population with uneven frequencies having high incidence in the major cities of the country where its ratio is 61%.[8] The data revealed that out of 52 S. aureus isolates, 19 (36.5%) were MRSA. Overall, S. aureus was found to be the main organism which contaminates wound infections.[3]

Since the various studies show varied frequencies of the MRSA in diabetic foot infections and have great discrepancies in these. The present study is designed to find out frequency of MRSA in local population to improve empiric antimicrobial therapy. As there is no local study available on the same topic. The frequency of MRSA may be high locally as the hygienic conditions are very different locally as compared to developed countries.

MATERIALS AND METHODS

This was a descriptive (Cross-sectional study) conducted at the surgical department Bannu medical college Bannu. Data collection was done through Consecutive (Non-probability) sampling from (03-06-2014 to 02-12-2015).Sample size was 140 using 36.5% MRSA in diabetic foot[2], 95% confidence level with 8% margin of error with the help of WHO software for sample size determination. Patients admitted for the treatment of the diabetic foot infection and meeting the inclusion criteria was briefed about the study and purpose of the study. Informed written consent was taken from all the patients. Before starting the study, approval was taken from hospital Ethical Review Committee (ERC). Swab of pus from the diabetic foot was taken from all the included patients in well hygienic condition. The sample was protected properly to avoid contamination by the trained laboratory technician. The sample was cultured for the bacteria on specific media (mannitol salt agar plate) in the hospital laboratory under the supervision of senior microbiologist. The S. aureus cultured from the specimens was tested for the sensitivity to methicillin. The result was entered in preformed proforma for each patient separately. Strictly exclusion criteria was followed to control confounders and bias in the study results. The collected data was entered and analyzed by SPSS version 17. Mean and standard deviation was calculated for numerical variables like age. Frequencies and percentages was calculated for categorical variables like gender and MRSA. MRSA was stratified among age and gender to see effect modification .post stratification was done through chi-square test keeping p value ≤ 0.05 as significant. Result was presented in the form of table and graphs/ charts.

RESULTS

The study was conducted on 140 patients presenting with diabetic foot infections. The mean age of the sample was 42.2 $\pm$ 8.3 years. The range of age in our study was 25.50 years with minimum age of 29.50 years and maximum age of 55.00 years. On grouping the sample in different age groups, we observed that 10% of patients were in the age group up to 30.00 years, 29.3% were in the age group 30.01 to 40.00 years, 46.4% of patients were in the age group 40.01 to 50.00 years and 14.3% were in the age group 50.01 years & above.

Table No.1: Age-wise distribution of sample (n=140)

	n	Range	Minimum	Maximum	Mean	Std. Deviation
Age of Patient	140	25.50	29.50	55.00	42.2250	8.33346
Valid N (list-wise)	140					

Age Groups		Frequency	Percent
	Up to 30.00 years	14	10.0
	30.01 to 40.00 years	41	29.3
	40.01 to 50.00 years	65	46.4
	50.01 years & above	20	14.3
	Total	140	100.0

Table No.2: Gender-wise distribution of sample (n=140)

Gender		Frequency	Percent
	Male	72	51.4
	Female	68	48.6
	Total	140	100.0

Table No.3: Frequency of mrsa (n=140)

MRSA		Frequency	Percent
	Yes	33	23.6
	No	107	76.4
	Total	140	100.0

While distributing the patients with regards to gender, we observed that in our study 51.4% of the sample was male and 48.6% were female gender. From all the patients included in the study, swab was taken from the

diabetic foot ulcer and sent to hospital laboratory for the detection of MRSA. On report, MRSA was detected in 23.6% of patients.

DISCUSSION

Since its first report in 1961, MRSA became a most important pathogen causing diseases in the human.[9] and the ever preliminary reported outburst of disease in 1968[10]. Reports (2003) from NNISS (National Nosocomial Infections Surveillance System) of the CDC showed that MRSA, on an average, responsible for 57% of S. aureus isolates causing nosocomial infection in in ICUs [11]. This prevalence is greater than the one that is reported for the years 1995–1999 [12]. Threat factors for MRSA colonization have been well explained [13]. Various factors are responsible for varying rates of colonization or infection with MRSA. These factors including geographic location, type of health facility and the explicit population which is being studied. 4%–8% MRSA prevalence or colonization in the ICU has been reported by some of the researchers[14,15]. Similarly, the occurrence of MRSA colonization in the general population has been reported to be 0.18%–7.2%[16,17] having an incidence of nosocomial attainment of up to 1.7% [18,19]. Community-acquired colonization has just been explained as an important reservoir of MRSA, with a reported incidence of 1.3%–2%[52, 20].

Lower extremity infections are a serious cause of morbidity in patients with diabetes mellitus. These infections are responsible for 20% of all hospital admissions in diabetic patients [21]. Diabetes is the major cause of non-traumatic limb amputation. Several immune defense mechanisms are defective in diabetic patients. Among these are a decrease in leukocyte chemotaxis, phagocytosis, and intracellular killing. Microbiologically, diabetic foot infections are generally polymicrobial. Among the most frequently isolated microorganisms from the lesions are Staphylococcus aureus, group B streptococci, Enterococci, anaerobic bacteria including Bacteroides fragilis and some enteric gram-negative organisms. The predominance of S.aureus is in agreement with the results reported by others

CONCLUSION

MRSA is a highly prevalent problem among our local population with diabetic foot and we recommend more research studies focusing on its risk factors so that preventive measures may be taken.

Author's Contribution:

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Final Approval of version:	Makil Shah & Mohammad Shoaib

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Indications of Emergency C-Section

Rate and Indications of Emergency Caesarean Sections at a Teaching Hospital in Pakistan

Samia Tabassum, Sadia Ali and Sadia Shamsher

ABSTRACT

Objective: Caesarean delivery is an important aspect of emergency obstetric care and a major tool in the reduction of maternal and perinatal morbidity and mortality. This study was done to determine the rate and indications of emergency caesarean sections at Mardan Medical Complex, KPK, Pakistan.

Study Design: Retrospective analysis

Place and Duration of Study: This study was conducted at the Department of Obstet & Gynae, Mardan Medical Complex, KPK, Pakistan from 1st January 2014 to 31st December 2014.

Materials and Methods: A retrospective analysis of the clinical records of all patients delivered by caesarean section was conducted. There were 5409 deliveries with 630 caesarean sections during the review period, giving a caesarean section rate (CSR) of 11.6%.

Results: There were 5409 deliveries with 630 caesarean sections during the review period, giving a caesarean section rate (CSR) of 11.6%. Emergency caesarean sections accounted for 533 (84.5%) caesarean deliveries. The main indications for emergency caesarean sections were repeat caesarean section (16.9%), fetal distress (16.9%), followed by obstructed labour (11.4%).

Conclusion: The rate of emergency caesarean section can be decreased by proper training of lady health workers, skilled birth attendants, and general practitioners, so that they can recognize the risk factors early on and arrange a timely referral of those cases that may need caesarean sections.

Key Words: caesarean section rate, emergency caesarean section, traditional birth assistants, fetal distress, repeat caesarean section

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INTRODUCTION

Caesarean section is the commonest obstetric operative procedure worldwide.[1,2] Its incidence is on the rise throughout the world.[4] There is growing concern that caesarean rates have been rising for all women in the world regardless of medical condition, age, race, or gestational age.[5] Rising caesarean section rate in developing countries is alarming as it increases maternal morbidity, owing to fever, bleeding, anesthesia complications, post operative thrombo-embolism and long term risk of having morbidly adherent placenta leading to obstetrical hysterectomy or uterine rupture with progressive number of scars.[6]

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The World Health Organization has identified an ideal caesarean section rate for a nation, of around 10-15%.[7] This is based on studies that show improving maternal and neonatal morbidity and mortality as rates rise up to this level, but minimal improvements or even negative health outcomes as the rate increases past 10%.[10]

Caesarean section can be done as an elective as well as an emergency procedure.

MATERIALS AND METHODS

This was a retrospective analysis of consecutive caesarean sections performed at Obstet & Gynae,, Mardan Medical Complex, KPK over one year from 1st Jan 2014-31st Dec 2014. The records from the labour room and operating theatre were retrieved and checked for emergency caesarean deliveries. The delivery records of all the patients who had undergone emergency lower segment caesarean section were obtained and relevant variables were extracted. The variables include age, parity, socioeconomic status, period of gestation, type and indications of caesarean section.

The study was approved by the hospital ethical committee and data analysis was done on the latest version of SPSS.

RESULTS

A total of 5409 patients were delivered during the one-year study period, out of which, 11.6% (630) patients were delivered by caesarean section. 84.5% (533) patients had undergone emergency caesarean section and 15.4% (117) patients were delivered by elective caesarean section. The demographic data is shown in Table 1. The overall rate of caesarean section was 11.6%, with the rate of emergency caesarean section being 84.5%.

Table No.1: Demographic data

Emergency caesarean section	
Age (in years)	16-45
Gestational age (in weeks)	25-42
Socioeconomic status	
Lower middle-class	32%
Poor	68%
Parity	
Primigravida	203 (38%)
Multigravida	330 (62%)

Table No.2: Mode of delivery

Mode of Delivery	Number of Patients (630)	Percentage (100%)
Elective caesarean section	117	15.4
Emergency caesarean section	533	84.5

Table No.3: Indications of emergency caesarean sections

Indication	Number of Patients	Percentage (%)
Repeat caesarean section	90	16.9
Fetal distress	90	16.9
Obstructed labour	61	11.4
APH	56	10.5
Breech presentation	44	8.3
CPD	39	7.3
PROM	32	6.0
Neglected transverse lie	27	5.0
Eclampsia/Pre-Eclampsia	20	3.7
Non-progress of labour	8	1.5
Miscellaneous	66	12.4%

Table No.4: Details of repeat caesarean sections

Previous Caesarean	**No. of patients**	**Percentage (%)**
Previous one C/S	70	77.8
Previous two C/S	16	17.8
Previous three C/S	4	4.4

Table 2 The three most common indications of emergency caesarean sections were repeat caesarean section at 16.9% (90), fetal distress at 16.9% (90), followed by obstructed labour at 11.4% (61). Indications for emergency caesarean section are shown in Table 3. Details of repeat caesarean sections are given in Table 4.

DISCUSSION

Caesarean sections have long been practiced as an obstetrical surgical procedure that contributes to reducing fetal complications and although it is classified as a major procedure, the incidence of caesarean section has considerably increased over the years all over the world.[11] But its advantages do not justify its continuous increase since it carries considerable disadvantages when compared with normal vaginal delivery.[12]

During the study period, 84.6% caesarean sections were done as emergency procedures. The rate of emergency caesarean sections was almost comparable to earlier studies done by Onankpa et al (80.6%)[13] in Nigeria in 2009 and Sultana A et al (82.4%)[14] in Pakistan in 2003. The studies conducted by Ugwu EO et al in 2011[15] showed a higher rate of emergency caesarean section than ours, being 93.7%.

The rates given by Daniel CN et al (57.5%)[16], Ehtisham S (58.5%)[6], Aminu M et al (68%)[17], and Shamshad (68.9%)[2], and are lower than our value of 84.6%. In our study the high rate of emergency caesarean sections shows last-moment referrals by traditional birth attendants, health workers and general practitioners from the periphery to this hospital. They do not refer the patient in time and are unable to recognize the risk factors which may lead to requiring a caesarean section.

The three most common indications were repeat caesarean section (16.9%), fetal distress (16.9%), followed by obstructed labour (11.4%). These indications are in accordance with studies conducted by Mdegela MH et al, Shamshad and Ehtisham S.[2,6,18]

Repeat caesarean section was one of the most common indications for emergency caesarean sections in our study. The decision of primary caesarean section is important.[19,20] If we prevent primary caesarean sections, more can be prevented. Unless there is a clear-cut and well-supported justification for caesarean section, a trial of vaginal delivery is necessary.

Fetal distress was the other leading indication for emergency caesarean sections in our study and it accounted for 16.9% of emergency caesarean sections. This high value may be related to the use of intermittent auscultation and to assess the nature of amniotic fluid as a means of fetal monitoring during labour in our hospital. There were no facilities for continuous electronic fetal heart rate monitoring or further acid base studies of fetal scalp blood sampling. The diagnosis of fetal distress largely depended on clinical signs (fetal heart rate abnormalities and meconium staining of the liquor which may be a result of incorrect and overdiagnosis sometimes.)

Obstructed labour was another common indication for emergency caesarean sections. Almost all of these were referred cases which were mishandled by traditional birth attendants (TBAs) and lady health workers from the periphery. Their injudicious use of oxytocin, and induction with prostaglandins without proper assessment of patients were the most probable cause of pregnancies ending in obstructed labour. Current research suggests that labour induction makes a caesarean section more likely among first time mothers when the cervix is unfavourable.[21,22]

Other main indications were APH, malpresentation, CPD, and non-progress of labour. Besides this, other miscellaneous indications for caesarean sections were unstable lie, scar tenderness, bad obstetrical history, postdates or prolonged pregnancy and two cases of maternal request.

CONCLUSION

The rate of emergency caesarean sections can be decreased by proper training of lady health workers, skilled birth attendants and general practitioners, so they can recognize the risk factors early on, and arrange timely referrals of cases who may need caesarean sections. This practice may reduce the incidence of emergency caesarean sections and its associated maternal and fetal morbidity and mortality.

Author's Contribution:

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Original Article

G6PD Deficiency

Frequency of Glucose 6 Phosphate Dehydrogenase Deficiency in Patients with Plasmodium Vivax Malaria Presenting to a Tertiary Care Hospital

Muhammad Bilal Khattak[1], Zahid Irfan Marwat[2], Arshia Munir[3] and Shams Sulaiman[4]

ABSTRACT

Objective: To determine the frequency of glucose 6 phosphate dehydrogenase (G6PD) deficiency in patients with plasmodium vivax malaria presenting to the department of Medicine , Hayatabad Medical Complex, Peshawar.

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Department of Medicine, Hayatabad Medical Complex, Peshawar from January 2016 to December 2016.

Materials and Methods: Patients with plasmodium vivax malaria were included and patients having evidence of acute hemolysis were excluded from the study. The G6PD level was measured in the Department of Pathology, HMC. The data collected was analyzed in SPSS latest version. Mean ± SD was calculated for continuous variable. Frequencies and percentages were calculated for categorical variables final results were presented in tables.

Results: A total of 870 patients were included. We found that 53(6.09%) subjects were deficient in G6PD. These cases were divided into non hospital and hospital groups. In Non-hospital group G6PD deficiency was 4.1% while13.3 % in the other group. Thirty three patients (63.3%) had anemia in hospital patients and 8 patients had severe anemia. None of the Non-hospital had severe anemia, while mild anemia was observed in 16(30.2%) patients in Non-hospital groups.

Conclusion: G6PD deficiency is predominantly found in male population. Moreover anemia is more common in G6PD deficient people than normal population.

Key Words: Glucose 6 phosphate dehydrogenase deficiency, plasmodium vivax, Malaria

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INTRODUCTION

The enzyme glucose 6phosphate dehydrogenase is found in almost all body tissue, and its function is to catalyze the initial step in the pentose phosphate pathway. Glucose 6phosphate dehydrogenase deficiency is a one of the commonest X-linked enzyme abnormality[1]. G6PD deficiency is endemic throughout tropical and subtropical regions of the globe[2-4]. This pathological problem which is endemic in tropical and subtropical countries, present wit hemolytic crisis and jaundice in the early days of a neonatal life[5, 6].

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Plasmodium vivax is equally endemic in most part of the world and it G6PD deficient are also affected as it is affecting individuals with normal G6PD[7-9]. Though G6PD deficient individuals are without symptoms most of the time, yet they can present with jaundice in early neonatal life and with acute hemolytic anemia especially when these people suffer from infection or the they take some drugs and broad beans (favism) which aggravate the process of red blood cells with the enzyme deficiency). Though G6PD deficiency is of several variants yet in many cases the problem is caused by a single amino acid substitution[10]. Premaquine has an important role in vivax malaria treatment protocol and its use is challenging in G6PD deficient patients[11,12,13].

This study was done to look for G6PD deficiency and to see presence of anemia in these patients with vivax malaria.

MATERIALS AND METHODS

This descriptive / cross sectional study was done in the Department of Medicine, Hayatabad Medical Complex, Peshawar from January 2016 to December 2016. The study was approved by research ethical committee HMC, Peshawar. All the patients having history of plasmodium vivax malaria detected in indoor or outdoor OPD visits were included in the study.

Patients with evidence of acute hemolysis were not included in the study as G6PD deficient patients can have normal levels during hemolysis. The G6PD level was measured in Hematology section of the Department of Pathology HMC as this laboratory is a reference lab and receives blood samples from various parts of the province.

2-3 ml of patient blood sample was transferred to an EDTA tube. Span Diagnostic Qualitative G6PD Test kit was used. Hemolysate was prepared form patient blood using 0.9% Normal Saline. The commercial kit was reconstituted using the supplied mineral oil. Hemolysate was mixed with the kit reagents and buffer. The mix was incubated for 1 hour at 37 degrees while being observed for color change at intervals of 5 min. A change in color form Blue to Red within the first 60 min signifies Normal G6PD levels. No Color change beyond 60 min was taken as evidence of low G6PD levels.

All the collected data was analyzed in SPSS latest version. Mean ± SD was calculated for continuous variable. Frequencies and percentages were calculated for categorical variables Final results were presented as tables.

RESULTS

A total of 870 patients fulfilling the inclusion criteria were included in the study. In our study we found patients age from age five years to thirty years. In Non-hospital group 439 were males while 243 were females out of 682 cases. In the hospital group 113 were males and 75 were females in total of 188 cases.

In total of 870 patients screened for G6PD deficiency 28 found deficient in the Non-hospital group; while 25 were deficient in hospital group. Out of these 68% from non-hospital group (19/28) were males while 32% (9/28) were females. In the hospital group 25(13.3%) patients (25/188) had G6PD deficiency. Amongst these 25 patients, 15 were male while 10 were female. The details have been given in table 1.

Table No.1: G6PD deficient patients in non-hospital and Hospital group.

Groups	Total subjects	Deficient	%
Non-hospital group	682	28	4.1
Males	439	19	68
Females	243	9	32
Hospital group	188	25	13.3
Males	113	15	60
Females	75	10	40
Grand Total	870	53	6.09

In 53 patients found G6PD deficient cases the red blood cell count and haemoglobin level was found to know about various level of anemia. We found that 33 patients (63.3%) had anemia. Eight (15.1%) had severe anemia, 9 (17.0%) were having moderate anemia and 16(30.2%) had mild anemia which is shown in table 2.

As far as presentation of the condition month-wise is concerned, Maximum were reported in March i.e. 97 followed by May, April, September and January; whereas minimum number found in November

Table No.2: Anemia status in 53 cases with G6PD deficiency

	ANEMIA			
	Severe	Moderate	Mild	Total
Non-hospital group	0 (0%)	1 (1.9%)	9 (17.0%)	10 (18.9%)
Hospital group	8 (15.1%)	8 (15.1%)	7 (13.2%)	23 (43.4%)
Total	8 (15.1%)	9 (17.0%)	16 (30.2%)	33 (63.3%)

Severe anemia =Hemoglobin <7.0g/dl.
Moderate anemia= Hemoglobin 7-10g/dl
Mild anemia = Hemoglobin 10-11g/dl

Table No.3: Presentation of G6PD deficiency I various months

Month	Total Subjects	G6pd	%
Jan	81	4	4.3
Feb	61	2	3.3
Mar	97	8	7.8
April	86	5	5.2
May	88	8	8.5
June	76	3	3.9
July	74	3	4.05
Aug	58	3	5.2
Sept	81	5	5.6
Oct	61	5	8.2
Nov	43	4	9.4
Dec	67	6	8.3

DISCUSSION

We did our this research work at KPK Tertiary level hospital to know the frequency of glucose 6 phosphate dehydrogenase deficiency, occurring as minimum as below 5% in central area to as high as 24%. Our study showed G6PD deficiency in tertiary hospitals is 6.09%. This frequency is above the other study conducted in tertiary level hospital[13].

We found in our study that frequency of G6PD deficiency in hospitalized group was much higher than the non-hospitalized ones; which was 13.3% and 4.1% respectively.

There was male predomince over female with a ration of almost 2:1 ratio. Results in other countries of the world are nearly same, as shown by Joshi et al[14] and Sanpavat et al[15] who conducted their native lands i.e. India and Thailand respectively.

In our study we found that incidence of anemia in patients with G6PD is quite high i.e. 67% which was different from other international studies which showed

lower frequency[15,16]. Asymptdomatic patient percentage was low in our studies i.e. 37 % while the asymptomatic patients [15, 16].

One of the core root cause responsible for this high incidence of anemia in our region is probably genetic polymorphism of G6PD.

In this study we found that the maximum number of cases were found in May followed by May, April, September and January; while the minimum number in November. This part of our study also coincides with other international studies [13,17].

In our study we found no causal relationship between bean ingestion and hemolytic anemia in the enzyme deficient cases and same is given by a Saudi study; while on international study showed contrary result by Warsy et al who found strong association of hemolysis in enzyme deficient patient with bean intake[18].

CONCLUSION

G6PD deficiency is predominantly found in male population. Moreover anemia is more common in G6PD deficient people than normal population

Recommendations: As both vivax malaria and Glucose 6 Phosphate deficiency are our common community problems but very less studies have been conducted. Therefore, various aspects of either condition should be considered for original studies to give maximum benefits to our community and create awareness in our public

Author's Contribution:

Concept & Design of Study:	Muhammad Bilal Khattak
Drafting:	Zahid Irfan Marwat
Data Analysis:	Arshia Munir
Revisiting Critically:	Shams Sulaiman
Final Approval of version:	Muhammad Bilal Khattak

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Original Article

Risk Factors and Orofacial Clefts

Antenatal Risk Factors and Orofacial Clefts in Children

Riaz Ahmad, Rizwana Nawaz and Hussain Humayun

ABSTRACT

Objective: To determine the association of various antenatal risk factors in the mothers and the occurrence of orofacial clefts in the offspring's.

Study Design: Observational / descriptive Study.

Place and Duration of study: This study was conducted at Ayesha Bashir Hospital (Cleft hospital) and Govt. Aziz Bhatti Hospital /NSMC, Gujrat from June to December 2016.

Materials and Methods: This study was done at Ayesha Bashir trust (Cleft hospital) which caters for the diagnosis, treatment and rehabilitation of the children with orofacial clefts. A particular Performa was made for the identification of association of various antenatal risk factors in the mothers and orofacial clefts in the off springs. The children with minor defects were excluded from the study.

Results: The total no. of the patients was eighty one. There was a little association (1.25%) between the family history and orofacial clefts. Consangineous marriages was the most important factor, about 85% of the parents of the affected children had consanguineous marriages. Regarding the family history only 5% of the siblings were affected. About 3.75% of the affected children were twins. .About 2.5% of the mothers had UTI and abdominal pain. No particular association with any medical disorder was observed in this study .The important association was observed regarding the use of folic acid. About 60% of the parents did not take folic acid during the current pregnancy.

Conclusion: It is concluded in this study that in addition to the other risk factors consanguinity among the parents and lack of intake of folic acid in early pregnancy are the factors increasing the incidence of orofacial clefts in the offspring's.

Key Words: Orofacial clefts, Antenatal, Cleft lip and Palate, Consanguineous, Folic acid.

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INTRODUCTION

Orofacial clefts are one of the most common anomalies. The incidence of the defects is 1 in 500-550 births. This is a heterogeneous group of anomalies, these may be classified into the typical orofacial clefts (cleftlip CL; Cleft lip and palate e CLP and cleft palates only CP) and atypicalclefts (median, transversal, oblique and other Tessier, s type of the facial clefts.

These could be an isolated anomaly as a part of the primary sequence defect or as a multiple congenital anomaly (MCA).In this group, it could be part of a known genetic syndrome or part of a chromosomal aberration[1,2].

There are many demographic, social, familial and antenatal risk factors which can affect the occurrence of the orofacial clefts independently or in association with each other. There are many antenatal risk factors which are associated with the occurrence of the orofacial clefts ranging from the paternal age, parity of the mother, parents affected or not, history in siblings, consanguineous marriage, The other variables could be whether it was a spontaneous or induced ,single or multiple pregnancy, any drugs taken during the first trimester, parents smoker or not, either some multivitamin or folic acid taken during the first trimester or not, what type of the food she consumed, or exposure to any chemicals or gasses. There are certain myths associated with the occurrence of these defects. An important myth is the exposure of the pregnant lady to Sun and Moon Eclipse, which was also studied.

Consanguity and family history is very important in the recurrence of orofacial clefts. In a met analysis[3] it was concluded that there is a greater genetic component in the etiology of CL (cleft lip) based on the observation that there is an excess of individuals with CL over CLP in the offspring of consanguine parents. It was also found in another population study that anatomical severity does have an effect on recurrence in the first degree relatives and type of the cleft is predictive of the recurrence type. There are also increased chances of recurrence in the third degree relatives as compared to the background population. This particular fact was also supported in another study[4] that multiple risk

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factors contribute to the development of a CLP ,including genetics ,advanced age, family history, antiepileptic drugs, consanguineous marriage and smoking, and history of the previous child. Isabel Cristina and associates provided evidence for strong association between oral cleft and a family history of malformations and parental consanguinity. It also provided statistically significant association between maternal smoking and alcohol use.[5]

In another study[6], it was found that the use of folic acid containing prenatal vitamins is associated with decreased risk of several congenital anomalies, not only neural tube defects. This approach may be considered.

VW Omo-Aghoja et al found in their study that following risk factors were associated with the risk of development of cleft lip and palate: Paternal age>40 years. Maternal age>35 years, genetic, family history, low socio economic status, alcohol consumption and indulgence in the intake of herbal medications in pregnancy.[7]

Family history is very important in the occurrence of orofacial clefts. Jane .C et al. Concluded in their study that family history was strongly associated with increased risk. Advanced maternal age, pre gestational hypertension and gestational seizures, Low maternal, paternal education and tobacco smoking were associated with increased risk[8].

MATERIALS AND METHODS

This Study is a descriptive observational type which was done for aperiod of six months from June to December 2016 at Ayesha Bashir Trust (Cleft Hospital Gujrat) and Aziz Bhatti Teaching Hospital (NSMC).Ayesha Bashir Trust is a multi-disciplinary Hospital especially catering for the diagnosis, research, treatment and rehabilitation of the children with orofacial clefts and defects. A particular Performa was made for the identification of association of various antenatal risk factors and orofacial clefts. The parents and attendants were interviewed for the data. The children with minor degrees of clefts were excluded from the study. The study was not funded and the data was analyzed on SPSS 16.

RESULTS

The total number of the patients was 81. There was a little association (1.25%) between the family history and orofacial clefts, only one mother was affected in this study.

There was a strong association between the consanguineous marriages and the children affected, the frequency was 85%. Regarding the family history only 5% of the siblings were affected.

About 3.75% of the affected children were twins, rest were singleton pregnancies. The association of a particular food and orofacial clefts may be there, but in this study almost all the patient were consuming the same food like Roti (bread), meat, vegetables.

Table No.1: Family history as a determinant

Fathers affected	1	1.25%
Mothers affected	0	0
Family history	1	1.25%

Table No. 2: Consanguinity And Siblings affected
Consanguine marriages=68 Percentage=85%
Association of siblings affected/not affected

Total no .of the patients=81		
Siblings affected/not affected	**No of Patients**	**Percentage**
Affected	4	5
Not affected	76	95

Table No.3: number of fetuses in relation with orofacial clefts

Type of the pregnancy	Frequency	Percentage
Singleton	77	96.25
Twins	3	3.75
Multiples	0	0

Table No.4: Type of the food consumed in the affected (parents)

Type of the food	Frequency	Percentage
Roti saalan (gravy food)	81	
Rice	70	
Meat	81	
Vegetable	81	
Organic	80	
Non Organic	80	

Table No.5: Maternal illness in the current pregnancy and orofacial defects

Maternal illness	Numbers affected	Percentage
Malaria	0	0
UTI	2	2.5
Abdominal pain	2	2.5
PV Bleeding	1	1.25
Diarrhea	1	1.25
Miscarriage	1	1.25
Exposure to agriculture spray	0	0

Table No.6: Medical disordes in current pregnancy and occurrence of orofacial clefts

Medical disorder	Frequency	Percentage
HTN	2	2.5
Anemia	2	2.5
Thyroid	2	2.5
Allergy	1	1.25
Asthma	0	0
Steroids-anesthesia	0	0
Addiction	O	0

And it included organic and inorganic as well. About 2.5% of the mothers had a history of UTI and

abdominal pain in early pregnancy and 1.25% each mothers had an episode of PV bleeding, diarrhea and miscarriage.

Regarding the medical disorders in such pregnancies about 2.5% each were diabetic, hypertensive and anemic.

There are certain myths about the orofacial clefts in association with moon and sun eclipse, none of the patients had moon eclipse during their pregnancy ,however about 13.75% had sun eclipse during the current pregnancy.

Regarding the conception about 86.25% had spontaneous conception, and 11.25% had induced and 2.5% had others method for conception

DISCUSSION

Family history may predict the occurrence of orofacial clefts. In this study only one father and mother were affected and no other family member was affected. Sami Slieihu[9] and associates concluded in their study that heredity with a family history of clefts was the most important risk factor in addition to the other risk factors e.g. maternal age, drugs and smoking.

In this study a very important finding was observed that about 85% of the parents of the children having a consanguineous marriage which is alarming. Sultani MK and colleagues found in their study that consanguinity was there in about 31% of the cases. And about 38% had other abnormalities and the incidence was 1.09/1000 live births[10].

In a study in in Brazil[11] there was evidence of strong association between oral clefts and a family history of malformations and parental consanguinity. It also provided a moderate but consistent association between the alcohol use and orofacial clefts. Ina hospital based study in Riyadh Ravichandran K and associates[12] found that consanguine relationships were seen in 56.8% of our patient's parents. Family history was more likely to be positive for patients whose parents were consanguineous than those who were non consanguineous (34.2% vs. 25.8% p=0.003) both for the CL and palate and C P groups. Recurrence among siblings did not differ between those born to consanguine versus non consanguineous parents. Sushmitah Basker in her study found that (13) in most cases, parents of the affected children had consanguineous marriages. It was also concluded in this study that females were more affected than male siblings.

In another study consanguinity[14] Rajeev and colleagues concluded that nearly half of the population in their study had a positive history of consanguinity, statistically a significant association was seen between CP and consanguinity. Cleft lip and Palate cases were the most common type identified, followed by CL and CP.

Males predominated in all types of the clefts. The prevalence of O.F.C is high and there is a potential of congenital disabilities from consanguinity.

It was also found in this study that about 5% of the siblings of these children was also affected which was higher as compared to the general population.

It has been found, and generally that the congenital anomalies, and deformities are more in multiple pregnancies than in singleton. In this study there were no multiple pregnancies however 3.75% were twins as compared to 96.25% which were singleton. In another it was found[15] that the prevalence of oral clefts was 15.8/10,000 Twins and 16.6/10,000 singletons (Prevalence proportion ratio=0.9).Twins prevalence was similar for monozygotic and dizygotic twins. No excess risk of oral cleft could be demonstrated for twins compared with singletons. The concordance rate heritability estimates for both types of clefts show a strong genetic component.

Maternal illness may affect the fetus in utero especially in the embryonic period, so it may be one of the reasons of orofacial defects. It was found in this study that 2.5% of patients had UTI and abdominal pain and 1.25% each had pv bleeding, diarrhea and miscarriage Almost similar results were found In a study by Ana Thereza de Saboia Campos Neves and associates that maternal and paternal smoking in the first trimester of pregnancy and parity were significantly associated with the occurrence of CLP. Parents age, educational level and occupation did not interfere in occurrence of oral clefts. There was also no significant association between maternal illness, medication use, alcohol consumption and maternal exposure to chemicals in the first trimester of pregnancy and occurrence of clefts in the population.

A particular type of the food is consumed in certain societies, which may be associated with certain congenital anomalies. In this particular study all of the parents of the children were using the same type of the food, being most of the Punjabi population. All of them were using Roti (Bread) Saalan (gravy food), meat, vegetables, organic and non-organic type of the food, so no particular association with any food was observed. However in a review study[16] it was found that use of maternal western diet, high in the meat, pizza, legumes and potatoes and low in fruits and vegetables increases the risk of offspring with a cleft lip or cleft palate approximately two fold. Bille C and associates in their case control study that first trimester maternal smoking was associated with an increased risk of oral clefts. Although not statistically significant, we also saw associations with first trimester consumption of alcohol and drinking more than one liter of cola per week.[17]

There are certain congenital anomalies which may be associated with certain medical disorders in the mother. In this study the mothers had 2.5% each diabetes, hypertension and anemia and 1.25% thyroid disorder, but none of them had asthma, use of steroids, any surgery and addiction of any drug. In a similar study[18] it was found that family history of clefts was strongly associated with increased risk of these defects. Advanced maternal age, pregestational hypertension, and gestational seizures were statistically significant factors. Similarly some environmental factors e.g. rural

background, indoor cooking with food appeared to be associated with increases risk adjusted models.

The intake of folic acid and multivitamins is considered to be preventive for the occurrence of various congenital anomalies in the children of these mothers. About 60% of the mothers did not take folic acid in this particular pregnancy but rest of the mothers took it. Lynn B bailey and Robert J .Berry in their study[19,20] concluded that there was 50% reduction in the occurrence of orofacial clefts which was same as was found in earlier studies that the preconception use of folic acid and multivitamins reducing the risk of various birth defects and especially the orofacial clefts.

CONCLUSION

Antenatal risk factors certainly do affect the occurrence of various congenital anomalies in the offspring's. By the results of this study and other National and international studies, it is concluded that in addition to other factors consanguineous marriages and lack of intake of folic acid in early pregnancy are the factors increasing the incidence of orofacial clefts in the newborns. Further studies are required to prove the association of consanguineous marriages and folic acid intake in early pregnancy by keeping the other variables constant.

Author's Contribution:

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Original Article

Hygiene Habits of Complete Denture Wearers in Geriatric Patients

Denture Hygiene Habits in Geriatric

Muhammad Athar Khan[1], Irum Munir Raja[2] and Farah Naz[2]

ABSTRACT

Objective: To assess the denture hygiene habits in geriatric patients visiting the Prosthodontic department at Liaquat College of Medicine and Dentistry, Karachi.

Study Design: A Cross Sectional Survey

Place and Duration of Study: This study was conducted at the Department of Prosthodontics at Liaquat College of Medicine and Dentistry, Karachi from March 2015 to November 2015.

Materials and Methods: A descriptive cross-sectional survey conducted in 350 complete denture wearers patients aged >65 years reported to Prosthodontics department of Liaquat College of Medicine & Dentistry. The questionnaire evaluates the time elapsed since the current complete dentures are being used in both jaws, whether the patient has been made aware of the instructions on how to clean and care for their dentures, what additional substances and dentrifices to use to aid cleaning, and whether the patients clean their oral mucosal surfaces as well or not. Statistical analysis of all the data collected were performed using SPSS version 21.

Results: In this study, 156 (45.8%) of the participants reported that their dentists had never been told how to clean their dentures. Nearly half of the study population 188 (55.1%) scrub the teeth with water. For the frequency of denture cleaning, two-thirds 255 (74.8%) of the researchers cleaned the denture at least once a day. This study showed that 102 (29.9%) participants usually sleep with dentures.

Conclusion: As a pre-requisite to denture wearing, care and oral hygiene should be informed and repeated to the patient throughout the course of treatment and then should be checked for patient compliance with regular follow-ups in the ensuing years.

Key Words: Denture hygiene, complete denture, geriatric, elderly

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INTRODUCTION

Over the years, the aim of conservative dentistry has been to preserve and make use of the teeth present in a person's oral cavity for as long as it is possible. But as medical care is being made easily available and with advances and feats of innumerable proportions being made in the health care industry, mortality rates have declined and people live well into their old age. Thus, the use of complete dentures has been on the rise because usually geriatric patients lose their tooth to aging if not disease. The most common causes of tooth loss include dental caries, periodontal problems, dento-alveolar traumatic injuries, orthodontic extractions, failed dental treatments, oral carcinomas and radiation therapy[1]. The work of a dentist does not end when the complete denture has been delivered to the patient.

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The real work begins after insertion as the success of the complete denture, in addition to its adequate and efficient construction, depends on how well the dentist / prosthodontist has made the patient aware on its maintenance and hygiene, and how well the patient takes care of it and his / her own oral cavity. The fitting surface of the denture, its quality and adjustment with regards to the patient's mouth, the occlusal relations, denture age, hygiene and maintenance of the removable prosthesis determines to which extent the oral mucosa and tissues of the patient might be damaged[2-4].

The deleterious effects of complete denture wear on the oral mucosa usually occurs as plaque, both hard and soft, adheres to dentures as well[5]. Some of the adverse effects of complete denture use with negligible hygiene maintenance includes denture-induced stomatitis, denture irritation papillary hyperplasia, angular chelitis, flabby pendulum ridges, oral candidosis, halitosis, and possibly, oral carcinomas[2-3, 6-8].

To create better awareness of the importance of maintaining prompt oral hygiene and denture hygiene to safeguard both the success of the prosthesis and health of the patient, the objective of this study was to assess the denture hygiene habits in geriatric patients visiting the Prosthodontic department at Liaquat College of Medicine and Dentistry, Karachi.

MATERIALS AND METHODS

A descriptive cross-sectional survey conducted in 350 complete denture wearers patients aged >65 years reported to Prosthodontics department of Liaquat College of Medicine & Dentistry during March 2015 to November 2015 . A total of 350 participants were required by calculating the sample using OpenEpi version 3 with a 95% confidence level, 80% power and 65 % frequency of outcome factor in the population (Azad et al). The reasons for the study were disclosed to the patients and written consent was taken from them. The questionnaire used in this cross-sectional study was taken from a study conducted by Peracini et al.[8]. This questionnaire evaluates the length of time of edentulousness, the time elapsed since the current complete dentures are being used in both jaws, whether the patient has been made aware of the instructions on how to clean and care for their dentures, what additional substances and dentrifices to use to aid cleaning, how often to remove the dentures from the oral cavity, and whether the patients clean their oral mucosal surfaces as well or not. A total of nine forms were excluded in analysis due to incomplete information. Statistical analysis of all the data collected were performed using SPSS version 21. Frequency and percentages were reported for categorical data while mean and standard deviation for numerical data. Chi square test was used for variables between males and females at p value <0.05.

RESULTS

In this study, 156 (45.8%) of the participants reported that their dentists had never been told how to clean their dentures. Nearly half of the study population 188 (55.1%) brush the dentures with water. For the frequency of denture cleaning, two-thirds 255 (74.8%) of the participants cleaned the denture at least once a day. Of all the participants who received the interview, 174 (51%) reported daily cleaning of oral tissue; the most frequent brushing area was tongue. Oral flushing is the most common auxiliary tool for cleaning, 153 (44.9%). This study showed that 102 (29.9%) participants usually sleep with dentures (Table 1).

Table 2 shows the hygiene habits between different sexes. There was a significant difference between males and females after receiving any dentist guidance on how to clean dentures (p <0.013). Again, there was no statistically significant difference in the denture cleaning method, the frequency of denture cleaning, the difficulty of cleaning the denture and brushing the oral tissue. The chi-square test using oral rinse and denture was examined for p = 0.014 and p <0.001, respectively. Figure 1 shows that women (77.2%) were more satisfied with the use of dentures than men (72.6%).

Table No.1: Demographic Characteristics of Patients Wearing Complete Denture (n=341)

Variables	(n%)
Age (years)	
65 – 75	297(87.1)
>75	44(12.9)
Gender	
Male	73(21.4)
Female	268(78.6)
Education Level	
Illiterate	91(26.7)
Primary	88(25.8)
Secondary	39(11.5)
Intermediate	113(33.1)
Bachelors	10(2.9)
Time of use of complete denture	
<1 year	86(25.2)
1-5 years	177(52)
6-10 years	54(15.8)
>10 years	24(7)
Condition of denture	
Good	201(58.9)
Fair	79(23.2)
Poor	61(17.9)
Nocturnal denture wearing habit	
Remove denture	181(53.1)
Does not remove	102(29.9)
Remove sometimes	58(17)

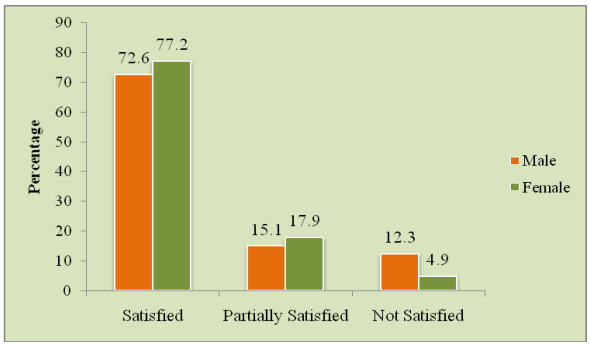

Figure No.1: Subjects' Satisfaction with Use of Denture

DISCUSSION

As complete dentures are usually provided to geriatric patients and the elderly as elaborated by the current study as well, overtime they lack the manual dexterity with which the maintenance and care of the dentures should be met[5, 6]. However, generally too, the neglect of denture hygiene is negligible on part of the wearer which reflects basic lack of motivation and laziness, in turn showing how much the patient was actually guided and instructed by the dentist / prosthodontist in making the patient take interest and show a visible effort on safeguarding the cleanliness of the oral cavity and the denture[5].

Table 2: Denture Care Habits Based on Gender (n=341)

Questions	Gender (n %)			
	Male (n=73)	Female(268)	Total	p-value
Have you received any instruction from your dentist on how to clean your denture(s)? **Yes**	24(32.9)	132(49.3)	156(45.8)	0.013[a]
How do you clean your denture(s)?				
Water + cleansing tablet	7(9.6)	14(5.2)	21(6.2)	
Water + brush + soap	5(6.8)	15(5.6)	20(5.9)	
Water + brush + toothpaste	21(28.8)	78(29.1)	99(29)	0.667[b]
Water + brush	38(52.1)	150(56)	188(55.1)	
Water only	2(2.7)	11(4.1)	13(3.8)	
How often a day does you clean your denture(s)?				
Twice/more a day	9(12.3)	43(16)	52(15.2)	
Once daily	56(76.7)	199(74.3)	255(74.8)	0.542 [a]
Once/twice a week	8(11)	22(8.2)	30(8.8)	
Occasionally	0	4(1.5)	4(1.2)	
Do you have any difficulty cleaning the dentures? **Yes**	8(11)	23(8.6)	31(9.1)	0.531 [a]
Do you soak your denture in any substance? **Yes**	35(47.9)	129(48.1)	164(48)	0.977 [a]
Do you brush the:				
Roof of the mouth (palate)	9(12.3)	19(7.1)	28(8.2)	0.348 [a]
Tongue	27(40)	90(33.6)	117(34.3)	
Gum (ridge)	10(13.7)	19(7.1)	29(8.5)	
Do you use oral rinse? **Yes**	42(57.5)	111(41.4)	153(44.9)	0.014 [a]
Denture status on examination				
Poor	39(53.4)	76(28.3)		<0.001 [a]
Fair	18(24.7)	87(32.5)		
Good	16(21.9)	105(39.2)		

a = Chi Square Test, b = Fisher Exact Test

In this study, nearly half of the patients reported that they received information on cleaning the denture. General instructions given to the patient by a dentist / prosthodontist include things like washing their dentures after every meal with water and to rinse their mouths as well, prescription of denture cleansers is also desirable and patients should be instructed to brush the dorsal surface of their tongues and the mucosal surface overlying their residual ridges with a soft brush[6, 9-11].

In this study, the most used method of cleaning the denture was with water using toothbrush. Even though mechanical methods of cleaning dentures with toothbrushes and water is the most popular method, it results with long-term manifestations of denture surface abrasion which leads to a greater surface area at a micro-porous level of acrylic for micro-organism prevalence and colony formation, thus leading to greater chances of infection. Also it may lead to undesirable appearance of the denture itself which impairs the satisfaction of the patient with regards to esthetics. Peracini et al.[8] in their study presented findings that 58.49% of the subjects were cleaning their dentures only by immersion in liquid, water being the most common of those (38.71%).

With advancing age, it is noticed that a general lack of oral hygiene maintenance and the necessary vigor and determination to keep the denture and oral cavity clean becomes lacking within the patients[12]. Kulak et al., observed oral hygiene habits and presence of yeast and denture stomatitis in giatric population[13]. This study concluded that there is a significant relationship between denture stomatitis, yeast and denture hygiene. As it has been observed by Baran et al, a positive relationship has been observed between the level of oral hygiene and denture hygiene maintenance and the occurrence of traumatic ulcerations and denture-induced stomatitis in denture wearing patients[14].

At times the dental professionals themselves often times forget to inform and educate the patients with regards to oral hygiene instructions and denture care. This is gross neglect on part of the operator and not be tolerated within the workforce of dentistry as it goes against the basic need to maintain oral and general health and well-being of the patient[15 – 17].

In another study by Coelho et al., the most frequent lesion observed with poor denture hygiene maintenance in the oral cavity was chronic atrophic candidiasis most prevalent in females as compared to males[17]. Hoad et al, encountered the denture hygiene in old age

population, which showed that maintenance of denture hygiene in this age group is difficult due to which incidence of denture stamatitits is also increased[18]. Takamiya et al, evaluated the relationship between the denture hygiene and night time wearing of denture which showed that the patient need education as well as motivation regarding their denture hygiene and denture removing at night[19].

Thus, meticulous care of dentures and simultaneous oral hygiene cleanliness should be vehemently emphasized by the dental practitioner to the patient, with constant follow-ups being scheduled and patient kept on the right track. Long-term use of same dentures should be avoided as with on-going use, quality declines and the chances of infections increase along with other deleterious effects also manifesting in the patient's oral cavity.

CONCLUSION

As a pre-requisite to denture wearing, care and oral hygiene should be informed and repeated to the patient throughout the course of treatment and then should be checked for patient compliance with regular follow-ups in the ensuing years. Failure to comply with instructions should be met with prompt health awareness which is in the best interest of the patient and is the duty of every dental practitioner.

Author's Contribution:

Concept & Design of Study:	Muhammad Athar Khan
Drafting:	Muhammad Athar Khan
Data Analysis:	Irum Munir Raja
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Original Article

Pediatric Femoral Shaft Fractures Treatment According Titanium Elastic Nailing Vs Traction and Hip Spica Cast in Children Between Age 6-12 Years

Titanium Elastic Nailing Vs Traction and Hip Spica Cast

Muhammad Imran and Haider Ali Bhatti

ABSTRACT

Objective: Comparison of Titanium elastic nailing with Skeletal Traction and Hip Spica Cast for the treatment of femoral shaft fracture in children having age between 6-12 Years in our setup.

Study Design: Randomized control trials study

Place and Duration of Study: This study was conducted at the MMDC/Ibn-E-Siena Hospital/ Research Institute, Multan from 1st June 2016 to 31st December 2016.

Materials and Methods: In this study we included 60 patients with femoral shaft fracture. Patient coming in first 03 months were managed by traction and Hip spica cast while next 03 months by TENs. Patient age 6-12 years with close fracture shaft Of femur reported within one week of injury from both sexes were included in study.

Results: In this study, 31 out of 60 patients were male and 29 females. Mean age of the patients was recorded as 8.90±2.00 years. In Fractures managed by TEN, average heaing time was (08 weeks) compare to spica group in which healing time was (10 weeks) ($p = 0.001$) , Similarly fractor angulation is higher in spica group ($p = 0.001$). Rotational deformity is less in TEN ($P < 0.005$) while lime length discepency was more in spica group ($P < 0.001$) . duration of non weight bearing is longer in spica group $P < 0.005$. Flynn outcome scores were found better in TEN as compared to spica group.

Conclusion: We concluded that outcome is significantly better in TEN group as compared to those undergoing traction followed by spica cast.

Key Words: Fermur, Hip spica, Titanium elastic nailing, Femoral shaft.

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INTRODUCTION

Femoral shaft fractures usually caused by Blunt trauma. These are common in age group between 6-12 years. The shaft is involved in majority of these cases.[1-2] Antegrade solid intramedullary trachanteric nail is used in skeletally mature cases, it is known as the standard treatment. A recent study reveal that The results of internal fixation are better in older children, epically in high energy trauma[3].

Though, factures shaft of femur may be treated in various ways in children but choice of a particular method, usually, based on weight, age of the patient, pattern of fracture and practical experience of orthopaedic surgeon. Age is an important factor[4]. Treatment modalities varies according to age. Spica cast is used in children with less than 6 years intramedullary nailing is used in children more than 12 years of age. The debate exists in children between 6-12 years.[5-6] Currently, common treatment modalities for the management of femoral shaft fracture are traction followed by spica cast and titanium nailing among 6-12 years of age children.[7] However this method of treatment includes various complications.[8-9] One of the complications is daily activities, absence from school may lead to a greater socioeconomics burden. The use of titanium elastic nail is considered as advance method of management in children between 6-12 years of age, it helps in early bone healing while complication rate is also very low[10].

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MATERIALS AND METHODS

This randomized control trails study was conducted at MMDC / Ibn-e-Siena Hopsital/Research Institute, Multan From 1st June 2016 to 31st December 2016. In this study we included 60 consecutive patients. Patient coming in first 03 months were managed by traction and Hip spica cast while next 03 months by TENs. Patient age 6-12 years with close fracture shaft Of femur reported within one week of injury from both sexes were included in study.

The predominant mode of injury was due to road traffic. Accident 39.58% followed by fall from height n

= 21.42% preoperative evaluation included full length radiograph of involved thigh including knee and hip joint both Anteroposterior and lateral views. The location of fractures in this study, 06 fractures were in proximal third, 46 in middle third, and 08 in distal third of femur. 30 fractures were transvers, sixteen were short oblique, four were spiral and ten were minimally comminuted. Majority patient underwent surgery within six days of injury. Surgery was performed under general Anaesthesia with the patient in supine position. Image intensifier was used for reduction of fracture and placement of mails. Two titanium elastic nails of same width were used. The width of each nail was found as per Flynn's Etal formula.

The diameter of the nail was chosen so that each nail occupies one third of medullary cavity, the nails were inserted in Retrograde fashion with medial and lateral incision 2-3 cm above the physis. Open reduction were required in four cases due to soft tissue interposition the nails were placed in medullary canal so that proximal end of nail is 1cm distal to proximal femoral physis. Post operatively patients limb was elevated on pillow. Patients were mobilized on 3rd week post operatively without weight bearing. Partial weight bearing after 04 weeks and full weight bearing after 08 week depending on callus response.

Similarly in spica cast group, skeletal traction was applied through distal femoral pin for 7-10 days depending on shortening then Hip spica was applied by using Traction table with the help of image intensifier under G/A. the position of hip of injured extremity was kept in 15^0-20^0 flexion and injured limb in 10^0-15^0 external rotation. Spica was continued till complete union at fracture site. Weight bearing was allowed 10 days after removal of spica.

All patients were followed up radiologicaly as well as clinically every 02 weeks for 06 months. Parameters studied were clinically and radiological features of union, mal-alignment, range of motion of affected side of knee, limb length discrepancy and any other complication found during study.

RESULTS

In this study, 31 (51.7%) were male and 29 (48.3%) were Female (Table-1) Mean age was 8.90 ± 2.00 years and 8.97 ± 2.00 years in females. (Table-2).

Among 30 patients managed with titanium elastic nails, there were 16 boys and 14 girls the mean age was 10 years.

Of the 30 patients in the spica group. There were 15 boys and 15 girls with a mean age of 9.30 years. Fracture type, site of fracture and mode of injury was recorded. There were no significant difference between the groups. Incidence of injury in both male and female was found similar. In both groups follow up was 06 months ranging from 5-7 months.

In both groups, definitive treatment was started with in 24 hrs. i.e skeletal traction was applied to spica group and nailing was done in surgical group. So there was no significant delay of treatment found between the two groups similarly hospital stay was not significantly different in both groups nailing group (7-12 Days mean 8.45 days) than spica group (8-15 days mean 10.15 Days).

Table No.1: Frequency of gender (n = 60)

Gender	No.	%
Male	31	51.7
Female	29	48.3

Table No.2: Mean age of the children

Gender	Age	Mean ± SD
Male	7-11.6	8.84 ± 2.03
Female	6-11.10	8.97 ± 2.00

Table No.3: Comparison between Surgery & Spica Group

Parameter	Group	Range	Mean	Signifi-cance (P value)
Angulation	Surgery Spica	$9\text{-}4^0$ $21\text{-}7^0$	3.16 9.56	0.001
Rotational malalignemnt(^{0})	Surgery Spica	$6\text{-}9^0$ $20\text{-}8^0$	5.56 14.45	0.005
Union (weeks)	Surgery Spica	5-8 weeks 6- 12 weeks	6.35 8.15	0.001
Non-weight bearing (weeks)	Surgery Spica	4-8 weeks 7-11 weeks	5.31 7.20	0.005
LLD at 06 months follow-up (cm)	Surgery Spica	−1cm to + 1cm −0.5cm to -2cm	0.56 1.25	0.000

Table No.4: Flynn et al's Scoring Criteria for TENS

	Excellent	Satisfactory	Poor
Pain	None	None	Present
Malalingment	$<5^0$	$5\text{-}10^0$	$>10^0$
Limb Length discrepancy	<1cm	102cm	>2cm
Complication	None	Minor	Major and/or lasting morbidity

In the nailing group, angulation > 5^0 in coronal/sagittal occurred in 02 patients (mean 3.2^0) than spica group which was significantly higher, occurred in 09 patients (mean 9.6^0) (P = 0.001).

Rotational deformity was higher in spica group ranging from 10^0 internal rotation to 20^0 external rotation while in surgical group range is 5^0 internal rotation to 15^0 external rotation. This deformity is significantly higher

in spica group (mean 14.34) than is surgical group (mean 5.32) P < 0.005 table 3.

Similarly time of healing was found significantly less in TEN at a median of 6.36 weeks (range 5-8 weeks) where as in spica group (range was 6-12 weeks) with median 8.36 weeks P = 0.001 Table 3.

The duration of non weight bearing (P < 0.001) post operative duration at full weight bearing were all significantly higher in spica group in comparison with nailing group. (Table-3)

There was no major complication in surgical group while minor complication like skin irritation found in 02 cases. Similarly superficial infection was recorded in 03 cases which was settled by giving antibiotics on the other hand in spica group 10 cases 33% had major complications including deformity (angulation, rotational, shortening) which is significantly higher P < 0.001.

After 06 months of followup, The difference in limb length discrepancy is significant between two groups. It was higher in spica group mean 1.22cm than in TEN mean 0.54 cm (P < 0.001) Table 3.

The proportion of patients with major complication was significantly higher in spica group. (P < 0.001).

DISCUSSION

In children, spica casting with skeletal traction is used traditionally for the management of femoral shaft fractures, recent data reveals it possible effects on economics, emotional, social and educational costs. Contrary to this, elastic intramedullary achieved as significant popularity due to its psycho-socioeconomics and clinical outcome with a reduced rate of complications.[11-12] In this study, we compared TEN surgical method with traction and spica cast with regards to duration bone union, hospital stay, time to start walking independently or with the help of support, parent satisfaction and return to school.

Our findings are in agreement with various other studies showing the benefits and efficacy of elastic nails for the management of femoral-shaft fractures. A study done by Wright and other used elastic intramedullary nail (antero-grade or retrograde) with kirschner wires or pins[13]. The data reveal that complications associated with TEN, include delayed unions, re-fractures, varus or valgus malalignments, nail tip irritations, malrotation, proximal nail migration and reached an overall compilation rat i.e. 11.7%[14].

We recorded that external fixation is an appropriate modality for the management of frmoral fractures in children, particularly when dealing with maultitrama-injured child and open fracture. Surgical management for these fractures using various fixation devices (plating, flexible nails, or antegrade trochanteric nail) achieved significant satisfactory results with lower rate of compilations in children more than 8 years of age, these findings are similar to other studies[15,16]

We recorded some difference in results with a study by Saseendar's, where patients in the surgical group were discharged only after suture removal to have a closer follow-up for the presence of early postoperative complications (if any), and the spica patients were commonly discharged after one or two days following spica casting after assessing for the presence of plaster-of-Paris-related complications. We recorded shorter time to start walking independently or with support and early return to school in patients managed With TEN while compared those with spica casting. It may be due to better contact of the fracture surfaces and anatomical reduction in those undergoing TEN and it is in accordance to with some other studies[17,18]. We recorded a higher frequency of malunion in traction and spica group when compared to those with TEN groups, these findings are comparable with a study by Lascombes et al, where traction and cast was compared with intramedullary nailing[19] and recorded mal-union in traction and cast group[20]. Some other studies revealed that the rate of malunion was higher in traction and cast group than those with TEN groups.

CONCLUSION

We concluded that outcome is significantly better in TEN group as compared to those undergoing traction followed by spica cast.

Author's Contribution:

Concept & Design of Study:	Muhammad Imran
Drafting:	Haider Ali Bhatti & Muhammad Imran
Data Analysis:	Haider Ali Bhatti
Revisiting Critically:	Muhammad Imran
Final Approval of version:	Muhammad Imran

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Mortality in Acute Upper GIT BleedingA

Frequency of Mortality in Patient Having High Aims 65 Score Greater or Equal to 2 in Acute Upper Gastrointestinal Bleeding

Baseer Sultan Ahmad, Shahid Karim, Adeel Ahmad, Muhammad Mansoor ul Haq and Perzez Ashraf

ABSTRACT

Objective: To determine the frequency of mortality in patient having high AIMS 65 score greater or equal to 2 in Acute Upper Gastrointestinal Bleeding.

Study Design: Retrospective observational study

Place and Duration of Study: This study was conducted at the Department of Gastroenterology and Hepatology, Liaquat national hospital, Karachi from December 2015 to December 2016.

Materials and Methods: We analyzed 158 patients who presented with melena or hematemesis in Emergency Unit Patients with hypovolemic shock or altered sensorium were shifted to intensive care unit for resuscitation, blood units were transfused to maintain hemoglobin up to 8gm/dl and patients having AIMS 65 score greater or equal to 2 were included in this study. The AIMS65 is simple and effortless to calculate, variables include albumin, international normalized ratio (INR), mental status, systolic blood pressure, and age. The score is calculated at bedside, in the emergency department, as an initial risk evaluation tool. Patients with AIMS 65≥2 were followed for one months and survival status in term of mortality or alive was noted.

Results: Overall 158 patients were included in our study, with mean age of 52.91±11.62 years. Frequency of mortality in patient having high aims 65 score in UGIB was observed in 8.86%.

Conclusion: AIMS 65 is a modest, validated, risk assessment score that prognosticate in hospital mortality in patients with UGIB.

Key Words: Upper Gastrointestinal Bleed, Mortality, AIMS 65 score

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INTRODUCTION

Upper gastrointestinal bleeding (UGIB) is a global challenge and disastrous medical entity that demands urgent intervention.[1] It is a serious event which can consequence in substantial morbidity and mortality. In America, this incident occurs in 50-150 per 100,000 people/year. Mortality rate due to UGIB varies between 4-14% in line with patient's condition and given management.[2] Acute upper gastrointestinal bleeding is a lethal and devastating casualty encountered frequently in emergency department. which requires urgent attention and therapeutic intervention. It is indeed is a challenging issue for Gastroenterologists. In United States every year 300,000 or more hospitalizations are due to UGIB with mortality rate around 15%.[3]

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UGIB is anatomically defined as hemorrhage proximal to the ligament of Treitz. Bleeding from gastrointestinal tract is manifested by both hematemesis and melena or either alone.[4]

There are many causes of upper gastrointestinal bleeding which mainly divided into variceal bleeding and non variceal bleeding. Causes of non-variceal Bleeding includes acid peptic disease, Mallory Weiss syndrome, Erosive Gastritis, severe Duodenitis, Angiodysplasia and malignancy.[5] Non-steroidal anti-inflammatory drugs use is associated with up to five folds raised the risk of bleeding.[6]

An ultimate hurdle and a challenge in managing patients with UGIB is to correctly identify on time patients who have the potential to rebleed or a high risk for mortality.[7] An optimal risk assessment score is the one , which can be effortlessly calculated in emergency room at bed side, immediately after UGIB and predict justified outcomes.[8,9] In previously published literature we came across a list of validated scoring system, which were complex and required of variables such as clinical parameters, endoscopic finding , and laboratory workup, which was integrated into a score that prognosticated the risk for re-bleeding, mortality, need for aggressive intervention and lastly appropriate time to discharge.[9]

Early risk stratification is now highly being recommended by application of risk stratification scores, such as Rockall and Glasgow Blatchford scores, which exceptionally guides to prioritize sick patients and estimate anticipated consequences[10]. Unfortunately the existing scores are not used commonly in clinical settings as they are time consuming to analyze and demands endoscopic findings, unobtainable in emergency department.[11] AIMS 65 is a easily calculated bedside risk assessment predicting infirmary fatality ,number of days in hospital stay and cost approximation. It contains 5 elements that includes serum albumin less than 3gms/dl, Internationalization unit (INR) 1.5 or greater, change in mental status, Systolic Blood Pressure 90mmHg or lower and Age greater than 65 years.[12]

MATERIALS AND METHODS

This study was conducted patients with acute upper GI bleeding admitted at the Department of Gastroenterology and Hepatology, Liaquat National Hospital Institute for Postgraduate of health Sciences, Karachi after the approval by the institutional ethical review board, written consent was taken from the patient or attendants. All patients, either gender, with age 18-70 years, presented with history of melena or hematemesis, coffee ground vomiting, fresh blood in nasogastric tube aspirate, in emergency unit, undergone comprehensive assessment in the emergency department incorporating detailed history and clinical examination checking vitals (blood pressure, pulse, temperature respiratory rate), hematology and biochemistry investigations included(Complete blood count, INR liver functions test, Albumin and creatinine). Patients with hypovolemic shock or altered sensorium were shifted to intensive care unit for resuscitation, blood units were transfused to maintain hemoglobin up to 8gm/dl. AIMS 65 was calculated by allocating one point to each variable, serum albumin less than 3gms/dl, Internationalization unit (INR) 1.5 or greater, altered mental Sensorium, Systolic Blood Pressure 90mmHg or lower and Age greater than 65 years. All patients were given intravenous omeprazole infusion. Urgent endoscopy was done within 12 hours to make endoscopic diagnosis and take therapeutic decisions to achieve hemostasis.

Mortality risk as per inclusion criteria of all patients with AIMS 65 ≥2 was included in this study. Patients with AIMS 65≥2 were followed for one months and survival status in term of mortality or alive was noted. Patients excluded were those with acute or chronic liver diseases and patients who were on antiplatelet and anticoagulation. Microsoft excel and SPSS version 20 was used.

RESULTS

A total of 158 acute upper gastrointestinal bleeding patients presented with melena or hematemesis in Emergency Unit and patients having AIMS 65 score greater or equal to 2 were included in this study. Most of the patients' were above 40 years of age as presented in Figure I. The average age of the patients was 52.91±11.62 years (95%CI: 51.08 to 54.73) and median AIMS score was 3(IQR=1) as shown in Table I. There were 82(51.9%) male and 76(48.1%) female as shown in figure 2.

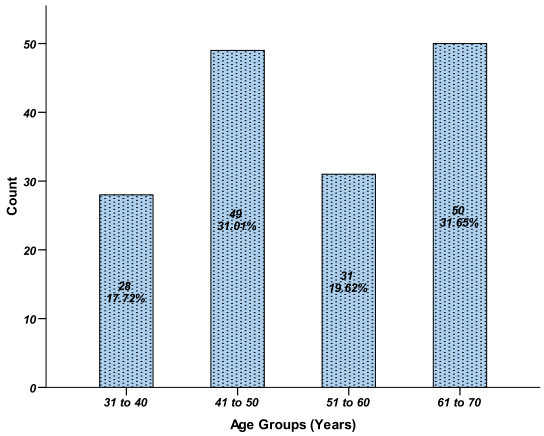

Figure No.I: Age distribution of the patients

Table No.1: Descriptive statistics of patients (n=158)

Statistics		Variables	
		Age (Years)	AIMS65 Score
Mean		52.91	2.78
95% Confidence Interval for Mean	Lower Bound	51.08	2.68
	Upper Bound	54.73	2.88
Median		51.50	3.00
Std. Deviation		11.625	.645
Inter quartile Range		20	1

The commonest cause of upper gastrointestinal bleed was duodenal ulcer was seen in 76%of patients, the most common site of duodenal ulcer was duodenal bulb. 15% of the patients had gastric ulcer, the most common site was incisura of stomach, 8% patients had esophageal ulcers, 1% of patients had Mallory Weiss tears**.** 30% of patients came with hypovolemic shock and resuscitated and required blood transfusion. 5% of the patients went radiological angioembolization in which endoscopic hemostasis could not be achieved.

Frequency of mortality in patient having high aims 65 score in acute upper gastrointestinal bleeding was observed in 8.86% (14/158) cases as presented in figure 3.

Rate of mortality was high in 61 to 70 years of age patients (p=0.025) as shown in Table 2. Similarly rate of mortality was 11% in male and 6.6% in female as

shown in table 3 but significant difference was not observed (p=0.33) as shown in table 3. Rate of mortality was significantly high in 4-5 AIMS score as compare to 2-3 AIMS score patients (35.3% vs. 5.7% p=0.0005) as shown in Table 4.

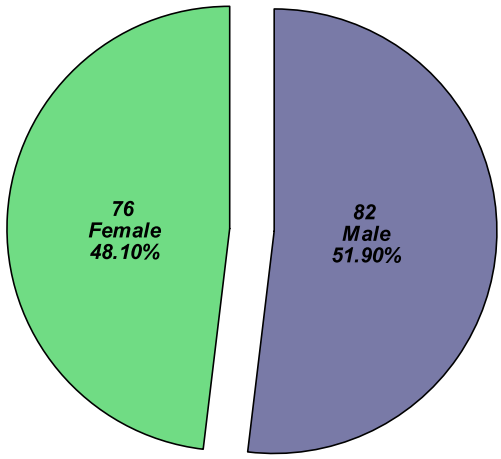

Figure No.2: Gender distribution of the patients n=158

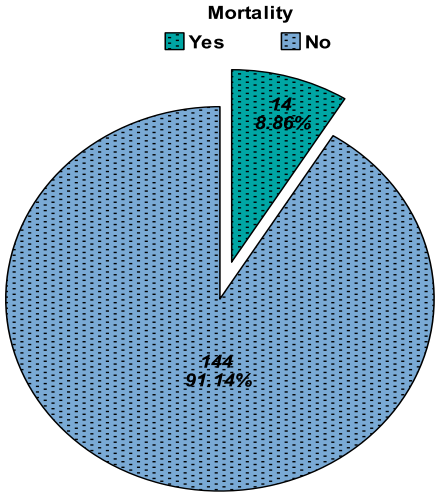

Figure No.3: Frequency of mortality in patient having high aims 65 score in acute upper gastrointestinal bleeding n= 158

Table No.2: Frequency of mortality in patient having high aims 65 score in acute upper gastrointestinal bleeding with respect to age groups

Age Groups (Years)	Mortality		Total
	Yes n=14	No n=144	
31 to 40 Years	0(0%)	28(100%)	**28**
41 to 50 Years	2(4.1%)	47(95.9%)	**49**
51 to 60 Years	3(9.7%)	28(90.3%)	**31**
61 to 70 Years	9(18%)	41(82%)	**50**

Chi-Square =9.305 p=0.025

Table No.3: Frequency of mortality in patient having high aims 65 scorein acute upper gastrointestinal bleeding with respect to gender

Gender	Mortality		Total
	Yes n=14	No n=144	
Male	9(11%)	73(89%)	**82**
Female	5(6.6%)	71(93.4%)	**76**

Chi-Square =0.94 p=0.33

Table No.4: Frequency of mortality in patient having high aims 65 scorein acute upper gastrointestinal bleeding by aims score

AIMS Score	Mortality		Total
	Yes n=14	No n=144	
2 – 3	8(5.7%)	133(94.3%)	**141**
4-5	6(35.3%)	11(64.7%)	**17**

Chi-Square =16.48 p=0.0005

DISCUSSION

Acute upper gastrointestinal (GI) bleeding is a catastrophic event, which needs urgent assessment, resuscitation, risk prognostication, and lastly urgent intervention, with an annual mortality rate 10 - 14 %.[13] Early risk stratification is now highly being recommended in the managing patients by application of precise, authentic risk stratification scoring system, will lead to better Triage and outcome.[14,15] Unfortunately the existing scores are not used commonly in clinical settings as they involve multiple variables to calculate and requires endoscopic findings, which are unobtainable in emergency department.[16] AIMS 65 is a easily calculated bedside scoring system , with easily accessible variables easily calculated in causality unit. It contains 5 elements that includes serum albumin <3gms/dl, International normalization unit (INR)>1.5, change in mental Sensorium, Systolic Blood Pressure 90mmHg or lower and Age >65 years .Literature search has revealed its accuracy in prognosticating mortality.[17] Nevertheless it's accuracy in taking decision of intervening with need for endoscopy is still uncertain.[18]

With guidance from risk assessment scoring systems one can foresee the most adverse outcomes in patients with upper gastrointestinal hemorrhage, one of which is death. Several factors have been acknowledged, which includes history of ongoing cardiac, kidney or other diseases, age of patient, presence of ongoing hemorrhage, endoscopic findings, ongoing hypovolemic shock, all there prognosticate risk for mortality.[19,20] Rockall score is one of the most commonly implicated one in clinical practice but requires endoscopy finding to calculate the score, which is impossible to assess in emergency room. The other

scores have a list of variables and parameters, which makes them complex to comprehend.

In this study the average age of the patients was 52.91±11.62 years (95%CI: 51.08 to 54.73) There were 82(51.9%) male and 76(48.1%) female. Frequency of mortality in patient having high AIMS 65 score in acute upper gastrointestinal bleeding was observed in 8.86% (14/158) cases within 66 weeks. A study showed that patients with AIMS65 score more than and equal to 2 had mortality was 5.3%. They also reported that AIMS 65 is an authentic scoring system foresees in hospital fatality.[12]

Rate of mortality was high in 61 to 70 years of age patients (p=0.025). Similarly rate of mortality was 11% in male and 6.6% in female. Rate of mortality was significantly high in 4-5 AIMS score as compare to 2-3 AIMS score patients (35.3% vs. 5.7% p=0.0005).

One of the variables is directly co-related to in hospital mortality, is serum albumin levels literature search has revealed low albumen levels are associated with increased in hospital mortality.[21,22] A multi-centric study was conducted in United Kingdom, study highlighted the direct correlation with impaired coagulation profile in patients with upper GI bleed, it concluded INR greater the 1.5 is an independent factor associated with rebleeding, mortality and requiring retherapeutic intervention endoscopic or radiological.[23, 24]

The AIMS65 score, noninvasive, preendoscopic score which precisely foresees in-hospital death and number of days in hospital spent, it is modest, and with variables prognosticating outcomes.[25] recent literature has validated its strength in risk stratification in both of variceal and non-variceal bleed.[12, 25]

AIMS65 is a risk assessment scale that uses data available prior to endoscopy. Literature propose its validity for foreseeing adverse outcomes.[12, 25]

Literature search, gastroenterology societies, such as American journal of gastroenterology's clinical guiding principles stresses upon the use of risk stratification scores for prognostication which guide further therapeutic plans in management of UGIB.[24,26] Rockall and Glasgow Blatchford score (GBS)were mostly used previously. In previous studies (GBS) was seen to be better than rockall score.[26,27] However, GBS requires integration of clinical history, vitals laboratory variables and require quiet an effort to calculate.

In a comparison study between AIMS 65 and (GBS), Hyett et al. concluded AIMS 565 much more reliable than GBS in prediction of mortality, both of the scores showed equal in prediction of rebleeding, endoscopic, surgical or radiological intervention, need for ICU, timing of endoscopy and no of days of hospital stay.[17] Prospective studies are desired to endorse the capability of the score to estimate rebleeding, length of stay, and cost.

CONCLUSION

AIMS 65 is a modest, validated, pre-endoscopic, noninvasive risk assessment scoring system that prognosticate hospital mortality in patients with UGIB.

Author's Contribution:

Concept & Design of Study:	Baseer Sultan Ahmad
Drafting:	Shahid Karim
Data Analysis:	Muhammad Mansoor ul Haq
Revisiting Critically:	Perzez Ashraf
Final Approval of version:	Shahid Karim & Baseer Sultan Ahmad

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Pain After Inguinal Hernia Plasty

Comparison Between Skin Staples and Polypropylene Suture in Patients of Inguinal Hernia for Securing Mesh in Term of Postoperative Pain

Irfan Ahmad, Rafaqat Shafique and Muhammad Zarak Awais

ABSTRACT

Objective: To compare the skin staples and polypropylene suture for securing mesh in Lichtenstein inguinal hernioplasty in term of post-operative pain.

Study Design: Randomized controlled study.

Place and Duration of Study: This study was conducted at the Department of Surgery, Nishtar Hospital, Multan from July 2016 to January 2017.

Materials and Methods: Total 266 patients of inguinal hernia either male or female and having age 20-60 years were selected. Assessment of post-operative pain was done by using VAS after 24 hours of surgery.

Results: Mean age of the patients was 34.37 ± 10.95 years, mean duration of hernia and VAS was 5.52±3.312 years and 4.54±2.811 respectively. Post-operative pain was noted in 39 (29.3%) patients of group A and in 59 (44.4%) patients of group B. Statistically significant (P = 0.02) difference between the frequency of post-operative pain was noted.

Conclusion: Results of this study revealed that post-operative pain rate was significantly high in Polypropylene as compared to skin staple group. Significant difference was seen between the male patients of both groups but the difference was insignificant between female patients of both groups. Similarly difference in younger age group as significant but insignificant in older age group for both study groups.

Key Words: Polypropylene suture, Lichtenstein inguinal hernioplasty, Mean operative time. Skin staples, Post-operative pain

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INTRODUCTION

External hernias (EH) are one of the common surgical problem and inguinal hernias accounted for about 73% cases.[1] Surgery is the best option for prevention of hernia's complications.[2,3] Inguinal hernia repair is one of the commonly performed surgeries. Annual incidence rate of inguinal hernia is 13/1000 patients.[4] By the year 1989, tension-free hernioplasty was started at the Lichtenstein Hernia Institute to reduce the post operative pain, recurrence and recovery period.[5] The Lichtenstein hernioplasty consists of reduction of the hernia contents followed by reinforcement of the inguinal floor with a prosthetic mesh and creation of a new internal ring.[6] Polypropylene suture is standard way of securing mesh in position on the posterior wall of the inguinal canal.[7,8]

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With the recent advancement, a modified hernioplasty using skin staples for the anchorage of mesh is under trial which may decrease post-operative pain and operative time.[3] A recent study compared the results of both methods of mesh fixation. It showed that the technique of mesh fixation with skin staples is as effective as conventional fixation with polypropylene sutures with an important added advantage of fewer complications.[3]

As inguinal hernia is a common clinical problem, new innovations in the surgical intervention are developing day by day in order to benefit the patients by reducing the postoperative pain. The results of this study may guide us that which one procedure has less pain. So, the surgeons adopt that procedure with less pain.

MATERIALS AND METHODS

This study was done at Department of Surgery, Nishtar Hospital, Multan from July 2016 to January 2017. Total 266 patients of inguinal hernia either male or female and having age 20-60 years were selected for this randomized controlled. Patients having inguino-scrotal swelling (reducible, non-tender) were labelled as having inguinal hernia. Patients having complicated (irreducible, strangulated or obstructed) inguinal hernia, all the patients with history of diabetes mellitus,

patients with history of chronic renal failure, patients with history of bleeding disorders, immunocom promised and patients with history of recurrent and bilateral inguinal hernia were excluded from the study. All the selected patients were into two equal groups A & B randomly. Patients of group A were managed with skin staples and patients of group B were managed with polypropylene suture. After surgery for pain management, Injection diclofenac sodium 75mg IM BD was given.

Assessment of postoperative pain was done by using VAS (Visual Analogue Scale) and score 4 and above was taken as pain at the end of 24 hours of surgery. After 24 hours of surgery post-operative pain was assessed and recorded on pre-designed proforma along with demographic profile of all the patients.

All the collected data was analysed by using SPSS version 20. Mean and standard deviation was calculated for age and frequencies were calculated for gender and post-operative pain (Yes/No). Chi-square test was applied to compare the frequency of post-operative pain in both groups. Stratification was done for age and gender and Chi-square test was applied to see the effect of these on postoperative pain. P-value less than or equal to 0.05 was considered significant.

RESULTS

Total 266 cases of inguinal hernia were selected for this study. Patients were equally divided into two groups A & B. Patients of group A were managed with skin staples and patients of group B were managed with polypropylene suture and post-operative pain was noted on after 24 hours of surgery. Mean age of the patients was 34.37±10.95 years, mean duration of hernia and VAS was 5.52±3.31 years and 4.54±2.81 respectively. Mean age of the patients of Group A was 34.91±10.88 years, mean duration of hernia and VAS was 5.53±3.32 years and 4.54±2.81 respectively. Mean age of the patients of Group B was 33.83±11.03 years, mean duration of hernia and VAS was 5.50±3.30 years and 4.53±2.84 respectively.

Comparison of frequency of post-operative pain between both groups was done. Post-operative pain was noted in 39 (29.3%) patients of group A and in 59 (44.4%) patients of group B. Statistically significant (P = 0.02) difference between the frequency of post-operative pain was noted (Table 1).

In age group 20-40 years, out of 100 patients of group A, post-operative pain was noted in 33 (33%) patients. Out of 107 patients of group B, post-operative pain was noted in 49 (45.8%) patients. Difference between post-operative pain for both groups was statistically in significant with p value 0.0658. In age group 41-60 years, out of 33 patients of group A, post-operative pain was noted in 6 (18.2%) patients. Out of 26 patients of group B, post-operative pain was noted in 10 (38.5%) patients. Difference between post-operative pain for both groups was statistically in significant with p value 0.1391 (Table 2).

After comparing post-operative pain between male patients of both groups, significant (P = 0.0243) difference was noted between the post-operative pain in both groups but insignificant (P = 0.6372) difference was noted between the post-operative pain for female patients of both groups. (Table 3)

Table No.1: Comparison of frequency of post-operative pain

Group	Postoperative pain		Total	P value
	Yes(%)	No (%)		
A (Staple Group)	39 (29.3%)	94 (70.7%)	133 (100%)	0.02
B(Polypropylene Group)	59 (44.4%)	74 (55.6%)	133 (100%)	

Table No.2: Age distribution

Group	**Post-operative pain**		**Total**
	Yes (%)	**No (%)**	
20-40 years (P= 0.07**)**			
A	33 (33.0%)	67 (67.0%)	100
B	49 (45.8%)	58 (54.2%)	107
41-60 years (P = 0.14**)**			
A	6 (18.2%)	27 (81.8%)	33
B	10 (38.5%)	16 (61.5%)	26

Table No.3: Gender distribution

Group	**Post-operative pain**		**Total**
	Yes (%)	**No (%)**	
Male (P = 0.02)			
A	36 (28.8%)	89 (71.2%)	125 (100%)
B	53 (43.1%)	70 (56.9%)	123 (100%)
Female (P = 0.63)			
A	3 (37.5%)	5 (62.5%)	8 (100%)
B	6 (60.0%)	4 (40.0%)	10 (100%)

DISCUSSION

About 5% of male population of the world affected by inguinal hernia.[9] About 100 years ago, Edward Bassini described the open method of inguinal herniorrhaphy.[10] Many changes have been made to this surgical procedure in the interim, with varying degrees of efficacy.[11] Lichtenstein described the tension-free inguinal hernia repair with the help of prosthetic mesh.[12] Originally, the mesh is fixed on the posterior wall of inguinal canal with the help of polypropylene 2/0 suture.[13] But Quality of life has increasingly been a matter of consideration in the assessment of medical, and above all, surgical procedures. In inguinal hernia repair, several factors of postoperative quality of life, such as pain and recovery, have recently been assessed.[14] A new modification in the repair of inguinal hernia has been developed in which prolene mesh is

being fixed on the posterior wall of inguinal canal with staples instead of polypropylene suture.[15]

In our study, average age of the cases was 34.37±10.95 years, mean duration of hernia and VAS was 5.52±3.31 years and 4.54±2.81 respectively. Average age of the cases of Group A was 34.91±10.88 years, mean duration of hernia and VAS was 5.53±3.32 years and 4.54±2.81 respectively. Average age of the cases of Group B was 33.83±11.03 years, mean duration of hernia and VAS was 5.50±3.30 years and 4.53±2.84 respectively.

In one study by Khan et al[6] mean age of the cases managed with polypropylene suture was 48.99±14.27 years and mean age of the cases managed with skin staple was 46.37±14.12 years. In another study by Bawahab et al[16], mean age of the cases was 35.83±13.338 years.

In present study, post-operative pain was noted in 29.3% patients of group A (Skin staple group) and in 44.4% patients of group B (polypropylene group). Statistically significant (P = 0.0155) difference between the frequency of post-operative pain was noted.

In one study by Khan et al,[6] postoperative pain was noted in 23.3% cases managed with polypropylene group and in staple group, postoperative pain was noted in 29.3% cases. Findings of this study are in agreement with our study. Similarly Zwaal et al reported that postoperative pain was reduced when staples were used to fix the mesh 66% for polypropylene group versus 51% for staple group.[3] This study showed that the technique of mesh fixation with skin staples is as effective as conventional fixation with polypropylene sutures with an important added advantage; fewer complications or postoperative pain.[3] Shaikh et al[17] also found significant difference between post-operative pain between the both groups after surgery.

Damani et al[18] also reported that postoperative pain was less in skin staples group than in Polypropylene suture group. Interpretation of the results of our study shows that anchoring mesh with staples in Lichtenstein inguinal hernioplasty is superior as compared to fixation with polypropylene suture in term of post-operative pain.

On the other hand, Shivhare et al[19] reported in their study insignificant difference in post-operative pain between the polypropylene and skin staple group.In another study, Mills et al[20] also reported insignificant difference between postoperative pain of both groups. Similarly Garg et al[21] reported insignificant difference between the post operative pain of both groups.

CONCLUSION

Results of this study revealed that post-operative pain rate was significantly high in Polypropylene as compared to skin staple group. Significant difference was seen between the male patients of both groups but the difference was insignificant between female patients of both groups. Similarly difference in younger age group as significant but insignificant in older age group for both study groups.

Author's Contribution:

Concept & Design of Study:	Irfan Ahmad
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Data Analysis:	Muhammad Zarak Awais
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Final Approval of version:	Irfan Ahmad

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Intestinal Perforation in TB

Frequency of Intestinal Tuberculosis in Patients of Intestinal Perforation Presenting in Surgical Emergency

Zulfiqar Ali Shahid, Irfan Ahmad and Muhammad Zarak Awais

ABSTRACT

Objective: To determine the frequency of intestinal tuberculosis in patients of intestinal perforation presenting in surgical emergency.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Department of Surgery, Nishter Hospital Multan from January 2016 to June 2016.

Materials and Methods: Total 83 patients having age from 20-50 years, either male or female with intestinal perforation were selected. Laparotomy was performed in all selected patients and tissue was sent to laboratory for histopathology.

Results: Mean age of the age range was 20-50 years with mean age 33.88±9.82 years. Out of 83 patients, intestinal tuberculosis was found in 20 (24%) patients. In age group 36-50 years out of 39 (46.99%) patients, intestinal tuberculosis was found in 10 (25.64%) patients. No association (P = 0.800) between age and intestinal tuberculosis was found. Total 40 (48.19%) patients were malnourished and intestinal tuberculosis was found in 16 (40%) patients. Total 43 (51.81%) patients were properly nourished and intestinal tuberculosis was noted in 4 (9.30%) patients. Significantly (0.001) higher rate of intestinal tuberculosis was noted in malnourished patients as compared to properly nourished patients.

Conclusion: Acute abdominal condition is one of the most common emergencies in trauma room, and acute abdominal tuberculosis is one of common causes of acute abdomen in endemic areas as Intestinal tuberculosis is a common extra-pulmonary Manifestation of tuberculosis. Its incidence is increasing in urban and rural areas due to poverty, under nutrition and overcrowding, Intestinal and abdominal tuberculosis is a systemic disease.

Key Words: Intestinal tuberculosis, acute abdomen, perforation, gastrointestinal infection, morbidity, mortality

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INTRODUCTION

Tuberculosis has been declared a global emergency by the World Health Organization (WHO) and is the most important communicable disease worldwide.[1] Approximately one third of the world population is infected with TB and about three million die each year from this disease.[2] Tuberculosis remains the principal cause of death in the developing countries, probably due to poverty, lack of education, low detection rate, non-availability of experienced staff and insufficient coverage of the community by immunization programme.[3]

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The incidence of tuberculosis is again on the rise in developed countries, due to the influx of immigrants from third world countries, HIV infection and increasing use of immunosuppressive therapy.[4]

The disease may involve any system of the body but abdomen is one of the commonest site involvement after lungs.[5] Though potentially curable, abdominal tuberculosis continues to be a major cause of morbidity and mortality. In the abdomen, tuberculosis may affect the gastro-intestinal tract, peritoneum, lymph nodes, and solid viscera.[6]

Perforation is a serious complication of abdominal TB, associated with high morbidity and mortality. The low incidence of tuberculous perforation is due to reactive fibrosis of the peritoneum. However, in recent years, intestinal perforation, which was relatively rare in the past, has been reported more frequently. The cause of this remains unknown.[7] Intestinal tuberculosis has usually one of the three main forms i.e. ulcerative, hypertrophic or ulcerohypertrophic, and fibrous structuring form.[8] The disease can mimic various gastrointestinal disorders, particularly the inflammatory

bowel disease, colonic malignancy, or other gastrointestinal infections.[9]

It usually runs an indolent course and presents late with complications especially acute or sub-acute intestinal obstruction due to mass (tuberculoma) or stricture formation in small gut and ileocaecal region or gut perforation leading to peritonitis.[9]

Inspite of advancement in medical imaging, the early diagnosis of abdominal tuberculosis is still a problem and patients usually present when complications had occurred. This study will be found out the prevalence of Intestinal Tuberculosis in cases of Acute Abdomen, presenting as intestinal obstruction/peritonitis. We can minimize these fatal complications by early diagnosis and timely treatment of the cases.

MATERIALS AND METHODS

In this cross sectional study, total 83 patients with intestinal perforation either male or female having age range from 20-50 years were selected from the Department of surgery, Nishter Hospital Multan from January 2016 to June 2016. Patients with history of typhoid, patients with duodenal perforation (Hole in the anterior wall of duodenum after exploration) and patients with traumatic perforation (Hole in any part of the gut after trauma) were excluded from the study. An approval was taken from institutional review committee and written informed consent was taken from every patient. Laparotomywas performed in all selected patients and tissue was sent to laboratory for histopathology. Findings of the Lab was entered in pre-designed proforma in term ofintestinal tuberculosis (Yes/No). Demographic profile (age, gender, area of residence) of all the patients was also entered in Performa.

RESULTS

Total 83 patients with intestinal perforation presenting in surgical emergency were recruited for this study. Mean age of the age range was 20-50 years with mean age 33.88±9.82 years. Out of 83 patients, intestinal tuberculosis was found in 20 (24%) patients (Table 1). Patients were divided into two age group i.e. age group 20-35 years and age group 36-50 years. In age group 20-35 years, out of, 44 (53.01%) patients, intestinal tuberculosis was found in 10 (22.73%) patients. In age group 36-50 years out of 39 (46.99%) patients, intestinal tuberculosis was found in 10 (25.64%) patients. No association (P = 0.800) between age and intestinal tuberculosis was found (Table 2). Male patients were 52 (62.65%) and female patients were 31 (37.35%) and intestinal tuberculosis was noted in 13 (25%) male patients and 7 (22.58%) female patients. But insignificant association between gender and intestinal tuberculosis was noticed with p value 1.00 (Table 3). Total 40 (48.19%) patients were malnourished and intestinal tuberculosis was found in 16 (40%) patients. Total 43 (51.81%) patients were properly nourished and intestinal tuberculosis was noted in 4 (9.30%) patients. Significantly (0.001) higher rate of intestinal tuberculosis was noted in malnourished patients as compared to properly nourished patients (Table 4).

Table No.1: Frequency of intestinal tuberculosis

Intestinal Tuberculosis	No.	%
Yes	20	24.0
No	63	76.0

Table No.2: Association of age with intestinal tuberculosis

Age group	Intestinal tuberculosis		Total	P value
	Yes (%)	No (%)		
20-35	10 (22.73)	34 (77.27)	44 (53.01)	0.800
36-50	10 (25.64)	29 (74.36	39 (46.99)	
Total	20 (24)	63 (76)	83 (100%)	

Table No.3: Association of gender with intestinal tuberculosis

Gender	Intestinal tuberculosis		Total	P value
	Yes (%)	No %)		
Male	13 (25)	39 (75)	52 (62.65)	1.00
Female	7 (22.58)	24 (77.42)	31 (37.35)	
Total	20 (24)	63 (76)	83 (100)	

Table No.4: Association of nutritional status with intestinal tuberculosis

Nutritional status	Intestinal tuberculosis		Total	P value
	Yes (%)	No (%)		
Malnourished	16 (40)	24 (60)	40 (48.19)	0.001
Properly nourished	4 (9.30)	39 (90.70)	43 (51.81)	
Total	20 (24)	63 (76)	83 (100)	

Table No.5: Association of area of residence with intestinal tuberculosis

Area of residence	Intestinal tuberculosis		Total	P value
	Yes (%)	No (%)		
Rural	14 (45.16)	17 (54.84)	31 (37.35)	0.001
Urban	6 (11.54)	46 (88.46)	52 (62.65)	
Total	20 (24)	63 (76)	83 (100%)	

Out of 83 patients, 31 (37.35%) patients belonged to rural area and 52 (65.65%) patients belonged to urban area and intestinal tuberculosis was noticed in 14 (45.16%) patients and 6 (11.54%) patients of rural and urban area respectively. Higher rate intestinal tuberculosis was noticed in patients of rural area as compared to urban area with p value 0.001 (Table 5).

DISCUSSION

Extra-pulmonary tuberculosis (TB) can involve any part of the gastrointestinal tract from mouth to anus, the peritoneum, and the pancreatobiliary system.[10] The clinical presentation of abdominal TB may mimic other common and rare gastrointestinal diseases thus presenting a diagnostic challenge.[11] Abdominal tuberculosis may be present as a complication of advanced pulmonary tuberculosis or may manifest itself without active pulmonary disease.[12] Before the era of effective antitubercular drug therapy, the prevalence of intestinal tuberculosis on autopsies of patients who died with active pulmonary tuberculosis was 55% to 90%.[13] One of the previous studies conducted in Pakistan has shown intestinal tuberculosis as the second leading cause of intestinal obstruction.[14] A patients with gastrointestinal TB can present with an acute abdomen mimicking acute intestinal obstruction and or peritonitis resulting in a diagnostic and management dilemma.[15]

Intestinal and abdominal tuberculosis, like tuberculosis elsewhere in the body affects the young people at the Peak of their productive life, this fact has serious impacts on the national economy and production, as working and productive class of community is replaced by sick and ill individuals.[16]

Mean age of the age range was 20-50 years with mean age 33.88±9.82 years. This is closer to those reported by Gondal et al[17] 29 years and Iqbal et al[8] 25 years.

Patients were divided into two age group i.e. age group 20-35 years and age group 36-50 years. In age group 20-35 years, out of, 44 (53.01%) patients, intestinal tuberculosis was found in 10 (22.73%) patients. In age group 36-50 years out of 39 (46.99%) patients, intestinal tuberculosis was found in 10 (25.64%) patients. No association (P = 0.800) between age and intestinal tuberculosis was found. Seventy three percentages (73%) of the patients in one study were below 40 years. and 45.5% of the patients were between 20–40 years.[16] This is agree with the results of our study.

Male patients were 52 (62.65%) and female patients were 31 (37.35%) and intestinal tuberculosis was noted in 13 (25%) male patients and 7 (22.58%) female patients. But insignificant association between gender and intestinal tuberculosis was noticed with p value 1.00. But Jaskani S et al[18] reported female (59.6%) predominance as compared to male (40.4%).

In our study, out of 83 patients, intestinal tuberculosis was found in 24% patients. In a study by Shaikh et al, frequency of intestinal tuberculosis is 16%.[8]In one study by Shimy et al,[16] out of 90 patients with acute abdomen 14 patients (15.5%) found with abdominal tuberculosis which is in agreement with our findings. Similarly Iqbal MN et al[19] found 16.19% patients with intestinal tuberculosis after abdominal surgery. Farooq et al[20] reported higher (29.03%) rate of intestinal tuberculosis than our study. Mukhopadhyay et al[21] reported frequency of intestinal tuberculosis as 10%, these findings are not comparable with our findings.

CONCLUSION

Acute abdominal condition is one of the most common emergencies in trauma room, and acute abdominal tuberculosis is one of common causes of acute abdomen in endemic areas as Intestinal tuberculosis is a common extra-pulmonary Manifestation of tuberculosis. Its incidence is increasing in urban and rural areas due to poverty, under nutrition and overcrowding, Intestinal and abdominal tuberculosis is a systemic disease. Early diagnosis is the key factor in avoiding systemic and local complications of intestinal tuberculosis, and Anti-tuberculous therapy remains main stay of treatment after the surgery as early as possible surgical interference in acute abdominal tuberculosis is important to decrease the prevalence of morbidity and mortality in the patients.

Author's Contribution:

Concept & Design of Study:	Zulfiqar Ali Shahid
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Data Analysis:	Muhammad Zarak Awais
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Mortality in Cirrhotic Patients

Frequency of Mortality in Cirrhotic Patients with Acute Variceal Hemorrhage with High MELD (Model for End Stage Liver Disease) Score

Shahid Karim, Baseer Sultan Ahmad, Perzez Ashraf and Mansoor ul Haq

ABSTRACT

Objective: To determine the frequency of mortality in cirrhotic patients with acute variceal hemorrhage with high MELD score

Study Design: Observational study

Place and Duration of Study: This study was conducted at the Department of Gastroenterology and Hepatology, Liaquat National hospital, Karachi from December 2015 to December 2016.

Materials and Methods: Total 193 patients of acute UGI bleeding with cirrhosis were admitted from the period. Patients with hemoglobin <7g/dl were transfused according to individual requirements and resuscitated. Esopghagoduodenoscopy was done to confirm the diagnosis and treat variceal hemorrhage by variceal band ligation for esophageal varices or cyanoacrylate injection in gastric varices within 24 hours of admission. Endoscopy was performed by well experienced and trained Gastroenterologists. Patients MELD score were calculated, those with high MELD score were observed for inhospital mortality. After discharge from hospital patients were followed up in outpatient department for a period of one month.

Results: There were 124 male and 69 female patients. The mean age was 45.94±10.44 years. The mean MELD score was 26.19±5.45. Mortality was 16 (8.3%) cases. Among mortality cases, mean MELD score was 27.08±5.46. The association of mortality was found significant with high MELD score.

Conclusion: MELD score, if high may be used as a marker for identifying and management of high risk patients of cirrhosis with variceal hemorrhage

Key Words: Mortality, Liver Cirrhosis, MELD Score

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INTRODUCTION

Portal hypertension is the hypertension in hepatic portal system, which is stated as hepatic venous gradient (HVPG) greater than 6mmHg.Cirrhoss is the most common cause of portal hypertension in adults, it is a chronic progressive disease which is manifested with a dynamic circulatory changes in the body with complications which can lead to mortality if untreated. It is a cause of residual disability worldwide and a challenge for physicians and health care system.[1,2]

Acute variceal hemorrhage is a catastrophic and life threating complication of cirrhosis, with fatality extraordinary as 20- 35%.[4] It is very difficult to estimate prognosis in these patients because outcomes is also influenced by the presence of fibrosis, which is preexisting injury in diseased liver, current synthetic function of liver status and lastly severity of hemorrhage itself.[5] Numerous factors now have been recognized which are linked to increased risk of mortality after the episode of variceal hemorrhage ,which include Child–Turcotte–Pugh score, presence of portal vein thrombosis, hepatocellular carcinoma, acute on chronic liver failure ,ongoing hemorrhage at endoscopic evaluation, aminotransferases level and severity of portal hypertension assessed by hepatic venous pressure gradient (HVPG).[6]

Variceal hemorrhage's predisposing factors are size, shape, pressure, and place of varices and also other clinical manifestations of underline diseases.[7]The varices commonly expand in distal portion of esophagus, stomach and rectum; however other parts of the gastrointestinal tract can be affected. Varices in middle portion of esophagus are formed deeply in the sub-mucosal layer and have mucosal support but in distal portion varices are more superficial and have less mucosal support, so they have more susceptibility for bleeding. Gastric varices hemorrhages are also common.[8]

These varices can be the continuation of esophageal varices in greater or lesser curvature (GOV-1=Type 1 gastroesophageal varices) or it can be isolated in fundus

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(IGV1= type 1 isolated gastric varices) with prevalence of 10% and 90% respectively.[9] The more serious chronic hepatic disease takes place with the more complications and the more mortality because of hypovolumic shock, infections, and hepatic failure. Up to now different methods are created to predict the complications and mortality rate of cirrhosis.[5, 10]

The MELD score is highly validated, it is extensively used to access disease severity, and its implications include predicting survival among cirrhotic patients undergoing surgery, intensive care unit patients with infections, highlighting and categorizing patients as those who urgently require liver transplantation. MELD score has exclusively replaced the Child-Pugh scoring system.[11] The score is extensively applied to estimate outcomes which includes post-surgical liver decompansation and unanimously validated for prioritization of cirrhotic patients for liver transplantation.[12]

Thus MELD and child Pugh scoring systems are both applicable for estimation of survival but however MELD score supremacy over child Pugh scoring system needs more validation .[13]

Therefore, this study was designed with the aim to determine the frequency of mortality and morbidity in cirrhotic patients with acute variceal bleeding with high MELD score >12.

MATERIALS AND METHODS

This Retrospective observational study was conducted at Department of Gastroenterology and Hepatology, Liaquat national hospital, Karachi from July 2015 to June 2016.

Inclusion Criteria:

1. Either gender
2. Between 18 to 60 Years
3. Decompensated Cirrhotic patients with High MELD score irrespective of Sero negative or Sero positive presenting with hematemesis or malena.
4. Patients admitted with Acute UGI bleeding within 48 hours.

Exclusion Criteria:

1. Patients with known case of tuberculosis, cardiac valvular disease, diagnosed case of malignancy.
2. Patients who did not undergo endoscopy

This retrospective observational study was conducted on 158 patients with acute upper GI bleeding admitted at the Department of Gastroenterology and Hepatology, Liaquat National Hospital Institute for Postgraduate of health Sciences, Karachi. The study was approved by ethical review committee. Informed consent was taken. In addition, MELD score was calculated based on laboratory examination. The MELD score ≥12 was considered as high score. All patients were extensively assessed which included history and physical examination by principal investigator. Patients confirming the inclusion and exclusion criteria were assessed. Blood sample was taken for laboratory examinations (Complete blood counts, liver function profile (bilirubin, aminotrasferases (AST, ALT), Creatinine, INR). Patients were resuscitated, those with hypovolemic shock were shifted in high dependency unit, stabilized, and Patients with hemoglobin less than 7 g/dl were transfused according to individual requirements. All patients received prophylactic antibiotic therapy (IV third generation cephalosporin) and intravenous octreotide 50 mcg was given bolus to reduce portal pressure and then infusion was started at 50 mcg/hour for 72 hours for suspected variceal bleeding. Endoscopy was performed within 24 hours to establish the diagnosis. All endoscopies were performed by well-trained experienced consultant gastroenterologist. Patients were classified as Variceal Bleeding Patient based on endoscopic evidence .During hospitalization patients were closely monitored and discharged when stable they were followed in outpatient department over a period of a month to observe mortality. Furthermore, patient's demographics including name, age, and gender were collected. Microsoft excel and SPSS version 20 was used.

RESULTS

Total 193 cirrhotic patients of either gender, age between 18 to 60 years with MELD score ≥12, and acute UGI bleeding within 48 hours were included in the study to determine the frequency of mortality. The results revealed, 124 male and 69 female patients, with the mean age of study subjects was 45.94±10.44 years. The frequency distribution of age is presented in Figure-I.

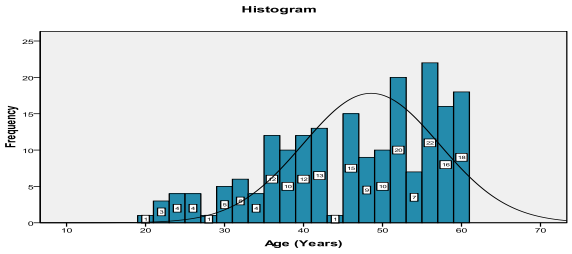

Figure No.1: Frequency distribution of age

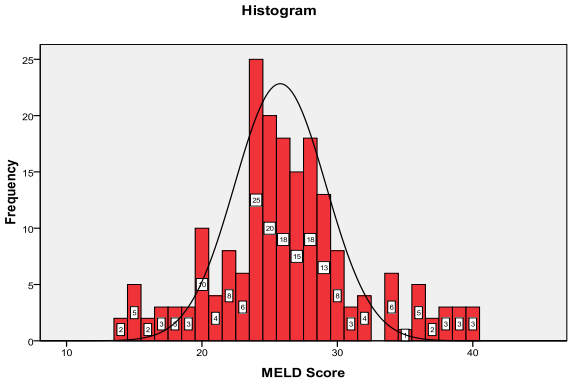

Figure No.2: Frequency distribution of meld score

The overall mean MELD score of study subjects was 26.19±5.45. As far as the outcome is concerned, mortality was observed in 16 (8.3%) cases. As shown in Table 1.

Table No.1: Discriptive statistics of age and meld score and frequency distribution of gender, mortality and cirrhosis (n=193)

	Mean ±SD	95% CI (LB – UB)	Median (IQR)	Range	Min	Max
Age (Years)	45.94 ±10.44	44.46 – 47.43	48.00 (17)	40	20	60
Meld score	26.19 ±5.45	25.41 – 26.96	26.00 (5)	26	14	40
Gender		**Frequency**		**Percentage**		
Male		124		64.2%		
Female		69		35.8%		
Mortality						
Yes		16		8.3%		
No		177		91.7%		
Cirrhosis						
Companseted		64		33.1%		
Decompanseted		129		66.9%		

Table No.2: Frequency and association of mortality according to gender (n=193)

Gender	Mortality		Total	P-value
	Yes (n=16)	No (n=177)		
Female (n=69)	9 (4.7%)	60 (31.1%)	69 (35.6%)	***0.074
Male (n=124	7 (3.6%)	117 (60.6%)	124 (64.2%)	
Total	16 (8.3%)	177 (91.7%)	193 (100%)	

Table No.3: Frequency and association of mortality according to age (years) (n=193)

Age	Mortality		Total	P-value
	Yes (n=16)	No (n=177)		
≤ 45 years (n=107)	10 (5.18%)	107 (55.45 %)	127 (60.63%)	0.019
< 45 years (n=70)	6 (3.12%)	70 (36.25%)	76 (39.37%)	
Total	16 (8.3%)	177 (91.7%)	193 (100%)	

The stratification according to gender, age, cirrhosis and MELD score was done. Post stratification association mortality was observed with these modifiers using chi square test considered p ≤0.05 as significant.

The results showed that mortalities were observed in 7 (3.6%) male patients whereas in female patients 9(4.7%) mortalities were observed but the mortality was not significantly associated with gender (p=0.074). As shown in Table-II. 10(5.18%) mortalities were observed among patients with age ≤ 45 years and 6(3.12%) mortalities were observed among patients with age > 45 years. The association of mortality was significant with age (p=0.019). As shown in Table-III). As shown in Table-IV. Total 2(1%) mortalities were observed with MELD score 13-20, 4(2%) mortalities were observed with MELD score 21-30 and 10(5.3%) mortalities were observed with MELD score >30. The association of mortality was found highly significant with MELD Score (p=0.000).

Table No.4: Frequency and association of mortality according to cirrhosis (n=193)

Cirrhosis	Mortality		Total	P-value
	Yes (n=16)	No (n=177)		
Compensated (n=64)	7 (3.6%)	57 (29.5 %)	64 (33.1%)	***0.547
De-compensated (n=129)	9 (4.7%)	120 (62.2%)	129 (66.9%)	
Total	16 (8.3%)	177 (91.7%)	193 (100%)	

Table No.5: Frequency and association of mortality according to meld score (n=193)

Meld Score	Mortality		Total	P-value
	Yes (n=16)	No (n=177)		
13 – 20 (n=24)	2 (1%)	22 (11.6%)	24 (12.6%)	0.000
21 – 30 (n=132)	4 (2%)	129 (66.5%)	133 (68.5%)	
> 30 (n=36)	10 (5.3%)	26 (13.6%)	36 (19%)	
Total	16 (8.3%)	177 (91.7%)	193 (100%)	

DISCUSSION

The present study provides new insight to improve risk prediction in cirrhotic patients with acute variceal bleeding. Acute variceal hemorrhage (AVH) is a common presentation and devastating unpredictable consequence of high portal pressure in cirrhotic population and embarks significant fatality.[14] Specifically, we showed that MELD outperforms other models designed to predict prognosis in AVB, our study all concluded that patients with MELD score 30 or greater had 6 week mortality rate of 5.3%. Literature review also illustrated in hospital mortality or 6 week mortality significantly greater in patients with high MELD scores after AVB.[15] Kamath et al[16] claimed direct correlation relation between MELD score and the short term mortality rate in cirrhotic patients, and MELD score is regarded as an absolute index of residual reserve of functioning liver.

Prognostic evaluation of end stage liver disease patients is a global challenge for hepatologists. The Hepatologists from Mayo Clinic were the pioneers in proposing scoring system that is MELD score and they initially used to survey the outcomes in cirrhotic patients undergoing undertaking transjugular intrahepatic portosystemic shunt surgery (TIPSS). Later they generalized its validation to compensated, decompensated , and end stage liver disease to estimate and foresee mortality and morbidity.[18]

The MELD scoring system in another study demonstrated its preciseness, strength to prognosticate outcomes in cirrhotic patients , in other scenarios as well it proved its efficacy in foreseeing survival benefits Quarterly , half yearly then annually.[16] Furthermore MELD score and its list of benefits and its tremendous significance enlightened.[19] It was found in a largest study that, cirrhotic liver itself is potential risk factor for death , it has been established that liver disease approaching end stage liver disease along with its sequel such as hepatic encephalopathy, refractory ascites , variceal hemorrhage has subsequent rising number of deaths lately with an adjusted odds ratio of 5.65 (95% confidence interval, 3.72-8.41; *P*<.001) and 2.05 (95% confidence interval, 1.45- 2.84; *P*<.001), respectively.[3] In a study, estimated death percentage was around 20.5% in subjects with acute variceal hemorrhage , which is within known percentage in between of 20–30% during hospital stay, regardless they had hepatocellular carcinoma.[20]

In our study total 2(1%) mortalities were observed with MELD score 13-20, 4(2%) mortalities were observed with MELD score 21-30 and 10(5.3%) mortalities were observed with MELD score >30. It showed that higher the MELD score, high was the mortality rate. The association of mortality was highly significant with MELD Score (p=0.000), as compare to one previous study, highlighted that MELD scoring system accurate in estimation of risk of death optimized cut-off value of 12.9. These results were different from those of Amitrano et al.[21] who found the superiority in estimating short term survival. In their series, MELD score >15 was linked to poor survival outcomes.

The MELD-based model was not consistent and indeed over-predicted mortality for high MELD values in one of the validation sets. All of the patients in that cohort received antibiotics compared to 71% of the second validation cohort, while such information was not available for the derivation cohort.[22] The current study also didn't take into account blood transfusion requirements, which was found significant at cut-offs of 2 units.[23]

One of the series, patients with recurrent bleeding showed a convincing statistical values with difference ($p < 0.01$) among survivors and non-survivors. The occurrence of re-bleeding was significantly associated with mortality, a illustrated in of Bamba et al.[24] who reported a high significantly high MELD , ongoing active hemorrhage, increasing no of blood products transfused were indicative of early chances of mortality. These parameters also were consistent with other studies.[23]

In patients with cirrhosis and AVB, MELD scoring system simple to calculate when patient is hospitalized, it is precise validated in risk stratification and estimating survival, in hospital, short or long term. MELD could be more efficient than the other criteria for selecting high-risk patients who might benefit from more aggressive treatments. Our proposed MELD-based predictions might be useful in refining in evaluating the impact of new therapeutic strategies on patient prognosis, and in improving risk stratification in future clinical trials.

CONCLUSION

In our study we conclude that MELD score is a highly recommended tool may be used as a identification of high risk cirrhotic patients with acute variceal hemorrhage so they could be aggressively managed in high dependency units to prevent mortality.

Author's Contribution:

Concept & Design of Study:	Shahid Karim
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Data Analysis:	Perzez Ashraf & Mansoor ul Haq
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Final Approval of version:	Shahid Karim

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Inguinal Hernia Repair

A Comparison of Efficacy of Darn Repair and Bassini Repair for Inguinal Hernia in District Head Quarter Hospital, Bannu

Dost Mohammad[1], Ajmal Shah Bukhari[2], Muhammad Ashraf[3], Makil Shah[1] and Wasim Ahmad[4]

ABSTRACT

Objective: The objective of the study was to compare the results of Bassini vs. Darn inguinal hernia repair techniques in terms of postoperative pain, infection rate, hospital stay, resumption of duty and recurrence.
Study Design: A randomized controlled study
Place and Duration of Study: This study was conducted at the Department of Surgery, DHQ Teaching Hospital, Bannu from January 2015 to January 2016.
Materials and Methods: In our study, 60 patients having inguinal hernia were selected for the trial from both sexes. After thorough investigations, they were randomly assigned into two groups, 30 (group 1) of these were operated and repaired by the old Bassini repair and 30 (group 2) patients underwent darn repair. Patients were followed up at one week, six weeks, six months and one year and any complications were noted.
Results: Age range of patients was between 20-60 years. The patients were operated under general anesthesia. In Group One, 7 patients required intramuscular analgesics, their hospital stay was for 5 days, resumption of duties after 4-5 weeks & recurrence after 1Year was 0%. In group 2, 5 patients required intramuscular Analgesics, mean hospital stay was 4-5 days, resumption of duties after 4 weeks & recurrence after 1Year was 0%
Conclusion: Darn repair of inguinal hernia is easy, cheap, pain free and having negligible chances of recurrence.
Key Words: Inguinal hernia, Darn repair, Bassini

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INTRODUCTION

An Inguinal hernia is a resultant of some sort of tissue protrusion such as that of intestine etc. This protrusion takes place through a weak spot within abdomen. This buldge is more painful at the time of coughing, bending over or at the time of lifting some heavy objects. Inguinal hernia is not dangerous all the times yet produces life threatening problems some time. The painful or enlarging hernia can be made fix through surgery. So surgical procedure is a common technique used for its management..[1] Risk factors for the development of a hernia include: smoking, chronic obstructive pulmonary disease, obesity, pregnancy, peritoneal dialysis, collagen, vascular disease, and previous open appendectomy, among others. [1, 2]

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Inguinal hernia has two types, Direct and Indirect. The direct inguinal hernia enters through a weak point in the fascia of the abdominal wall, and its sac is noted to be medial to the inferior epigastric vessels. Direct inguinal hernias may occur in males or females, but males are ten times more likely to get a direct inguinal hernia[3]. An indirect inguinal hernia results from the failure of embryonic closure of the deep inguinal ring after the testicle has passed through it. Like other inguinal hernias, it protrudes through the superficial inguinal ring. It is the most common cause of groin hernia.[4]
In 1987, a classification was introduced by Gilbert for repairing hernia. Four basic techniques/procedures were introduced for.[5] Pure tissue repair, combined tissue and prosthetic repair, pure prosthetic repair and Darn repair were the classified techniques. Shouldice method displayed good results but british method of nylon darn has better successive rates in preservative deep groin anatomy.[6]
The darn repair of groin hernias is a pure tissue repair and is one of the classic open herniorrhaphies. It is simple, generally applicable to primary and recurrent hernia repairs, and has a remarkably low recurrence rate. In a 1991 survey of 240 consultant surgeons in England, the darn repair was the most popular technique; 35% of surgeons used it as their sole method of repair[7]. The Shouldice operation alone or combined with other techniques was used by only 20%. [8] Inguinal,

femoral and abdominal hernias resulted in 51,000 deaths in 2013 and 55,000 in 1990.[9]

MATERIALS AND METHODS

60 patients were included in our study that was conducted in surgery department of DHQ teaching hospital Bannu and in private practice setting. Study period comprised of one year i.e. from January 2015 to January 2016. We compared darn repair with bassini repair technique in subjects having inguinal hernia. Two groups were designed, one for darn and one for bassini repair. All 60 patients were divided randomly in these two groups. The complications before and after surgical procedure, hospitalization time duration and operative procedure time was documented. Follow up to these patients was given for 1Year after surgical procedure and the complications were noted. Patients were equally divided into 2 groups keeping in view their age, sex and weight etc. Antibiotics were administered to all the patients in both groups.

Exclusion criteria were diabetes, chronic obstructive airway disease, steroids intake etc. Patients experiencing associated inguino-scrotal diseases as hydrocele and spermatocele were excluded from the study. Patients with an age between 16 to 60 years were considered for the study.

Bassini repair was found to be the the classic one. Opening of the inguinal canal was done followed by the lifting of spermatic cord followed by suturing of the inferior edge of interior slanting and transversus muscles to the inguinal tendon with intervallic nurolon. In situation of tension on repair, tanner slide was incorporated. The cord was positioned on the recently shaped subsequent flooring. Continuous chromic catgut No 1 was used for suturing the external oblique. Scarp fascia was clogged by catgut followed by closing of the skin using skill no 2/0.

The darn repair was done with the help of a polyamide monofilament thread that was commercially available. The darn was completed in 2 layers, starting at the pubic tubercle, suturing was done in between the conjoint tendon and conjoint muscle to inguinal ligament. Half hatch was used to lock each stitch. The cord was positioned on the darn. General anesthesia was given to patients in both groups.

Base line investigations were carried out for all patients. Post operative and systemic complications were also recorded.

Patient's examination was done at an interval of a week, a month, 3 and six months and even for 1 year to observe wound infection, sinus formation, pain in scar, atrophy of the testis, sexual abnormality, hydrocele and reappearance of hernia.

RESULTS

The study comprised 60 patients. Age range was between 16-60 years. The patients were operated under general anesthesia. In group one, 7 patients' required intramuscular analgesics mean hospital stay was 5 days, resumption of duties after 4-5 weeks & reappearance after 1year was 0%. In group two, 5 patients required intramuscular analgesics, mean hospital stay was 4-5 days, resumption of duties after 4 weeks & recurrence after 1Year was 0%. Results are shown in the table 01.

Table No. 1; Age distribution

Patient's age	Patient's No	Percentage
16-20	08	13.34 %
20-30	25	41.67 %
30-40	05	8.34 %
50-60	12	20.0 %

Patient's mode of presentation is displayed in the following table 02.

Table No. 2; Mode of presentation

Mode of Presentation	No of Hernias	Percentage
Swelling inguinal/inguinoscrotal	60	100
Reducible Hernias	50	93.34
Irreducible Hernias	10	16.67
Painful Hernias	30	50.00
Pain free Hernias	30	50.00

Side of hernia either right or left is given in the table 03.

Table No. 3; Hernial side

Hernial side	No of patients	Percentage
Right	26	43.34
Left	28	46.66
Bilateral	06	10

Type of hernia and complete/incomplete hernia's detail is given in table 04

Table No. 4; Type of heria, complete/incomplete hernia

Hernia type	No of patients	percentage
Indirect inguinal hernias	45	75
Direct inguinal hernias	14	23.34
Pantaloon hernias	07	11.67
Complete Hernias (Inguinoscrotal)	26	43.34
Incomplete Hernias	34	56.67

Operative Time; Darn repair was associated with a mean operative time of 40 minutes whereas bassini repair was associated with 45 minutes. We observed that there was no momentous variance of operative time in both procedures.

Coming to routine work; One week was required to patients for starting their routine lighter work out in darn repair whereas in bassini repair, the return of the

patients to their routinely workout was a little prolonged coz of painful groin. Returning to hefty work done was almost 6 weeks in both group's patients.
Below are the complications:

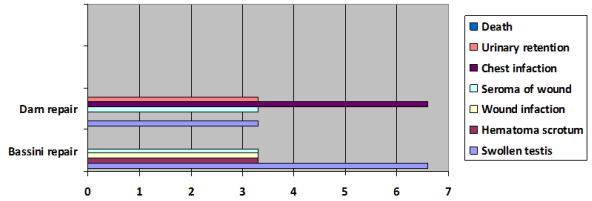

Figure No. 1: Post operative early complication percentage in both repairs (within one month)

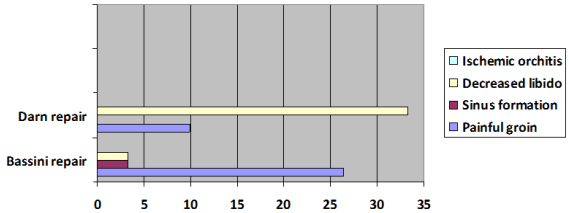

Figure No. 2: Post operative delayed complication percentage in both repairs (after one month)

No principal operative and anesthetic complications including cardiac arrest, injury of viscera, cord injury, injury of the nerve or copious hemorrhage was observed in both procedures.
More pain was observed by the patients in bassini repair so there was a prolonged use of analgesics as compare to darn repair.

DISCUSSION

A saying was stated many years back by Sir John Bruce "The final word on hernia will probably never be written" [10]. The same is true today.
The Incidence of inguinal hernia is 73% to 84 % [11]. Ninety five per cent of patients presenting to primary care are male [12]. The objective in inguinal hernia is to provide a tension free repair. The operation usually takes about 30-45 minutes to complete and you'll usually be able to go home on the same day. Some people stay in hospital overnight if they have other medical problems [13]. The practice in our unit is to be discharged on the following day. Out results displaced the incidence of inguinal hernia 10.29% of the total admissions. The frequency in other centers ranges from 10%-18% of the total surgical admissions [14, 15, 16].
The cause of post operative pain in bassini repair is seems to be due to tension on the suture between conjoint muscles and inguinal ligament which was significantly fewer in darn repair.
In the first 10 years of life, right inguinal hernia is more common due to late plunge of right testis. After second decade of life, hernia on left side is as common as on right side [17]. In 16% of cases, bilateral hernia is observed. [18]
The frequency of persistent hernia after principal reparation of a groin hernia vary in between 1% (in specialized centers) to 30% (in general surveys) [19]. During the pre-mesh era, it was predictable that primary inguinal hernia reparation had a 10%–30% reappearance ratio and that the degree was 35% for recurring hernia restoration [19]. The Lichtenstein repair is considered the "gold standard". Results of 3019 cases from 05 spots have confirmed a 0.5% reappearance. [20]

CONCLUSION

Darn repair and bassini repair can be compared for younger patients experiencing primary hernia. However, darn is more superior to bassini in terms of early ambulation, analgesic treatment and post-op painful conditions.

Author's Contribution:

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Drafting:	Dost Mohammad
Data Analysis:	Ajmal Shah Bukhari & Muhammad Ashraf
Revisiting Critically:	Makil Shah and Wasim Ahmad
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Estimation of Fetal Weight by Johnson's Formula, Ultrasound and after Delivery

Fetal Weight Measurement by using Johnson's Formula

Mahnoor Fatima Shah, Maria Maha Naeem and Saeed Ahmad

ABSTRACT

Objective: The ultimate objective of this study was to assess and validate the accuracy of fetal weight measurement by using Johnson's formula and its comparison with fetal weight estimated by using ultrasound.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Obstetrics and Gynecology Department, Nishtar Hospital Multan from May 2016 to April 2017.

Materials and Methods: In this trial total number of 369 pregnant mothers were included and systematic random sampling was used for selection of mothers. First mother was selected randomly. All the data entered and analyzed by computer software SPSS 23.2. The value of P=0.005 considered to be significant.

Results: A total number of 100% (n=369) women were included in this study. The mean age, parity, height and weight of the patients was 29.12±4.02 years, 2.86±1.5 parity, and 149.9±3.94 cm and 51.86±3.86 kg respectively. The study population comprised of 60.4% (n=223) illiterate and 39.6% (n=146) literate women. The age distribution showed 62.3% (n=230) women between 21-30 years 37.7% (n=139) between 31-40 years. There were 54.2% (n=200) women with height 140-150 cm and 45.8% (n=169) between 151-160 cm. It was observed that there were 36% (n=133) women had weight between 40-50 kg and 64% (n=236) had weight between 51-60 kg. There were 66.1% (n=244) women had parity between 1-3 and 33.9% (n=125) had parity between 4-6.

The Johnson's formula was seen to over-estimate the fetal weight. To check the equality of means weight, one way ANOVA was applied, it was seen that all the variables i.e. Johnson's formula, ultrasound and actual weight had the different means with significant p-value i.e. 0.000 having F-value 18.08.

Conclusion: We can conclude from this study that the fetal weight estimated by Johnson's formula is overestimated while ultrasound estimation of fetal weight always is near to actual weight after delivery.

Key Words: Fetal weight, Clinical method, Johnson's formula, and Ultrasound.

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INTRODUCTION

During pregnancy fetal weight estimation has great important aspect of intrapartum and prenatal care[1].When pregnancy is going to an end, this estimation of fetal weight starts to become more and more important for making decision of mode of delivery. As we know in cases when fetal weight is higher or lower could result many perinatal complication during puerperium and labor so, birth weight of infant is very important for survival of newborn[2]. During routine examination the estimation of fetal weight could have great impact on the decision about the labor induction timing and mode of delivery. The abnormal fetal growth might be directly associated with maternal and perinatal risk so; the accurate estimations are very essential.

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Many delivery traumas and prolonged labor including injury of brachial plexus, intrapartum asphyxia, shoulder dystocia and many other maternal risks are also involved such as postpartum hemorrhage, injuries of birth canal and pelvic floor and, are directly related to the macrosomic fetal delivery along with increase risk of caesarean or operative vaginal delivery[3]. On the other hand, the identification of restricted growth and lower weight fetus is very necessary to prevent or reduce the perinatal risks such as neonatal morbidity and intrauterine fetal death. The fetal weight estimation is very useful for controlling the interval and time of delivery as well[4].

The best perinatal management could be provided by obstetricianif they use such estimation method and technique which give an accurate fetal weight[5]. In these techniques ultra-sonographic and clinical method are most commonly used in the hospitals, in present time ultrasound technique is more preferable than clinical method, because it is easy to use and give accurate and precise estimation[6]. In this technique many parameters of fetus are used to predict the fetal weight. Though ultrasonic method need expensive equipments and is time consuming but it is considered accurate by investigators. Irrespective of its ease of use and precision, ultrasound estimation of fetal weight

could have variation in measurement up to 6-11%[7].In many under developing countries the facility of ultrasound is not accessible than in clinics, different clinical methods is used to estimate fetal weight by the help of Johnson's formula principle, in which the clinical maternal measurements are obtained that guide to estimate the fetal weight. In 1954,Toshach and Johnson R.W. gave the principle name as Johnson formula principle that was simplified over the time in 1957 and followed by many studies[8]. It is still being used to estimate the fetal weight during intrauterine life. One thing very important; it is very simple, quick and easy clinical method[9].

At birth weights less than 3kg, the fetal weight is overestimated by using Johnson's formula, but still there is almost correlation of results with the birth weight[10]. The difference is observed to be statistically insignificant (P=0.602).between actual birth weight and the fetal weight found by using Johnson's formula. The estimation of fetal weight using Johnson's formula is as accurate as USG. It can be used as an important tool for the estimation of fetal weight in the absence of USG.Johnson's formula is easy to use and there is no need of special skill. A good correlation is found by a South African study between birth weight (r=0.56) and intrapartum SFH, but authors concluded that the formula which was derived was not good enough to be clinically useful. The basic problem in the estimation of fetal weight is that at extremes of birth weight all the methods are less accurate. It is difficult to predict macrosomic (birth weight of 4000 grams and above)[11]. The previous studies show that Johnson's formula gives as accurate estimation of fetal weight as ultrasound. We want to find the accuracy of fetal weight estimation on local level by using Johnson's formula especially for those under developed areas where USG technique is deficient so that we have designed this study.

MATERIALS AND METHODS

With the ethical approval of ethics committee of the institute, this prospective cross sectional comparative study was conducted in Obstetrics and Gynecology Department, Nishtar Teaching Hospital Multan. This study took 12 months, May 2016 to April 2017 and informed consent was taken from all the patients under trial. Patients were also informed about their inclusion in study, its purpose and the procedure of the study. A total number of 100% (n=369) were include in this study, sample size was calculated by WHO calculator.The mothers with the singleton term pregnancy admitted either for normal vaginal delivery, induction labor or elective caesarean section were include in this study. Preterm labor, abnormal lie and presentation, ruptured membrane, polyhydramnios, un-booked women, multiple pregnancies, ante partum hemorrhage and eclampsia, oligohydramnios, anteriorly inserted placenta, poor visualization of fetal parts and uterine fibroids are included in exclusion criteria.

Systematic random sampling was used for selection of mothers. First mother was selected randomly and when eachmother met the inclusion criteria was automatically selected in the study.72 hours are the time interval between ultrasound and clinical estimation of fetal weight in-utero and babies delivery. All the information regarding the last menstrual cycle, age, parity and gestation age was collected from participant directly or from the files of the patient that was submitted before the delivery.

Fetal Weight estimation by clinical method: To estimate the fetal weight by abdominal palpation, there were four examiners: a consultant having 15 years professional experience (E4), a consultant having experience of 25 years (E5), a midwife with experience more than 10 years (E6) and a resident in 4th year of residency (E7). Leopold's maneuvers were used by all the examiners.

By using adult weighing scale with minimal clothing and recorded the maternal weight was measured. The flexible tape measure calibrated in centimeter was used in labor ward to carry out the in-utero clinical estimation of fetal weight. Before the symphysis fundal height measurement we must ask the woman to completely empty her bladder and after this, command her to lie in supine position and her legs should be extended properly. Before starting the measurement, the fundus of the patient was well defined by putting the ulnar border of the left hand against the upper border of uterus. The measurement of symphysis fundal height (SFH) was calculated from midpoint of upper border of maternal symphysis pubis to highest point of uterine fundus. After this non elastic was taken and was put on the upper border of the pubic symphysis and it was also stretched in very gentle way on the midline of the abdomen. In this way, the height of fundus was calculated in centimeters (cm).

The clinical fetal weight in(grams) was calculated by Johnson's formula principle

(Fetalweight (g) = Symphysis fundal height in (cm) –n) multiply by 155 and also the maternal obesity and the fetal head engagements are very important for further adjustments in that formula.

n= 13, if the presenting part is at +1.

n= 12, if the presenting part is at station 0.

n= 11, if the presenting part is at station -1.

If the patient has weight, near to 91 kg then 1 cm should be subtracted from the total fundal height calculated.

All the examiners involved in this study were not informed about the weight estimations made by other examiners. They were only aware of parity and gestation age before examination. Same weighing scale (seca), calibrated on regular basis were used to measure the weight of newborn baby within 30 min after

delivery. All the record of mother like parity, BMI, gestation age and maternal age similarly neonatal information like delivery date and birth weight were properly recorded.

Fetal weight estimation by ultrasound:

There the ultrasound weight estimation was done after the clinical method .Real time having the abdominal sector 3.5 MHZ transducer, that was ultrasound machine used for ultra-sonographic estimation of fetal weight. Hadlock formula was basically used as 85 ultrasound machine formula to estimate fetal weight. Similarly, this Hadlock formula was devised on the basis of femur length (FL), Fronto-occipital diameter and Biparietal diameter(BPD)are used to measure the head circumference and sagittal diameter, abdominal transverse(AT) are used to measure the abdominal circumference. All the estimations of fetal weight that were done by both ultrasound and clinical methods were recorded in the chart .A standard analogue Way master (England) scale corrected for zero error was employed to calculate the birth weight of baby immediately after delivery . It is very important that birth weight was measured within 30 minute after delivery. Three examiners are used to estimate fetal weight by ultrasound. The first examiner with more than 10 years experience was ultrasound specialist. The second and third examiners were trainee. First examiner (E1) trained E2 in ultrasound skills for about six months, on other hand E3 learned only basic skills of this technique in ten days but he got experience by observation before the study, but the trainee were in their second year. All the important data that was collected during the whole study period was entered properly in specific data from which was designed specifically for this study.

All the data was entered and analyzed by computer software SPSS version 23.2. Descriptive variable like age and onset of action were presented as mean and SD. To see the significance among groups statistical test ANOVA was applied and for continuous stats among groups were analyzed by applying Chi square test. P value 0.005 was considered as significant.

RESULTS

A total number of 100% (n=369) women were included in this study. The mean age, parity, height and weight of the patients was 29.12±4.02 years, 2.86±1.5 parity, and 149.9±3.94 cm and 51.86±3.86 kg respectively. The study population comprised of 60.4% (n=223) illiterate and 39.6% (n=146) literate women. The age distribution showed 62.3% (n=230) women between 21-30 years 37.7% (n=139) between 31-40 years. There were 54.2% (n=200) women with height 140-150 cm and 45.8% (n=169) between 151-160 cm. It was observed that there were 36% (n=133) women had weight between 40-50 kg and 64% (n=236) had weight between 51-60 kg. There were 66.1% (n=244) women had parity between 1-3 and 33.9% (n=125) had parity between 4-6. (Table 1).

The Johnson's formula was seen to over-estimate the fetal weight (Table 3).To check the equality of means weight, one way ANOVA was applied, it was seen that all the variables i.e. Johnson's formula, ultrasound and actual weight had the different means with significant p-value i.e. 0.000 having F-value 18.08 (Table 4).

Table No. 1: Demographic Variables (n=369)

Characteristics	Frequency	Percentage (%)
Education Status		
Literate	146	39.6
Illiterate	223	60.4
Total	**369**	**100.0**
Stratified Age		
21-30 years	230	62.3
31-40 years	139	37.7
Total	**369**	**100.0**
Stratified Weight		
40-50 kg	133	36.0
51-60 kg	236	64.0
Total	**369**	**100.0**
Stratified Height		
140-150 cm	200	54.2
151-160 cm	169	45.8
Total	**369**	**100.0**
Stratified Parity		
1-3 Parity	244	61.1
4-6 Parity	125	33.9
Total	**369**	**100.0**
Descriptive Statistics		
Variable	**Mean±S.D**	
Age	29.12±4.02 years	
Parity	2.86±1.50 parity	
Height	149.9±3.94 cm	
Weight	51.86±3.86 kg	

Table No.2: The Estimated Fetal Weight (EFW) calculated by different methods (n=369)

Methods	Mean±S.D	95% C.I
Johnson's formula	3399±143.79 gm	(3381.63, 3418.03)
USG	3323.9±193.2 gm	(3305.7, 3342.1)
Actual birth weight	3343.3±192.9 gm	(3325.1, 3361.5)

Table No. 3: The mean weight calculated by all the 3 methods are compared (n=369)

Methods	Mean±S.D	P-value by ANOVA test
Johnson's formula	3399 ±143.79 gm	0.000
Ultrasonography	3323.9±193.2 gm	
Actual birth weight	3343.3±192.9 gm	

Table No. 4: Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	1147602	573801	18.08	0.000
Error	1104	35045349	31744		
Total	**1106**	**36192951**			

DISCUSSION

It is very important to estimate the fetal weight accurately because in this way the decisions about the timing of labor induction and the mode of delivery can easily be made[12]. The results of current studies show that ultrasound is more accurate than Johnson's formula in estimation of fetal weight and it also shows that Johnson's formula overestimate the fetal weight estimation[13]. But many previous studies show that fetal estimation done by both ultrasound and Johnson's formula is always very poor when the fetus is macrosomic[14].

The results of previous studies are very different in many ways, as some studies reporting that estimations of fetal weight made by ultrasound were more accurate, other studies concluding that the estimation of fetal weight made by Johnson's formula was near to actual weight of fetus[15]. The different approaches have been used in the previous studies, difference in examiners' skill and time between estimating the weight and actual birth.

Therefore in this study we want to find the accuracy of fetal weight estimation by using by ultrasound and Johnson's formula and their comparison. In this study, total number of 100 % (n=369) pregnant mothers were under trial and the result was concluded that Johnson's formula overestimates fetal weight while the ultrasound measures accurately[16].

Similarly, a recent study was done by Rabei et al; in which total number of 100 %(n=100) pregnant mothers were included in it and 93 out of which 100 were multigravida and 7 primigravida patients. The weight range was 45kg-68kg and age group was 21-40 year. According to this study Johnson's formula overestimate the fetal weight at lower weights especially at the fetal weights with more than 3kg[17].

According to the study performed by Ratwani et al; the estimation of fetal weight done by ultra-sonographic was more accurate in the birth weight between >1501-<4000g as compare to clinical method. But both methods were not correct in the estimation of fetal weight in Macrosomic fetus and IUGR. When there is IUGR case these methods overestimated birth weight but the ultrasonic method has smaller mean error. It was more accurate statistically[18].

The result of the study done by Jan-Simon et al, indicates that the ultrasound is now more accurate in fetal weight estimation. It is notable that the recent studies show the high rate of accuracy of fetal weight estimated with the help of ultrasound as compare to studies performed in 1990s or even earlier. This is because ultrasound technology has improved a lot in recent years[19].Another study, 100 pregnant women were included and result shows that Johnson's formula underestimate the fetal weight while ultrasound overestimates the fetal weight[20]. On the other hand, study conducted by Ugwu et al, in May 2014, Johnson's formula and ultrasound fetal weights were estimated on 200 consecutive term pregnancies (37 completed weeks of gestation -41 weeks and 6 days)[21].Conclusion was that ultrasound method is generally a better predictor of fetal weight than Johnson's formula. The study included the total number of 100% (n=200) pregnant women and result reveals that Johnson's formula overestimates whiles Ultrasound is very near to the actual weight of fetus[21].

The above findings are very important for those areas where the modern technology of Ultrasonography is available in the hospital as well as the expert clinicians are present every time. In the end we can say that if ultrasound is accessible then it should be used to estimate the fetal weight because it is accurate in the fetal weight estimation as compare to Johnson's formula which is very simple in use an easily accessible but it overestimates the estimation of fetal weight.

CONCLUSION

We can conclude from this study that the fetal weight estimated by Johnson's formula is overestimated while ultrasound estimation of fetal weight always is near to actual weight after delivery.

Author's Contribution:

Concept & Design of Study:	Mahnoor Fatima Shah
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Data Analysis:	Saeed Ahmad
Revisiting Critically:	Saeed Ahmad
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Sofosbuvir and Ribavirin Therapy in Hep. C

Efficacy of Sofosbuvir and Ribavirin Therapy in Hepatitis C Virus Infection Among Treatment Naïve Cases of South Punjab

Waseem Sarwar Malghani, Anum Khakwani, Shehryar Kanju and Farooq Mohyuddin

ABSTRACT

Objective: This study was done to determine efficacy of Sofobuvir in treatment naïve cases of hepatitis C virus infection in Southern Punjab as there is no such study done in our general population.

Study Design: descriptive / observational study

Place and Duration of Study: This study was conducted at the Department of Gastroenterology, Nishtar Hospital, Multan from 1-7-2016 to 31-3-2017.

Materials and Methods: This study was using non-probability consecutive sampling technique. Patients (n=159) positive for HCV RNA PCR were taken in this study and their baseline investigations were done and treated with Sofosbuvir and ribavirin for 6 months and tested for sustained virological response (SVR) at 12 weeks of therapy. All data was entered in questionnaire and analysis was done using SPSS version 20.

Results: Of these 159 patients, 66 (41.5%) were male patients while 93 (58.5%) were female patients. Mean age of our study cases was 42.70 ± 12.69 years ranging from 19 years to 70 years. Mean age of male patients was 44.77 ± 12.50 years and mean age of the female patients was 41.23 ± 12.68 years which was statistically insignificant (p = 0.082). Eighty three (52.2%) were from rural areas while 76 (47.8%) from urban areas, 86 (54.1%) belonged to poor social background while 73 (45.9%) from middle income social status. Sustained virological response (SVR) at 12 weeks was noted to be in 158 (99.4%).

Conclusion: Sofosbuvirin combination with ribavirin was highly effective in achieving SVR at 12 weeks and it was safe and well tolerated in treatment naïve patients having hepatitis C virus infection. Hence, our study results support treatment of hepatitis C virus infection with Sofosbuvir without significant side effects.

Key Words: Sustained VIrological Response (SVR), HCV infection, efficacy, Sofosbuvir.

Citation of articles: Malghani WS, Khakwani A, Kanju S, Mohyuddin F. Efficacy of Sofosbuvir and Ribavirin Therapy in Hepatitis C Virus Infection Among Treatment Naïve Cases of South Punjab. Med Forum 2017;28(9):

INTRODUCTION

Hepatitis C virus infection remains one of the leading causes of the chronic liver diseases [1, 2] which lead to transplantation of liver and is responsible for increasing social, psychological, financial and health burden globally[3]. It leads to different complications including cirrhosis of liver, decompensated liver diseases and hepatocellular carcinoma (HCC)[4-8]. There are approximately 130-175 million patients who develop chronic infection all over the world with 0.5 million deaths related to HCV infection are being reported annually[9].

The prevalence of HCV infection varies with regards to geographic distribution all over the world, ranging from less than 0.5% in different European countries like Netherlands, Belgium, United kingdom, and Germany which are regarded as low prevalence countries to as high as 10 % in Egypt[10-12]. In Pakistan prevalence of hepatitis C virus infection in general population is 5.9 % which is much higher than our most of the neighboring countries where it is around 0.5 % in Iran, 0.4% in China and around 1 % in India[13]. It is major health problem of Pakistani population with its prevalence is still increasing. In recent years, its prevalence in many developed nations like USA and Scandinavian countries of the Europe has dropped significantly but still incidence is increasing in developing countries where there is low level of awareness regarding spread of the disease, poor screening facilities of the blood, improper sterilization of the surgical instruments and inadequate treatment facilities[14,15].

Six major HCV genotypes have been described owing to their sequence homology with further subtypes with their distribution is variable in different regions as HCV genotype 3a is more common in Pakistan[16].

Significant proportion of the HCV patients are reluctant to undergo interferon based treatment due to weekly subcutaneous injections which included some serious

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side effects such as fatigue, depression, influenza like symptoms and cytopenia[17].

With the introduction of highly effective direct acting antiviral (DAA), treatment of hepatitis C virus infection has been revolutionized as it provides interferon free treatment and infact opens a new window for elimination of HCV[18]. Similarly Sofosbuvir is also direct acting nucleotide polymerase inhibitor approved for treatment of HCV infection which is taken orally once daily. It causes RNA replication termination of the viral genome by an active nucleoside triphosphate, within host hepatocyte after phosphorylation, to compete natural nucleotides. The active triphosphate of nucleotide analogues such as Sofosbuvir targets highly conserved NS5B polymerase regions of the HCV[19].

This study was done to document efficacy of Sofosbuvir in our general population of Southern Punjab as there is no such study available to generate evidence of the therapy from this region.

MATERIALS AND METHODS

Our study included a total of 159 patients with chronic hepatitis C virus infection who were treatment naïve. All these patients were included from outpatient department of Department of Gastroenterology, Nishtar Hospital Multan after taking informed consent of participation. Prior permission was taken from Institutional Ethical Review Committee of the Nishtar Hospital Multan to carry out this research work. All the treatment naïve patients who were positive for HCV RNA PCR aged more than 18 years of either sex were included in this study. Patients having hepatocellular carcinoma, co-infection with hepatitis B, having pulmonary TB, brain tumors and those having contraindications to Sofosbuvir were excluded from our study.

Once registered, three ml of venous blood sample was taken and sent to the Nishtar Hospital Laboratory for Hb levels, TLC, platelet counts and serum albumin levels. Sofosbuvir was administered orally (400 mg once daily) plus ribavirin, also administered orally in 2 divided doses as per body weight. The treatment was continued for six months and patients were called for follow up at 12 weeks of therapy to determine sustained virological response (SVR) defined as HCV RNA PCR less than 25 IU/ml which is less than lower limit of quantification at 12 weeks. SPSS version 20 was employed to analyze the data and all the statistical tests were performed at 95 % confidence interval. Two sample t test was used to compare numerical data at the start of therapy with that of after treatment.

RESULTS

A total of 159 patients with hepatitis C virus infection were included in our study. Of these 159 patients, 66 (41.5%) were male patients while 93 (58.5%) were female patients. Mean age of our study cases was 42.70 ± 12.69 years ranging from 19 years to 70 years.

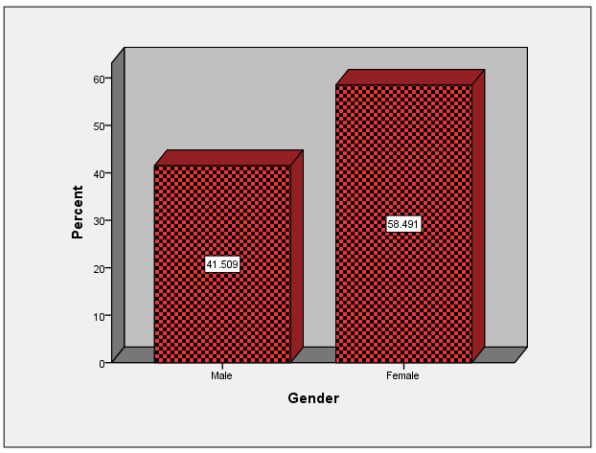

Figure No.1: Gender

Table No. 1. Comparison of clinical characteristics at baseline versus completion of therapy. (n=159)

Characteristics	Baseline values	Post therapy values	P value
	Mean (SD)	Mean (SD)	
Hemoglobin level (g/dL)	12.10± 1.74	12.20± 1.69	0.194
Total leukocyte count (per µl)	8628.95±2530.88	7587.82± 2315.86	<0.001
ALT (IU/L)	26.95 ± 15.75	24.65 ± 15.55	0.112
Platelet count (per µl)	243465.41±86103.12	257610.06± 96697.94	0.023
Serum albumin (g/dL)	4.31 ± 0.47	4.38 ± 0.50	0.119

Table No. 2. Comparison of post therapy clinical characteristics with regards to gender. (n=159)

Characteristics	Gender		Pvalue
	Male Mean (SD)	Female Mean (SD)	
Hemoglobin level (g/dL)	13.18±1.73	11.51±1.28	<0.001
Total leukocyte count (per µl)	7731.21± 2494.60	7486.06± 2188.34	0.512
ALT (IU/L)	27.42± 11.32	22.68±17.76	0.06
Platelet count (per µl)	238651.52 ±91002.71	27106452±98825.91	0.037
Serum albumin (g/dL)	4.48 ±0.55	4.31 ± 0.46	0.037

Mean age of male patients was 44.77 ± 12.50 years and mean age of the female patients was 41.23 ± 12.68 years which was statistically insignificant (p = 0.082). Eighty three (52.2%) were from rural areas while 76 (47.8%) from urban areas, 86 (54.1%) belonged to poor social background while 73 (45.9%) from middle income social status. Sustained virological response at 12 weeks was noted to be in 158 (99.4%).

DISCUSSION

Hepatitis C virus infection remains one of the leading causes of the chronic liver diseases which lead to transplantation of liver and is responsible for increasing social, psychological, financial and health burden globally. It leads to different complications including cirrhosis of liver, decompensated liver diseases and hepatocellular carcinoma (HCC). There are approximately 130-150 million patients who develop chronic infection all over the world with 0.5 million deaths related to HCV infection are being reported annually.

A total of 159 patients with hepatitis C virus infection were included in our study. Of these 159 patients, 66 (41.5%) were male patients while 93 (58.5%) were female patients. Our study results are in compliance with that of AKhter et al [20] from Rawalpindi who also reported female gender predominance with 56.4% which is close to our results. Sarwar et al [21] from Lahore reported almost equal distribution of male to female gender. However other studies have shown male gender preponderance in patients with HCV infection, Zaigham et al [22] from Karachi reported 56.4 % male patients with HCV infection undergoing same therapy which is different from our study results, similarly others have also reported high proportion of male patients.

Mean age of our study cases was 42.70 ± 12.69 years ranging from 19 years to 70 years. Mean age of male patients was 44.77 ± 12.50 years and mean age of the female patients was 41.23 ± 12.68 years which was statistically insignificant (p = 0.082). Akhter et al [20]from Rawalpindi also reported 46.84 ± 10.49 years mean age of the patients undergoing same therapy, which is close to our findings. Zaigham et al [22] from Karachi reported mean age was 46.6 years ranging from 20 – 72 years which is similar to our findings. Sarwar et al [21]from Lahore also reported 49.4 ± 12.1 years which is close to our study results.

Eighty three (52.2%) were from rural areas while 76 (47.8%) from urban areas, 86 (54.1%) belonged to poor social background while 73 (45.9%) from middle income social status.

Different local and international studies have documented efficacy of Sofosbuvir among relapsers, patients with and without interferon therapy, relating it with disease severity, patients with or without cirrhosis; however limited data regarding its efficacy in treatment naïve. Sustained virologicalresponse at 12 weeks was noted to be in 158 (99.4%). Akhter et al from Rawalpindi[20] also reported 96.5 % SVR which is comparable to our study results. Foster et al [23] also reported 88 % SVR at 12 weeks of therapy which is comparable to our study results. Zaigham et al [22] from Karachi reported 81.7 % SVR which is slightly lower than that being reported in our study. Sarwar et al [21]from Lahore also reported 83.18 % SVR at 12 weeks of therapy showing efficacy Sofosbuvir.

CONCLUSION

Sofosbuvir in combination with ribavirin was highly effective in achieving SVR at 12 weeks and it was safe and well tolerated in treatment naïve patients having hepatitis C virus infection. Hence, our study results support treatment of hepatitis C virus infection with Sofosbuvir without significant side effects.

Author's Contribution:

Concept & Design of Study:	Waseem Sarwar Malghani
Drafting:	Anum Khakwani
Data Analysis:	Shehryar Kanju
Revisiting Critically:	Farooq Mohyuddin
Final Approval of version:	Waseem Sarwar Malghani

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Management of Neonatal Jaundice

Comparison of Continuous with Intermittent Phototherapy Technique for the Management of Neonatal Jaundice

Muhammad Abubakre Khalid[1], Ammara Bakhtawar[2] and Noor Akbar[1]

ABSTRACT

Objective: To compare the two phototherapy techniques; continuous and intermittent for the treatment of neonatal jaundice.

Study Design: Randomized control trial study.

Place and Duration of Study: This study was conducted at the department of Paediatric Medicine, Nishtar hospital, Multan from October 2016 to March 2017.

Materials and Methods: This randomized control trial was conducted in the department of Paediatric Medicine, Nishtar hospital, Multan. Duration of study was six months from October 2016 to March 2017. Data was entered in statistical computer software SPSS v 23.1 and analyzed for desired variable analysis. Mean and SD was calculated for numerical data like age, Baseline bilirubin and follow up bilirubin, similarly frequency percentages were calculated categorical data like gender . Chi square test was applied for effect modification or association of outcome variables with effect modifiers. P value < 0.05 was considered as significant.

Results: A total number of 100% (n=300) babies were included in this study, both genders. Gender distribution showed there were 65.3% (n=196) males and 34.7% (n=104) females babies (p=0.849). The mean baseline bilirubin of the babies was 17.80±1.35mg/dl, while the mean follow-up bilirubin was 17.66±1.14 mg/dl. The mean difference between the baseline bilirubin and the follow-up bilirubin was 0.138±1.63 mg/dl i.e. no significant difference was found (p=0.298).

Conclusion: Both techniques of phototherapy intermittent and continuous phototherapies are equally effective in management of neonatal indirect bilirubin, but intermittent phototherapy have some additional benefits. So intermittent phototherapy technique can be used as routine treatment technique.

Key Words: Neonatal Jaundice, Phototherapy, Continuous, Intermittent.

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INTRODUCTION

Jaundice is a discoloration of sclera, skin and mucus membrane of cleft palate dye to access of bilirubin[1]. This condition requires special care and attention in new born babies, approximately incidence 60% in term infants and 80% in preterm[2]. In neonates hyper-bilirubinemia named as jaundice neonatorum and its incidence is 39.7/1000 live births. There are two types of bilirubinemia; conjugated and unconjugated[3].

Unconjugated bilirubin is the result of catabolism of heme protein and may be harmful if raised to significance level. It's treatment should be aimed to protect neurotoxicity due to unconjugated bilirubin[4].

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Neonatal jaundice commonly treated with phototherapy which converts the bilirubin into less toxic polar stereoisomer (unable to cross blood brain barrier and then eliminated through urine or bile. Efficacy of phototherapy depends upon the wavelength and intensity of light, surface area and distance from skin[5].

Procedure of phototherapy is rapid found to be significant at 42 and 15 E isomers for the period of 15 minutes. Method of its application are intermittent and continues[6,7]. In a previous study it was reported that both methods are equally effective mean serum bilirubin was 9.17+1.83 mg/dl at thirty six hours in continuous and 9.02+1.94 in intermittent group respectively. Mean decrease after phototherapy was 7.43+0.07 and 7.31+0.48 mg/dl in continuous and intermittent groups respectively[5]. In many method is easy, convenient better for neonatal feeding and also easy for hospital staff[8].

Phototherapy technique may be used as prophylaxis or definite treatment in management of jaundice[9]. Other than continuous and intermittent methods two more mechanisms are available in market; photo-isomerization and photooxidation in cases of hiperbilirubin[10]. When these mechanisms compared at was noted that photo-catabolism is more effective and

oxidation mechanism have very minor role for the treatment of indirect/ unconjugated bilirubin in cases of infants[11].

There was no definite study has been conducted in Pakistan and this study will provide the base line data for our setup.

MATERIALS AND METHODS

This randomized control trial was conducted in the department of pediatric medicine Nishtar hospital, Multan. Duration of study was six months from October 2016 to March 2017. Study was started after ethical approval from ethical board of institution and informed consent was obtained from patients or their attendants after complete information. Non probability consecutive sampling technique was used and sample size of 300 patients was calculated from online statistical calculator by using following statistics; CI 95%, Power of study 80% and P1 mean change in bilirubin at 36 weeks in continuous group 12.86 ± 1.532 and P2 mean change in bilirubin at 36 weeks in intermittent group 12.84 ± 1.76. We divide 300 patients into two equal groups (group A and group B) 150 patients in each group. Name of all patients were written on paper slips and each slip was coded was coded with numbers (1-300). A blind person was asked to choose a slip from the box. Firs slips (even or odd) was included in group A and remaining all patients were divided on the basis of that first slip (even or odd). In group A patients treated with continuous phototherapy for twenty minutes off and two hours on and in B patients were treated with intermittent phototherapy one hour on and 30 minutes off. Phototherapy was done by an experienced consultant having experience more than 5 years and was blind from the study procedure.

Serum indirect/unconjugated bilirubin more than 12 mg/dl in neonates on laboratory investigation was considered as neonatal jaundice. On or off application of phototherapy was labeled as intermittent method of phototherapy. Full term babies of age 24 hours 10 days, bilirubin unconjugated 12-20 mg/dl, Apgar score more than 6 at five minutes were included. Patients with ventilator support, peritoneal dialysis and any congenital abnormality were excluded. Phototherapy in both groups was given with same machine with same light distance.

Blood sample for serum bilirubin were drawn and sent to laboratory for investigation of baseline indirect bilirubin before start of procedure phototherapy and after 36 hours for follow ups. All information was recorded on predesigned performa. Time of on and off phototherapy was noted (one hour on after every 30 min off).

Data was entered in statistical computer software SPSS v 23.1 and analyzed for desired variable analysis. Mean and SD was calculated for numerical data like age, Baseline bilirubin and follow up bilirubin, similarly frequency percentages were calculated categorical data like gender . Chi square test was applied for effect modification or association of outcome variables with effect modifiers. P value < 0.05 was considered as significant.

RESULTS

A total number of 100% (n=300) babies were included in this study, both genders. Gender distribution showed there were 65.3% (n=196) males and 34.7% (n=104) females babies (p=0.849). The mean age of the babies was 3.98±1.30 days (p=0.729). The mean baseline bilirubin of the babies was 17.79±1.22mg/dl, while the mean follow-up bilirubin was 17.72±1.13 mg/dl. The mean difference between the baseline bilirubin and the follow-up bilirubin was 0.065±1.73 mg/dl i.e. no significant difference was found (p=0.517). (Table. 1).

The group A 100% (n=150), treated with continuous phototherapy, the mean age of the babies was 4.03±1.25 days (p=0.334). There were 62.7% (n=94) males and 37.3% (n=56) females (p=0.849). The mean baseline bilirubin of the babies was 17.78±1.22 mg/dl, while the mean follow-up bilirubin was 17.79±1.13 mg/dl. The mean difference between the baseline bilirubin and the follow-up bilirubin was -0.00867±1.83 mg/dl i.e. there was no significant difference (p=0.954). (Table. 2).

Table No. 1: Demographics (n=300)

Characte-ristics	Frequency	Percentage (%)	Test of Sig.
Gender			t=-0.19 p=0.849
Male	196	65.3	
Female	104	34.7	
Total	300	100.0	
Variable	Mean±S.D		
Age	3.98±1.30 days		t=-0.346 p=0.729

Table No. 2: Group wise distribution of gender, baseline Bilirubin and Follow up Bilirubin

Variable	Group A (n=150)	Test of Sig.	Group B (n=150)	Test of Sig.
Gender	M=62.7% F=37.3%	t=-0.190 p=0.849	M=68%, F=32%	t=-0.190 p=0.849
Age	4.03±1.25 days	t=0.967 p=0.334	3.94±1.35 days	t=0.967 p=0.334
Baseline Bilirubin	17.78± 1.22mg/dl	t=-0.058 p=0.954	17.80±1.35mg/dl	t=1.044 p=0.298
Follow-up Bilirubin	17.79±1.13 mg/dl		17.66±1.14 mg/dl	

The group B 100% (n=150), treated with intermittent phototherapy, the mean age of the babies was 3.94±1.35 days (p=0.334). There were 68% (n=102) males and 32% (n=48) females (p=0.849). The mean

baseline bilirubin of the babies was 17.80±1.35mg/dl, while the mean follow-up bilirubin was 17.66±1.14 mg/dl. The mean difference between the baseline bilirubin and the follow-up bilirubin was 0.138±1.63 mg/dl i.e. no significant difference was found (p=0.298). (Table. 2).

DISCUSSION

This study was conducted on comparison of two types of phototherapy; a technique to managed neonatal jaundice. It has two types continuous and intermittent; in continuous method phototherapy was done in continuous manner and in intermitant method and on and off procedure was done. By this technique and strong bonding among mother and child has been made without any expenses[12]. In our study there was no significance difference in both groups with respect to gender, similarly decrease in mean bilirubin was also not significant. Niknafs et al[5] also reported same results in his study when gender and efficacy (decrease in mean value of serum bilirubin) of phototherapy in both groups.

In our study we applied phototherapy for twenty minutes off and two hours on in A group and 1 hour on and 30 minutes off in B group, in a study Khaliq A[13] used same timing in both groups but Niknafs et al[5] used for much shorter time period. In our study mean baseline serum bilirubin was 17.78±1.22mg/dl in group A and 17.80±1.35mg/dl in group B and after phototherapy it was 17.79±1.13 mg/dl and 17.66±1.14 mg/dl in group A and B respectively. While, in their study it was observed 16.60mg/dl±1.67 for continuous and 16.33mg/dl±1.46 for intermittent group at baseline and 9.17mg/dl±1.83 for continuous and 9.02±1.94 for intermittent group after thirty six hours. Our results show much lesser decrease in serum bilirubin as compared to their study.

In a study Sachdeva M[14] reported that intermitant phototherapy for twelve hours on and twelve hours of is more effective as compared to continuous technique when used in term neonates with hyperbilirubinemia. Results of his study were also comparable with our results. Kareem MA[15] conducted a similar study in 2011 and reported that intermitant phototherapy for twelve hours on and twelve hours of is more effective as compared to continuous technique if cause if non hemolytic.

In a study Lau and Fung et al reported that there was a significant difference in both techniques when intermitant was used given in schedule of one in four hours[16]. In other studies, Maurer and Vogl reported that intermittent phototherapy did not cause longer phototherapy duration and its repetition[17,18].

In few studies it was also reported that without controlling serum bilirubin with intermitant technique continuous technique is not needful. They found that during feeding period phototherapy should be done and baby must be in hands of mother. During the sessions of phototherapy a strong bonding has been made between baby and mother which is helpful in later sessions and health related problems[19].

CONCLUSION

Both techniques of phototherapy intermittent and continuous phototherapies are equally effective in management of neonatal indirect bilirubin, but intermitant phototherapy have some additional benefits. So intermitant phototherapy technique can be used as routine treatment technique.

Author's Contribution:

Concept & Design of Study:	Muhammad Abubakre Khalid
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Pattern of Surgical Procedures in Emergency Department of Allama Iqbal Memorial Teaching Hospital Sialkot

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ABSTRACT

Objective: To study the pattern of surgical procedures in emergency department of Allama Iqbal Memorial Teaching Hospital, Sialkot.

Study Design: Descriptive / observational study

Place and Duration of Study: This study was conducted at the Allama Iqbal Memorial Teaching Hospital, Sialkot from July 2015 to July 2016.

Materials and Methods: Nine Hundred and ten surgical procedures were included in this retrospective study. All the surgical procedures were included, while cases that were shifted to other departments and those that left against medical advice were excluded. Age, sex, area, type of surgical procedures, was recorded on the designed Performa. Permission of Ethical Committee of the institute was taken. Data was analyzed on SSPS version 10.

Results: In this study the incidence of surgical procedure in emergency department was maximum (42.41%) 386 cases at the age group 15-25 years and minimum (0.21%) 2 cases at the age group 90 & above as shown in table no.01. There were (56.70%) 516 cases from male and (43.29%) 394 cases from female as shown in table no.02. The surgical procedures of the patients from urban population was (65%) 588 cases and (35%) 322 cases from rural populations as shown in table no.03. The incidence of open appendectomy was at the top (11.20%) 102 cases in male and (15.27%) 139 cases from female and there was lowest incidence (0.1%) 1 in case of chest intubation, tendon repair, vascular repair, and exploratory laparotomy for gun shot in female patients as shown in table no.04. There were (10%) 91 cases from male and (9.45%) 86 cases from female of emergency excision of soft issue lesions, (10.10%) 92 cases from male and (8.13%) 74 cases from female in case of incision and drainage procedure. The exploratory laparotomy for typhoid perforation, duodenal ulcer, stab wound and blunt abdominal trauma was the second most common procedure carried out at the surgical emergency department of Allama Iqbal Memorial Teaching Hospital, Sialkot as shown in table no.04.

Conclusion: The results of this study are helpful in planning better emergency service delivery to patients and in focusing and improving the training of surgical residents. Government at various levels should provide modern diagnostic tools for the accurate preoperative diagnosis of surgical emergencies in tertiary care public hospitals.

Key Words: Surgical Procedures, Emergency, Retrospective.

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INTRODUCTION

An expected population in Pakistan has of 173.5 million (July 1, 2010), which is developing at a rate of 2.05% for every annum and has a country versus urban dissemination of 64% versus 36%.[1] Total enrolled medical professionals (fundamental and experts) in Pakistan till May 31, 2010 are 142792 (119083+ 23709), making specialist to-populace proportion of 1:12150.[2,3].

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General surgery is a noteworthy claim to fame managing high volumes of crisis affirmations, their management.[1] In showing doctor's facilities crisis surgical care is of high need in tertiary care setup and it is a vital part of preparing surgical occupants. There is a consistent increment in the quantity of crisis admissions[2] which incorporate surgical emergencies.[3] Many reviews have watched the example of crisis surgical admissions[4,5] and crisis surgeries.[6] However, there is little information accessible on range of the crisis general surgical calls worldwide and writing look demonstrated that no review has been led or reported in regards to the available to come back to work-stack in Pakistan. Actually, there is a more noteworthy workload of the crisis surgical group than uncovered by examining surgical affirmations and operations alone.

Bureau of surgery Allama Iqbal Memorial Teaching Hospital, Sialkot involves two general surgery units other than the strengths of neurosurgery and

orthopedics; the offices of pediatric surgery, urology and plastic surgery are additionally present. The two surgical units have 50 beds each, with equivalent circulation of outpatient, operation and crisis days. As Allama Iqbal Memorial Teaching Hospital, Sialkot is an open setup it additionally pulls in patients from other low-wage regions of Sialkot city and country region. Lion's share of patients has a place with low financial gathering.

The example of surgical crises changes with the geological regions, in various races, age gatherings, social classes and in individuals with various occupations. Not very many neighborhood studies are accessible on the study of disease transmission, example of sicknesses and frequency of a specific ailment predominant in the city, territory and the nation. This review was done to discover the example of surgical crises overseen in crisis operation theater.

MATERIALS AND METHODS

Nine Hundred and ten surgical procedures were included in this retrospective study. All the surgical procedures were included, while cases that were shifted to other departments and those that left against medical advice were excluded. Age, sex, area, type of surgical procedures, was recorded on the designed Performa. Permission of Ethical Committee of the institute was taken. Data was analyzed on SSPS version 10.

RESULTS

Table No. 1: Age Distribution in Surgical Emergencies

Sr.No	Age (Years)	Cases	Percentage %
1	15-25	386	42.41
2	26-36	148	16.26
3	37-47	151	16.59
4	48-58	123	13.53
5	59- 69	81	8.91
6	79-89	19	2.09
7	90 & above	2	0.21
	Total	910	100

Table No. 2: Gender Distributions in Surgical Emergencies

Sr No	Gender	Cases	Percentage %
1	Male	516	56.70
2	Female	394	43.29
	Total	910	100.0

Table No. 3: Area Distributions in Surgical Emergencies

Sr No.	Area	Cases	Percentage %
1	Urban	588	65.00
2	Rural	322	35.00
	Total	910	100.0

In this study the incidence of surgical emergencies was maximum (42.41%) 386 cases at the age group 15-25 years and minimum (0.21%) 2 cases at the age group 90 & above as shown in table no.01. There were (56.70%) 516 cases from male and (43.29%) 394 cases from female as shown in table no.02. The surgical emergencies were from urban population (65%) 588 cases and (35%) 322 cases from rural populations as shown in table no.03.

Table No.4: Type of Surgical Emergencies

Sr No	Type of Surgical Emergencies	Male (%)	Female (%)
1	Open Appendectomy (positive)	102 (11.20%)	139 (15.27%)
2	Exploratory Lapratomy for Typhoid Perforation	10 (1.1%)	5 (0.54%)
3	Excision of Soft Tissue Lesions	91 (10%)	86(9.45%)
4	Diabetic foot Debridement	36(3.95%)	25(2.74%)
5	Chest intubation	32(3.51%)	01(0.10%)
6	Tendon Repair	18(1.97%)	01(0.10%)
7	Hemostasis+ vascular repair	06(0.65%)	01(0.10%)
8	Simple Sutures	02(0.22%)	01(0.10%)
9	Exploratory Laparotomy	02(0.22%)	04(0.43%)
10	Foreign body	22(2.41%)	07(0.76%)
11	Below Knee Amputation	04(0.43%)	03(0.32%)
12	Exploratory Laparotomy for Duodenal Ulcer	12(1.31%)	06(0.65%)
13	Exploratory Lapraotomy for Gunshot	10(1.1%)	01(0.10%)
14	Exploratory Laprotomy for Stab	05(0.54%)	02(0.22%)
15	Exploratory Laprotomy for Blunt Abdominal Trauma	04(0.43%)	02(0.22%)
16	Herniorraphy	11(1.20%)	03(0.32%)
17	Excision of Carbuncle	03(0.32%)	07(0.76%)
18	Incision and Drainage	92(10.10%)	74(8.13%)
19	Debridement	51(5.60%)	29(3.18%
	Total	**513(56.37%)**	**397(43.62)**

The incidence of open appendectomy was at the top (11.20%) 102 cases in male and (15.27%) 139 cases and there was lowest incidence (0.1%) 1 in case of chest intubation, tendon repair, vascular repair, and

exploratory laparotomy for gun shot in female patients as shown in table no.04. There were (10%) 91 cases from male and (9.45%) 86 cases from female of emergency excision of soft issue lesions, (10.10%) 92 cases from male and (8.13%) 74 cases from female in case of incision and drainage emergency. The exploratory laparotomy for typhoid perforation, duodenal ulcer, stab wound and blunt abdominal trauma was the second most common emergencies received at the surgical emergency department of Allama Iqbal Memorial Teaching Hospital, Sialkot as shown in table no.04.

DISCUSSION

Results of this study showed that the (50%) cases presented in emergency department were of general surgery. The appendicitis is the most frequent abdominal emergency world wide.[7] In our study also, the most frequent specific diagnosis made is appendicitis.

The most frequent operation performed was appendicectomy 102 (11.20%) patients in male and 139 (15.27%) in female. The same trend was also seen in other cities[6,8] The commonest operations were appendicectomy (27%), incision drainage (19%), debridement (09%), laparotomy (10%), herniorraphy (2%), below knee amputation (1%), tendon repair (2%) vascular repair (1%), excision of soft tissue lesions (19.45%), diabetic foot debridement (6%) foreign body (3%) and chest intubation was (4%).

The captain of the trauma team is general surgeon. The Advanced Trauma and Life Support (ATLS) guidelines and recommendations of the Royal College of Surgeons of England state that a trauma team should include a general surgeon.[10,11] However, only a minority of all trauma patients require assessment for abdominal and vascular injuries by a general surgeon, with even fewer requiring surgical intervention.[12] A study[13] showed that general surgeons assessed 30.1% trauma call patients; only 12.3% patients were admitted under the general surgeons. 9.6% patients required operative surgical intervention, while 2.7% patients were admitted for observations. In another study,[12] trauma comprised approximately 2% of the overall general surgical emergency workload in which general surgeons were involved in the assessment of 25% of severely injured patients, out of which less than 10% patients needed surgery.

A study[14] performed to find out the 'Unseen' on-call workload of a general surgical team showed that up to 5.5 hours per day on-call was spent assessing referrals. These studies have reinforced our observation that there is a greater workload than revealed by audit of just surgical admissions and operations alone.

Another study[16] reported on-call night activity of surgical resident and concluded that it consists primarily of activities of daily living, patient evaluation, and communication.

It was also reported[17] that when heart rate is used as an indicator of combined physiologic and psychologic stress, surgical residents achieve stress levels of tachycardia "on call." Surgical residents also exhibit an increase in circulating WBC count "on call."

CONCLUSION

The major workload of an on-call surgical emergency team deals with the acute conditions of abdomen with appendicectomy being the most frequent operation performed. The results of this study are helpful in planning better emergency service delivery to patients and in focusing and improving the training of surgical residents. Government at various levels should provide modern diagnostic tools for the accurate preoperative diagnosis of surgical emergencies in tertiary care public hospitals. These measures will help to improve the management and outcome of surgical emergencies.

Author's Contribution:

Concept & Design of Study:	Nimra Ikram
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Data Analysis:	Imran Idris
Revisiting Critically:	Kamran Hamid
Final Approval of version:	Nimra Ikram

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Prevalence, Hematological Picture and Blood Glucose in Thyrotoxicosis at Sialkot

Mansoor Hassan[1], Saleh Muhammad[1], M. Awais[3], and Muhammad Sabir[2]

ABSTRACT

Objective: To Study the Prevalence, Hematological Picture and Blood Glucose in Thyrotoxicosis at Sialkot.
Study Design: Descriptive / observational Study.
Place and Duration of Study: This study was conducted at the Idris Teaching Hospital Sialkot and Allama Iqbal Memorial Hospital Sialkot from January 2014 to April 2017.
Materials and Methods: This study included 100 newly diagnosed patients of thyrotoxicosis registered at Idris Teaching Hospital Sialkot and Allama Iqbal Memorial Hospital Sialkot. Subjects were examined for their signs and symptoms as well as their clinical and family history of thyroid disorders. Their blood samples were drawn and preserved at -80C. They were clinically categorized into hyperthyroidism by thyroid function test utilizing RIA. Patients having clinically visible enlarged swelling in front of neck were subjected to 99Tc Pertechnetate thyroid imaging. The Hematological Picture and Blood Glucose were also recorded. Our study included subjects of all ages and both genders. An informed consent was obtained from each individual participant and all the subjects were interviewed for collecting demographic and disease data on designed Performa. Initial screening included complete thyroid profile to identify thyrotoxicosis. Permission of ethical committee was also taken.
Results: In our study the prevalence of the patients of Thyrotoxicosis was higher (31 %) n=31 at the age of 41-50 years as compared to other age groups as shown in table no. 01 . Female patients were (90%) n=90 and (10%) n=10 male as shown in table no .01. The patients of Thyrotoxicosis from rural area were (68%) n=68 & (32%) n=32 from urban population as shown in table no. 02. Fasting blood glucose was 108.62±31.47 mg/dl in male and 142.5±64.68 mg/dl in female. Random blood glucose was 200±25.27 mg/dl in male and 250±54.24 mg/dl in female. Glycosuria was present in 1 (1%) male and 4 (4%) in female. Proteinuria was absent in both genders as shown in table no. 03. Hemoglobin was 7-10 (gm/dl) in (4%) 4 male and 45 (45%) in female, 11-12gm/dl in (4%)4 male and (22%)22 in female, more than 12gm/dl (2%) 2 in male and (23%) 23 female. TLC was less than 4000cmm 1 (1%) in male and 1 (1%) in female, 4000-11000cmm (7%) 7 male and (85%) 85 female, more than 11000cmm was in (2%) 2 male and 4 (4%) in female. ESR was 15-30mm after 1st hour (6%) 6 male and (66%) 66 in female, more than 30mm after 1st hour was (4%) 4 in male and (24%) 24 in female as shown in table no. 04.
Conclusion: Public awareness about the dietary iodine consumption is mandatory in our region, so as to overcome the increased prevalence of the thyroidal dysfunction in our population. Furthermore, hyperthyroid state is more common in our population.
Key Words: Thyrotoxicosis, Hematological Picture and Blood Glucose.

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INTRODUCTION

Thyroid hormones influence glucose digestion by means of a few instruments. In Hyperthyroidism, thyroid hormones has for quite some time been perceived to advance hyperglycemia[1].

Amid hyperthyroidism, the half-existence of insulin is diminished undoubtedly auxiliary to an expanded rate of corruption and an upgraded arrival of organically dormant insulin forerunners[2,3].

In untreated Graves' illness, expanded proinsulin levels in light of a dinner were seen in a review[4]. Furthermore, untreated hyperthyroidism was related with a decreased C-peptide to proinsulin proportion proposing a basic deformity in proinsulin handling[5]. Another instrument clarifying the connection amongst hyperthyroidism and hyperglycemia is the expansion in glucose gut retention intervened by the abundance thyroid hormones[6,7].

Endogenous generation of glucose is likewise improved in hyperthyroidism by means of a few components. Thyroid hormones create an expansion in the hepatocyte plasma film convergences of GLUT2 which is the principle glucose transporter in the liver, and thus, the expanded levels of GLUT-2 add to the expanded hepatic glucose yield and unusual glucose digestion[8,9]. Also, the non-oxidative glucose transfer in

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hyperthyroidism is upgraded bringing about an overproduction of lactate that enters the Cori cycle and advances promote hepatic gluconeogenesis. The expansion in GH, glucagon and catecholamine levels related with hyperthyroidism additionally adds to the hindered glucose resilience[10–11].

The relationship of thyroid issue and variations from the norm in hematological parameters is notable.

It is likewise seen that the pervasiveness of both hyperthyroidism is higher in females than guys[12].

Subsequently, enhanced open mindfulness about thyroidal sicknesses is one of the critical elements to adapt to this issue. This forthcoming review goes for deciding blood glucose and hematological changes exhibit in our populace.

MATERIALS AND METHODS

This prospective study included 100 newly diagnosed patients of thyrotoxicosis registered at Idris Teaching Hospital Sialkot and Allama Iqbal Memorial Hospital Sialkot from January 2014 to April 2017. Subjects were examined for their signs and symptoms as well as their clinical and family history of thyroid disorders. Their blood samples were drawn and preserved at -80C. They were clinically categorized into hyperthyroidism by thyroid function test utilizing RIA. Patients having clinically visible enlarged swelling in front of neck were subjected to 99Tc Pertechnetate thyroid imaging. The Hematological Picture and Blood Glucose were also recorded. Our study included subjects of all ages and both genders. An informed consent was obtained from each individual participant and all the subjects were interviewed for collecting demographic and disease data on designed Performa. Initial screening included complete thyroid profile to identify thyrotoxicosis. Permission of ethical committee was also taken. The data was analyzed for results.

Inclusion Criteria: All the patients of hyperthyroidism were included in this study.

Exclusion Criteria: The patients of hypothyroidism were excluded from the study.

RESULTS

Table No. 1: Age & Sex Distribution in Patients of Thyrotoxicosis

Sr. No	Age (Years)	No of Patients(%)	Male (%)	Female (%)
1	10-20	10	1 (1%)	9 (9%)
2	21-30	14	3 (3%)	11 (11%)
3	31-40	23	1 (1%)	22 (22%)
4	41-50	31	2 (2%)	29 (29%)
5	51-60	10	1 (1%)	9 (9%)
6	61-70	12	2 (2%)	10 (10%)
	Total	100(100%)	10 (10%)	90 (90%)

Table No. 2: Area Distributions in Patients of Thyrotoxicosis

Sr. No	Area	No of Patients	Male %	Female %
1	Urban	32 (32%)	3 (3%)	29 (29%)
2	Rural	68 (68%)	7 (7%)	61 (61%)
	Total	100 (100%)	10 (10%)	90 (90%)

Table No. 3: Blood glucose in the patients of Thyrotoxicosis

Sr. No	Blood Glucose (mg/dl)	Male Mean± SD	Female Mean±SD	Total Mean±SD
1	Fasting Blood Glucose	108.62 ±31.47	142.5±64.68	112.02±37.08
2	Random Blood Glucose	200±25.27	250±54.24	225±36.08
3	Glycosuria	1 (1%)	4 (4%)	5 (5%)

Table No. 4: Hematological Picture in the patients of Thyrotoxicosis

Sr. No	Hb (gm/dl)	Male (%)	Female (%)	Total (%)
1	7-10	4 (4%)	45 (45%)	49 (49%)
2	11-12	4 (4%)	22 (22%)	26 (26%)
3	>12	2 (2%)	23 (23%)	25 (25%)
Sr. No	**TLC/cmm**	**Male (%)**	**Female (%)**	**Total (%)**
1	<4000	1 (1%)	1 (1%)	2 (2%)
2	4000-11000	7 (7%)	85 (85%)	92 (92%)
3	>11000	2 (2%)	4 (4%)	6 (6%)
Sr. No	**ESR (mm after 1st hour)**	**Male (%)**	**Female (%)**	**Total (%)**
1	15-30	6 (6%)	66 (66%)	72 (72%)
2	>30	4 (4%)	24 (24%)	28 (28%)

In our study the prevalence of the patients of Thyrotoxicosis was higher (31 %) n=31 at the age of 41-50 years as compared to other age groups as shown in table no. 01 . Female patients were (90%) n=90 and (10%) n=10 male as shown in table no .01. The patients of Thyrotoxicosis from rural area were (68%) n=68 & (32%) n=32 from urban population as shown in table no. 02. Fasting blood glucose was 108.62±31.47 mg/dl in male and 142.5±64.68 mg/dl in female. Random blood glucose was 200±25.27 mg/dl in male and 250±54.24 mg/dl in female. Glycosuria was present in 1

(1%) male and 4 (4%) in female. Proteinuria was absent in both genders as shown in table no. 03. Hemoglobin was 7-10 (gm/dl) in (4%) 4 male and 45 (45%) in female, 11-12gm/dl in (4%)4 male and (22%)22 in female, more than 12gm/dl (2%) 2 in male and (23%) 23 female. TLC was less than 4000cmm 1 (1%) in male and 1 (1%) in female, 4000-11000cmm (7%) 7 male and (85%) 85 female, more than 11000cmm was in (2%) 2 male and 4 (4%) in female. ESR was 15-30mm after 1st hour (6%) 6 male and (66%) 66 in female, more than 30mm after 1st hour was (4%)4 in male and (24%)24 in female as shown in table no. 04.

DISCUSSION

It was watched an expanded recurrence of thyroid brokenness with propelling age and a higher pervasiveness of thyroid infection in ladies contrasted with men and in diabetic subjects contrasted with nondiabetic.

A few reports archived a higher than ordinary predominance of thyroid brokenness in the diabetic populace. Especially, in a study exhibited a general commonness of 13.4% of thyroid sicknesses in diabetics with the most astounding predominance in sort 1 female diabetics (31.4%) and least pervasiveness in sort 2 male diabetics (6.9%)[13]. As of late, a pervasiveness of 12.3% was accounted for among Greek diabetic patients[14] and 16% of Saudi patients with sort 2 diabetes were found to have thyroid brokenness[15]. A review revealed that thyroid brokenness was available in 12.5% of sort 2 diabetic patients[16]. Besides, it has been hypothesized that the impact of THs on haematopoiesis includes an expanded generation of erythropoietin or haematopoietic components by non erythroid cells[17,18]. Be that as it may, a developing number of studies have exhibited an immediate part of THs in typical human and creature erythropoiesis[19, 20–21].

CONCLUSION

Public awareness about the dietary iodine consumption is mandatory in our region, so as to overcome the increased prevalence of the thyroidal dysfunction in our population. Furthermore, hyperthyroid state is more common in our population.

Author's Contribution:

Concept & Design of Study:	Mansoor Hassan
Drafting:	Saleh Muhammad
Data Analysis:	M. Awais & Saleh Muhammad
Revisiting Critically:	Muhammad Sabir
Final Approval of version:	Mansoor Hassan

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Haemorrhoidectomy

Comparison of Milligan – Morgan Haemorrhoidectomy VS Rubber Band Ligation in Management of Haemorrhoids

Ammara Bakhtawar[1], Muhammad Abubakre Khalid[2] and Ayesha Arshad[1]

ABSTRACT

Objective: To compare Milligan-Morgan haemorrhoidectomy with rubber band ligation technique in management haemorrhoids.

Study Design: Prospective comparative study

Place and Duration of Study: This study was conducted at the department of surgery (surgical Unit I) Nishtar Hospital, Multan from October 2016 to March 2017.

Materials and Methods: This prospective comparative study was conducted in the department of surgery (surgical Unit I) Nishtar Hospital, Multan from October 2016 to March 2017. Total number of patients were divided into two groups (group A and B) by lottery method. Mean and SD was calculated for numerical data like age, similarly frequency percentages were calculated categorical data like gender, degree of haemorrhoids, rectal bleeding, constipation, prolapsed, discharge, pain, complications, urinary retention, low back pain and anal stenosis. Chi square test was applied for effect modification or association of outcome variables with effect modifiers. P value < 0.05 was considered as significant.

Results: Overall, there were 100% (n=534) patients; the study population was sub-divided into two groups, equally; 100% (267) in each. In group A, Milligan-Morgan haemorrhoidectomy was performed and rubber band ligation was performed, in patients of group B. Different complications were seen as pain in 76% (n=203) patients, bleeding in 18.4% (n=49) patients, Urinary retention in 17.2% (n=46) patients, Anal stenosis in 4.9% (n=13) patients and low back pain in 9.0% (n=24) patients, in group A. While, in group B, pain was noted as in 8.2% (n=22) patients, bleeding in 2.2% (n=6) patients, Urinary retention in 3.0% (n=8) patients.

Conclusion: Results of our study concluded that Rubber band ligation is better choice for the treatment plan of haemorrhoids when evaluated in terms of complication rate and outcomes.

Key Words: Haemorrhoidectomy,Milligan-Morgan, Rubber band ligation, Rectal Bleeding.

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INTRODUCTION

Haemorrhoids are posterolateral, lateral and anterolateral anal vascular cushions made up of anorectal lining and vascular plexus involvement, in lower margin loos areolar tissue also involved[1]. Hemorrhoids may be internal, external and mixed in nature; if plexus of superior vein enveloped by mucous membrane hemorrhoids were labeled as internal, if plexus of inferior haemorrhoidal vein enveloped by skin or epithelium lower to mucocutaneous junction and its drainage in systemic circulation it is considered as external hemorrhoids. Mixed or anterolateral hemorrhoids are those in which both varieties (internal or external) are mixed[2,3].

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In western world hemorrhoids are the main medical illness without discrimination of gender and age[4]. Old age population over 50 years of age (5-50%) is mainly involved. Patients of haemorroids clinically presents with rectal bleeding which is an early symptom[5], in late symptoms patients may include mucosal prolapsed or protrusion of haemorrhoids. Further prolapsed haemorrhoids may present with pruritus and perianal discharge[6,7].

Pain is not found in these cases until hemorrhoids are not supervened, diagnosis of hemorrhoids also dependant on their presentation; external presentation can be diagnosed on anal inspection but internal presentation require proctoscopy. Another classification was introduced named as Coligher classification; Grade 1 involve bleeding but not prolapsed, grade 2 are those which bleed but lessen spontaneously, grade 3 hemorrhoids are prolapsed but and require digital reduction and grade 4 are irreducible hemorrhoids[8].

Grade 1 and 2 are should be treated conservatively and life style modification (oral hydration use of fibrous diet and laxatives or stool softener) advised[9]. A very small number of cases need other management techniques like sclerotherapy rubber band ligation and

invasive management like Milligan-Morgan technique. Rubber band ligation is very easy to performed with minimum complication is the most commonly used non invasive procedure[10]. Saeed MT et al[11] conducted a study in 2017 on comparison of Milligan-Morgan and rubber band ligation for management of hemorrhoids and reported that rubber band ligation is more effective with less complications as compared to Milligan-Morgan. This study was planned to identify the right choice of management for hemorrhoids in our region and study will be used as local reference[12].

MATERIALS AND METHODS

This prospective comparative study was conducted in the department of surgery (surgical Unit I) Nishtar Hospital, Multan in time period of October 2016 to March 2017. Total number of patients were divided into two groups (group A and B) by lottery method, 267 patients in each group with diagnosis of grade 2nd and 3rd haemorrhoids. Patients in group A were treated with open haemorrhoidectomy and in group B were treated with double band ligation. Before division patients were evaluated thoroughly in consideration of history, symptoms of disease, any previous history, rectal bleeding and any history of previous ligation or open hemorrhoidectomy. Rectal, abdominal examination was done, proctoscopy and in needed cases proctosigmoidoscopy was done. Patients having history of previous rectal procedure for hemorrhoids treatment, any anal or rectal pathology, cancer, crohns's disease, coagulopathy, and anal fissures were excluded from the study. With routine investigation; complete blood count, viral markers, urine examination, X ray chest, ECG was also taken in patients of age more than 40 years.

Before start of treatment in group A all patients were prepared with kleen enema at least 24 hours before. Antibiotic coverage with metronidazole 500 mg and cephradine 1 g i/v was given when induction was started for general anesthesia GA. Procedure of Milligan-Morgan was performed in lithotomy position under GA after set protocol of endotracheal intubation. In post-operative period Metronidazole and cephradine started 8 hourly, pain killers diclofenac sodium were given on demand of patients for three to five days. In group B rubber band ligation was given under same protocols. In this group oral analgesics, antibiotics metronidazole 400 mg tablet were given, after discharge follow up was advised fifteen days to one month.

Data was entered in statistical software SPSS version 23 and analyzed for desired variable analysis, Mean and SD was calculated for numerical data like age, similarly frequency percentages were calculated categorical data like gender, degree of haemorrhoids, rectal bleeding, constipation, prolapsed, discharge, pain, complications, urinary retention, low back pain and anal stenosis. Chi square test was applied for effect modification or association of outcome variables with effect modifiers. P value < 0.05 was considered as significant.

RESULTS

Overall, there were 100% (n=534) patients; the study population was sub-divided into two groups, equally; 100% (267) in each. In group A, Milligan-Morgan haemorrhoidectomy was performed and rubber band ligation was performed, in patients of group B.

The mean age and hospital stay of the patients, in group A, was 49.01±2.04 years and 2.97±0.86 days respectively, while the mean age and hospital stay of the patients, in group B, was 37.81±2.83 years and 1.01±0.11 days respectively. Distribution of duration of stay, in group A, revealed that 4.5% (n=12) patients stayed 1 day, 21.3% (n=57) for 2 days, 49.4% (n=132) for 3 days, 21.4% (n=57) for 4 days and 3.4% (n=9) patients stayed for 5 days in the hospital. While, in group B, all of the patients were discharged on the second day of admission.There were 81.6% (n=218) males and 18.4% (n=49) females in group A, and 90.3% (n=241) males and 9.7% (n=26) females in group B. (Table 1 & 5).

Table No. 1. Comparison between ''Group A'' and ''Group' B' according to demographic data.

Variable	Group A (n=267)	Group B (n=267)	Test of Sig.
Gender	M=81.6% , F=18.4%	M=90.3%, F=9.7%	$\chi^2 = 8.206$ p=0.004
Age	49.01±2.04 years	37.81±2.83 years	$\chi^2 = 37.17$ p=0.000

Table No. 2. Clinical Examination in Groups.

Grade	Group A (n=267)	Group B (n=267)	Test of Sig.
2nd Degree haemorrhoids	(n=98),36.7%	(n=157)58.8 %,	$\chi^2 = 26.128$ p=0.000
3rd degree haemorrhoids	(n=169),63.3%	(n=110), 41.2%	
Total	(n=267) 100%	(n=267) 100%	

Table No. 3. Comparison of complications in Groups.

Complications	Group A (n=267)	Group B (n=267)	Test of Sig.
Bleeding per rectum	81.6% (n=218)	88.8% (n=237)	$\chi^2 = 5.363$ p=0.021
Constipation	59.9% (n=160)	67% (n=179)	$\chi^2 = 2.916$ p=0.088
Prolapse	56.9% (n=152)	44.2% (n=118)	$\chi^2 = 8.66$ p=0.003
Discharge	15.7% (n=42)	9.0% (n=24)	$\chi^2 = 5.601$ p=0.018

Table No. 4. Comparison of complications in Groups.

Complications	Group A (n=267)	Group B (n=267)	Test of Sig.
Pain	76% (n=203)	8.2% (n=22)	$\chi^2 = 251.6$ p=0.000
Bleeding	18.4% (n=49)	2.2% (n=6)	$\chi^2 = 37.478$ p=0.000
Urinary retention	17.2% (n=46)	3.0% (n=8)	$\chi^2 = 29.749$ p=0.000
Anal stenosis	4.9% (n=13)	0.4% (n=1)	$\chi^2 = 10.563$ p=0.001
Low back pain	9.0% (n=24)	3.7% (n=10)	$\chi^2 = 6.15$ p=0.013

Table No. 5. Distribution of Hospital Stay &Mean±S.D with Test of Significance.

Hospital Stay	Group A (n=267)	Group B (n=267)	Test of Sig.
1 day	4.5% (n=12)	98.9% (n=264)	$\chi^2 = 476.72$ p=0.000
2 days	21.3% (n=57)	1.1% (n=3)	
3 days	49.4% (n=132)	0	
4 days	21.4% (n=57)	0	
5 days	3.4% (n=9)	0	
Total	100% (n=267)	100% (n=267)	
Mean±S.D	2.97±0.86 days	1.01±0.11 days	

Clinical examination was noted as 2nd degree haemorrhoidsin 36.7% (n=98) patients and 3rd degree haemorrhoidsin 63.3% (n=169) patients, in group A. While, in group B, observed as 2nd degree haemorrhoids in 58.8% (n=157) patients and 3rd degree haemorrhoids in 41.2% (n=110) patients. (Table 2).

Bleeding per rectum was noted as in 81.6% (n=218) patients, constipation in 59.9% (n=160) patients, prolapse in 56.9% (n=152) patients and discharge 15.7% (n=42) patients in group A. While, Bleeding per rectum was noted as in 88.8% (n=237) patients, constipation in 67% (n=179) patients, prolapse in 44.2% (n=118) patients and discharge 9.0% (n=24) patients in group B. (Table 3).

Different complications were seen as pain in 76% (n=203) patients, bleeding in 18.4% (n=49) patients, Urinary retention in 17.2% (n=46) patients, Anal stenosis in 4.9% (n=13) patients and low back pain in 9.0% (n=24) patients, in group A. While, in group B, pain was noted as in 8.2% (n=22) patients, bleeding in 2.2% (n=6) patients, Urinary retention in 3.0% (n=8) patients, Anal stenosis in 0.4% (n=1) patients and low back pain in 3.7% (n=10) patients. (Table 4).

Association was found between gender (p=0.004), clinical examination (p=0.000), bleeding per rectum (p=0.021), prolapse (p=0.003), discharge (p=0.018), pain (p=0.000), bleeding (p=0.000), urinary retention (p=0.000), anal stenosis (p=0.001), low back pain (p=0.013), stratified age (p=0.000) and hospital stay (p=0.000) except constipation (p=0.088) in groups, after applying the chi-square. (Table 1-5).

DISCUSSION

Haemorrhoids are the main cause of rectal bleeding and anorectal disorder in our community[13], but peoples are resistant to surgical procedures because of many myths and fear of operative interventions. So as a replacement lot of treatment options are introduced in variant stages of haemorrhoids, historically these procedures starts from the time of Hippocrates[14]. Its treatment options include excision, ligation, cautery and diathermy. Saluran introduced its treatment option as haemorrhoidectomy in 1888 which is modified in later years with Milligan-Morgan, Miles, Park and Ferguson[15].

In the era of 1965 another revolutionary change was made in management of bleeding haemorrhoids by rubber band ligature without any anesthetic assistance which was also modified in 1963 by Barron[16]. In this study we compare these two technique in terms of safety, efficacy, hospital stay and post operative complications. In our study there were 81.6% (n=218) males and 18.4% (n=49) females in group A, and 90.3% (n=241) males and 9.7% (n=26) females in group B and mean age was 49.01±2.04 years in group A and 37.81±2.83 years in group B, these findings are similar to previous study conducted by Saeed MT[11] in which male to female ratio was 3.3:1 and mean age was age 47±2 and 35±2 in group A and B respectively.

Misra et al[17] found mean age of 45.5±1 years. La Torre F et al[18] found mean age 42 years and Madoff et al[19] reported mean age 50.2±15 years in their studies .as described above rectal bleeding is common in our region we found in our study 81.6% (n=218) rectal bleeding in group A and 88.8% (n=237) in group B, in western society it was reported 90% almost same percentage. Similarly prolapsed haemorrhoids in western community was reported in 80% of patients and in our study 56.9% (n=152) in group A and 44.2% (n=118) in group B[20].

In our study it was noted as 2nd degree haemorrhoidsin 36.7% (n=98) patients and 3rd degree haemorrhoidsin 63.3% (n=169) patients, in group A. While, in group B, observed as 2nd degree haemorrhoids in 58.8% (n=157) patients and 3rd degree haemorrhoids in 41.2% (n=110) patients in a study Zolinger et al[21] found 2nd degree and third degree haemorrhoids in 51, 93% in group A and 29, 83% in group B. these results also comparable with our results.

Keeping all these variables Ali SA et al[22] conducted a study on this topic and reported that rubber band ligation is an effective and safe method of haemorrhoids management as compare to Milligan-Morgan. These results are also similar to our results.

Muazzam M et al[23] conducted a similar study and reported that rubber band ligation is safe reliable and effective procedure with minimum complications as compared to Milligan-Morgan technique for the management of haemorrhoids.

CONCLUSION

Results of our study concluded that Rubber band ligation is better choice for the treatment plan of haemorrhoids when evaluated in terms of complication rate and outcomes.

Author's Contribution:

Concept & Design of Study:	Ammara Bakhtawar
Drafting:	Ammara Bakhtawar
Data Analysis:	Ayesha Arshad
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Hematological Changes in Patients Presenting with Typhoid Fever

Naveed Khan[1], Muhammad Abbas[1], Hameed Ullah[1] and Subhanuddin[3]

ABSTRACT

Objective: To study hematological changes in typhoid fever.
Study Design: Observational study
Place and Duration of Study: This study was conducted at the pathology department of Bacha Khan Medical College Mardan and Medical Department of Mardan Medical Complex Teaching Hospital Mardan from June, 2015 to February, 2016.
Materials and Methods: This study included total of 100 patients of typhoid fever and 50 as a control healthy individuals. Typhoid positive serum was taken as that with visible agglutination at 1:32O. To exclude false positive we used rising titer for widal test. These patients were also Typhidot positive and were having step ladder rising of fever. Complete blood counts were performed by hematology analyzer an automated machine (Sismex Japan)
Results: In the present study 40% had anemia, Hemoglobin level was 9.1±.879 g/dl, 20% had thrombocytopenia, platelet count was 120 ±17.897 x10^3/ul, 30% had leucopenia, total leucocyte count was 2.8 ± 1.557 x 10^3/ul and 6% patients showed leucocytosis, total leucocytecount was 14.5± 1.875 x 10^3/ul. Hemoglobin, white blood cell and platelet count were significantly lowered as compared to control group.
Conclusion: The study concluded that hematological abnormalities are significant findings in typhoid fever. Any patient presenting with cytopeneia should be strictly screened for Typhoid fever to avoid unnecessary use of bone marrow aspiration. Moreover full blood counts should be performed on these patients as this gives useful information to the clinician for effective and prompt treatment. Due to high morbidity and mortality in misdiagnosed cases further research work and new diagnostic tests are recommended for diagnosis of the disease
Key Words: Anemia, Typhoid fever, Thrombocytopenia, Leucopenia.

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INTRODUCTION

Typhoid fever is a systemic bacterial infection, caused by salmonella typhi. It develops following ingestion of food or water that is contaminated with the organism and this human pathogen has the ability to survive for several months in soil and water[1]. Typhoid fever constitutes a major public health problem in many developing countries but mortality has been reported from developed countries as well. It has involved 12.6 million cases worldwide and estimated 60,000 deaths annually[2] .It is higher among children howevermortality due to enteric fever depends on time taken to diagnose and immediate treatment.

Mortality is 1% if treatment is started before onset of complications and up to 15% if treatment is started after onset of complications[3]. Salmonellatyphi infection also presents as fever of unknownorigin[4]. Once untreated typhoid fever is associated with a lot of complications which include intestinal perforation in the distalilium, septicemia, peritonitis, encephalitis, metastatic abscess, cholecystitis, endocarditis, osteomyelitis and rash[5]. Typhoid fever is also associated with biochemical changes[6]. It is also associated with hematological abnormalities, hepatic dysfunction and high frequency of extrahepatic complications, but these changes are transient and respond well to appropriate antimicrobial therapy[7]. Alteration in hematological parametersinclude anemia and decrease in platelets and total leucocyte count and reduction in neutrophil and eosinophils. Typhoid fever may be a cause of pancytopenia and is associated with depressed erythropoiesis, mylopoiesis, thrombopoiesis[8] Sometime typhoid fever presents with atypical manifestations, like burning micturition, diarrhea, isolated hepatomegaly and bone marrow depression which usually occurs in 1st week of infection and these cases are multi drug resistant (MDR) which results in high mortality and morbidity[9].The aim of this study is to evaluate hematologicalchanges in typhoid fever. Typhoid fever is a major public health problem in developing countries including Pakistan, because of poor hygienicmeasures and densepopulation; people are at high risk of contracting the diseases. As typhoid fever is associated with hematological and non-hematological complications, so any patient presenting

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with hematological abnormalities, typhoid fever should be kept in mind and proper diagnosis should be done for prompt and immediate treatment to reduce their complications and to avoid unnecessary use of bone marrow aspiration.

MATERIALS AND METHODS

This study was conducted in the pathology and medical departments of Bacha Khan Medical College and Mardan Medical Complex Teaching Hospital Mardan from June, 2015 to February, 2016.

A total of 100 patients were included in the study. They were positive for typhoid fever diagnosed by Widal test, Typhidot test and on the basis of their clinical presentation, 50 patients were taken as a control group.

Typhoid positive serum was taken as that with visible agglutination at 1:32O. To exclude false positive we used rising titer for widal test. These patients were also Typhidot positive and were having step ladder rising of fever. Patients having temperature due to malaria, sore throat, chest or urinary tract infection were excluded from the study.

Hemoglobin less than 10g/dl was considered as anemia, platelet count less than 150 $x10^3$/ul and total leucocyte less than $3x10^3$/ul were defined for thrombocytopenia and leucopenia respectively. Temperature of 101 ˚F was defined for fever.

Complete blood counts were performed on all these patients by hematology analyzer (Sismex Japan) for which 3ml blood was collected in a tube containing 1.8ml EDTA. All the samples were processed by hematology analyzer for determination of Hemoglobin level, platelets and total leucocyte counts.

All the data was statistically analyzed by using T. Test and chi-square test. Level of significance was set at P<.001.

RESULTS

A total of 100 patients of typhoid fever were included in the study and 50 as control healthy individuals.

Complete blood counts were performed on the samples of these individuals for determination of Hemoglobin level, Platelets counts and total leucocyte counts. Forty out of 100 patients (40%) had anemia. Hemoglobin level was 9.10±.879 g/dl which was significantly lower than the control groups. Twenty out of 100 patients (20%) had thrombocytopenia, platelet count was $120±17.897x10^3$/ulsignificantly lower than the control group. Thirty out of 100 patients (30%) had leucopenia, total leucocyte count was $2.8±1.507$ $x10^3$/ul and 6 out of 100 (6%) patients had leucocytosis.

The present study showed that hematological changes are significant findings in typhoid fever and values are significantly lower as compared to control group, pvalue for Hemoglobin, platelet counts and total leucocyte count is P<.004, P<.0032, and P<.0035 respectively.

Table No.1: Frequency of Hematological Changes inTyphoid fever

S.No.		
1	Anemia	40%
2	Thrombocytopenia	20%
3	Leucopenia	30%
4	Leucocytosis	6%

Table No.2: Mean value ofHematological parameters in typhoid fever as compared to control group

S.No.	Mean value of hematologicalparameter in typhoid fever	Mean value of control group
Hemoglobin Level	9.19±.879 g/dl	12.99±0.468g/dl
Platelet counts	$120±17.578$ $x10^3$/ul	$450±20.678x10^3$/ul
Leucopenia	$2.8±1.56$, $x10^3$/ul	$5.6±(1.3568x10^3)$ul
Leucoytosis	$14±1.54x$ 10^3/ul	$10±0.567×10^3$/ul

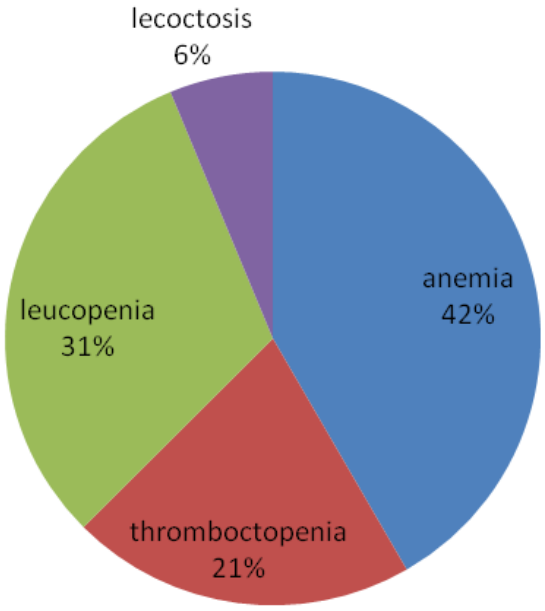

Figure No.1: Frequency of Hematological Changes in Typhoid fever.

DISCUSSION

Typhoid fever is a systemic bacterial infection caused by salmonella typhi(gram negative rods).Infection is usually acquired through the ingestion of contaminated food or water. It is a major public health problem in the developing countries including Pakistan.

Typhoid fever presents with a lot of clinicopathological profile. It may present as fever of unknownorigin (FUO)[10] .Clinical features include fever, headache, fatigue, joint pain, splenomegaly, intestinal inflammation and perforation, peritonitis, septicemia and hematological changes[11].

In the present study 40% patients showed anemia, 20% patients had thrombocytopenia and 30% showed leucopenia. A similar study has been conducted by Lolkchandwala which reported that typhoid fever isassociatedwith anemia, thrombocytopenia and leucopenia[12] .Another study conducted on 42 typhoidpatients by Ifeani revealedthat typhoid fever is associated with significant findings of leucopenia , anemia and thrombocytopenia which shows similar correlation with our study[5] .Another study was conducted by Abro et all on 75 typhoid patients in which 61% patients showed anemia 40% patients showed thrombocytopenia, 10% had leucocytosis and 4%had leucopenia[2] .All these studies showed that typhoid fever is associated with significant hematological changes but all these hematological changes are transientand improve with antimicrobial therapy. Poor disposal of human excreta, poorly equipped latrine, poor hand washing habit and untreated water and poor hygienic conditions are the main causes of transmission of typhoid fever[13]. Endotoxin LPS of the salmonella typhi play important role inpathogenesis of liver injury and other complications[14]. Hematological changes are common in typhoid fever. Bone marrow suppression and hemophagoscytosis are possible mechanisms responsible for hematological changes[15]. Microangiopatic hemolyticprocessesare alsoinvolved inthe pathogenesis of anemia[16] .It is also suggested that leucopenia (neutropenia) has been caused by increased margination and defective granulopoiesis[17]. The reduction in WBC occurs as a fall in neutrophils and eosinophils counts. Eosinophil count starts declining from six days onwards and eosinopeniahas diagnostic value as well[18]. The underlying cause of eosinopenia in typhoid fever is unclear but principally in healthy individual eosinophils resides at mucosal surfaces including gut mucosa[19].It is possible that increased margination of these cells during infection account for marked decrease in eosinophils in typhoid fever[20]. Some degree of eosinopenia is present in all enteric fever patients[12]. Leucoytosis also occurs in typhoid fever. In our study 6% patients showed leucocytosis. The same has been reported by Abroetall[2].

CONCLUSION

The study concluded that typhoid fever is associated with significant hematological changes; therefore full blood counts should be done immediately and could be useful in the diagnosis of typhoid fever. It provides useful information to the clinicians for effective and prompt treatment and diagnosis of typhoid fever.

Moreover as the disease cause high morbidity and mortality if untreated or misdiagnosed, further research work is recommended for new reliable diagnostic tests for early diagnosis of the disease.

As typhoid positive patients present with significant hematological changes so any patient presenting with cytopeneia should be strictly screened for typhoid fever to avoid unnecessary use of bone marrow aspiration.

Author's Contribution:

Concept & Design of Study:	Dr. Naveed Khan
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Data Analysis:	Dr. Subhan Uddin & Dr.Manzoor
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Frequency of Infection in Open Fracture Shaft of Femur Treated by Reamed versus Unreamed Interlocking Nails

Open Fracture of Femur Treated by Reamed versus Unreamed Interlocking Nails

Saeed Ahmad, Maria Maha Naeem and Mahnoor Fatima Shah

ABSTRACT

Objective: To compare the frequency of infection in open fracture shaft of femur treated by reamed versus unreamed interlocking nails.

Study Design: Randomized control trial study.

Place and Duration of Study: This study was conducted at the department of Orthopaedics unit, Nishtar Hospital Multan from December 2016 to May 2017.

Materials and Methods: All the data was entered and analyzed using computer program SPSS version 21. Descriptive statistics were used to calculate mean and standard deviation for age and duration of fracture. Frequencies and percentages were calculated for gender, blood culture, open fracture and infection. Chi-square test was applied to test the hypothesis. Confounders and Effect Modifiers like age and gender were controlled by stratification of data. Post stratification chi square test was applied. P value ≤ 0.05 was considered significant.

Results: A total of 484 patients selected for this study and divided into two equal groups 242 in each group. That infection was detected in 5.4% patients (Table-2).When we correlate outcome variable (Infection) with groups, in group A, in 5 (2%) patients observed with infection and in 237 (98%) was not found infection, similarly when we correlate it in group B, 21 (8.6%) patients have infection and in 221 (91.4%) infection was not found. P value was 0.001 a significant value.

Conclusion: our results revealed that management of femoral shaft fracture with reamed intramedullary nail is better than undreamed intramedullary nailing because it aids fracture healing and have less infection rate.

Key Words: Intramedullary nailing, Reamed, Unreamed, Infection, Blood Culture.

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INTRODUCTION

Femoral shaft fractures have much variability in presentation like stress fracture, non-displaced or displaced fractures and soft tissue injury. Major causes of its fracture include multisystem trauma or high energy force hit by any object or road traffic accident. Some isolated injuries also associated with femoral shaft fracture such as primary bone tumours, metastatic disease and presence of metabolic bone disease[1]. Its treatment options were modified and evaluated from last few decades, but traction and splinting considered as a favourable treatment. Among many treatment options intramedullary (IM) nailing accepted as a gold standard; it has different types like proximal or distal IM nailing which can normalize the longitudinal stability and rotational stability[2].

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IM nail is an implant use to share weight of body and make the bone strong in early weight bearing in stable and unstable both types of fractures. In nail are more beneficial if locking screws are used after reaming the bone of fracture site[3,4].

Nail may be dynamic or static which are classified and their application decided by evaluating anatomical level of fracture, communication and plane or pattern of fracture[5,6]. Fracture communication can be made on the basis of Winquist and Hansen, through which surgical intervention has been decided[7]. Interlocking of intramedullary nail is also an emerging intervention, its effectiveness accepted globally. To make it more effective its reaming was introduced recently with minimum blood loss, endosteal blood supply and outcome (union) is also better.

Literature favours the stabilisation of diaphyseal fracture of tibia much better than with IM nails, but in femoral shaft fractures efficacy of reamed and undreamed nails still under debate[8]. It was reported in previous literature that undreamed nails save endosteal blood supply due to which healing of fracture site is more rapid and complications are minimum. Farshid B et al.[9] conducted a study on Clinical Outcome of Reamed Versus Unreamed Intramedullary Nailing for Femoral Shaft Fractures. In his study he include 34 patients divide them into two equal groups of 17 in each

group. He reported infection rate in reamed group was 0.3% and in unreamed group was have infection rate of 3.3%.

The purpose of this study is to evaluate the outcome of infection in open fracture shaft of femur treated by reamed versus undreamed interlocking nails, so that we will be able to adopt a better technique to treat open fracture shaft of femur with less infection.

MATERIALS AND METHODS

This randomized control trial was conducted in the department of Orthopaedics unit Nishtar Hospital Multan from December 2016 to May 2017. The protocol of the research for the initials of the study was submitted to the ethical committee of the Nishtar hospital Multan. Sample size was calculated with WHO sample size calculator with CI 95 %, power of study 80% and P1 infection in reamed group 0.3% and P2 infection in undreamed group 3.3%.After the approval, the study was started. The patients with open fracture shaft of femur fulfilling the inclusion criteria were taken for consent for the surgical intervention and written consent was taken. All the agreed patients were enrolled for the trail. Open fracture shaft of femur (as per defined in operational definition), skeletally mature patients between 18 to 50 years of age, patients with surgical wound debridement performed within six hours of the trauma and patients with no systemic complications (no head injury, chest problem and cardio vascular problem) on clinical assessment were included in the study. Patients who failed to receive surgical debridement performed within six hours of the trauma, patients presenting systemic complications (head injury, chest problem and cardio vascular problem) and fracture other than femoral shaft were excluded from the study.Infection was diagnosed by pus discharge, presence of redness and swelling of wound area within one month of surgery and confirmed on the basis of positive blood culture that was turn media turbid. Open Fracture Clinically fracture in which bone was exposed and it was confirmed by x ray showing fracture line. Duration of fracture was evaluated from time of injury to the procedure in operation theatre. Positive Blood culture is considered as positive when same bacteria present on two different samples of a patient.

The patients/care takers were informed about clinical condition, procedures that was done and management of the fracture. All the patients were randomized into two groups (group A and group B) by lottery method. Patients in group A was operated with reamed and group B operated with undreamed technique. Patients were kept NPO before six hours of surgery and surgery was performed by orthopaedic surgeon having experience more than five years and he was blind to the study under standard anaesthesia. Preoperative short of antibiotics was given and fluid was administered. Post-operative antibiotic course was completed in both groups equally and proper analgesia was given. All the recruited patients were observed for acute post-operative infection (2-30 post-operative days) at fracture site; in suspected cases the material from infected wounds was obtained for culture. The courses of the infections was analyzed and noted. All the information was recorded on a predesigned Performa. (Performa attach).

All the data was entered and analysed using computer program SPSS version 21. Descriptive statistics were used to calculate mean and standard deviation for age and duration of fracture. Frequencies and percentages were calculated for gender, blood culture, open fracture and infection. Chi-square test was applied to test the hypothesis. Confounders and Effect Modifiers like age and gender were controlled by stratification of data. Post stratification chi square test was applied. P value ≤ 0.05 was considered significant.

RESULTS

A total of 484 patients selected for this study and divided into two equal groups 242 in each group. In group A mean age of patients was 33.56 and SD 8.826 and in group B mean age was 33.94 and SD was 10.107, similarly mean duration of fracture in group A was 15.98 and SD 8.326, in group B mean duration of fracture was 15.57 and SD 8.399 (Table-1). As concern to the gender 242 (50 %) were male and 242 (50%) were female included in the study (Table-2). Positive blood culture was found in 26 (5.4%) patients and remaining 458 (94.6%) were having negative blood culture, so that infection was detected in 5.4% patients (Table-2).

Table No. 1: Association of Blood culture and Group of patients.

Blood culture	Group of patient		Total
	A	B	
Positive	5 (2%)	21 (8.6%)	26 (5.3%)
Negative	237 (98%)	221 (91.4%)	458 ((4.7%)
Total	242 (100%)	242 (100%)	484 (100%)
P Value		**0.001**	

Table No. 2: Association of Infection and Group of Patients.

Infection	Group of patient		Total
	A	B	
Present	5 (2%)	21 (8.6%)	26 (5.3%)
Absent	237 (98%)	221 (91.4%)	458 (4.7%)
Total	242 (100%)	242 (100%)	484 (100%)

When we correlate outcome variable (Infection) with groups, in group A, in 5 (2%) patients infection is

presented and in 237 (98%)was not found infection, similarly when we correlate it in group B, 21 (8.6%)patients have infection and in 221 (91.4%) infection was not found(Table-3). P value was 0.001 a significant value. Same ratio was found when we correlate groups with blood culture (Table-1).

DISCUSSION

In adult femoral shaft fracture intramedullary nailing is the gold standard of treatment, IM nails are made up of titanium or stainless steel. Both metals have their own healing properties, titanium alloy have elastic properties which is almost the nature of human bone, so it is biologically compatible with human body and response system as compared to stainless steel[10]. Insertion of IM nails promote the callus formation at fracture site and shortens the healing and union time. In concern to ream and undreamed nailing it was observed that reamed nails have larger diameter due to which stiffness is higher in those patients who were treated with reamed nails[11].

In our study we observed infection in infection was detected in 5.4% patients, in group A, in 5 (2%) patients infection is present and in 237 (98%) was not found infection, similarly when we correlate it in group B, 21 (8.6%) patients have infection and in 221 (91.4%) infection was not found. A similar study was conducted by Mohammad T et al[12] and reported 3.3 % superficial infection only fascia involved, and 6.6% have deep infection. In these patients culture was obtained after stopping antibiotics for 28 hours.

In 2013 Puri Set al[13] conducted a study on comparison of reamed and undreamed nails and reported only one case of post-operative infection which was later treated with external fixator percentage of infection in his study is much less than our study. This infection case was found in undreamed group, results of his study were also comparable with our results.

Chun-xiao Li et al[14] conducted a study and reported reamed nailing is beter in outcomes than undreamed but infection rate is not significantly different in both groups P = 0.27, RR = 0.38, 95% CI: (0.01, 7.87). Results of his study were contradicted to our findings as we found less infection in reamed group as compared to undreamed.

Smith et al[15] found in his study rate of infection 33% in tibial fracture treated with intramedullary nailing with reaming technique, in these fracture major number include soft tissue injury. Klemm and Borner et al also[16] reported 6 infectionswhen grade I open fractures treated with intramedullary nailing technique after reaming process. Bone and Johnson et al also[17] reported 2 infections after treatment of grade II and grade III fractures when treated with reamed IM nailing. Kaltenecker et al[18] reported in his study no infections when 66 patients were treated with reaming nail technique and reported that reaming nail is highly effective and have less complication rate.

CONCLUSION

Our results revealed that management of femoral shaft fracture with reamed intramedullary nail is better than undreamed intramedullary nailing because it aids fracture healing and have less infection rate.

Author's Contribution:

Concept & Design of Study:	Saeed Ahmad
Drafting:	Saeed Ahmad
Data Analysis:	Maria Maha Naeem
Revisiting Critically:	Mahnoor Fatima Shah
Final Approval of version:	Saeed Ahmad

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Study of Hepatic Encephalopathy in Department of Medicine at PMCH Nawabshah

Hepatic Encephalopathy

Jeando Khan Daidano[1], Akbar Yousfani[2], Rafique Ahmed Memon[1] and Saeed Khan[1]

ABSTRACT

Objectives: To assess the frequency of Hepatic Encephalopathy in patients with chronic liver disease admitted in the medical ward.

Study Design: Cross sectional Study

Place and Duration of Study: This study was conducted in the department of Medicine at PMCH Nawabshah from January 2016 to December 2016.

Materials and Methods: For this study both male and female were included, informed consent was taken from all the relatives of patients or conscious patients. Data collected using Questionnaires' translated into local languages Sindhi and Urdu. Statical analysis was done using SPSS 15 Version.

Results: 53 were males and 47 were females. Common age group was middle age, mean age(46.93) .6 patients were in stage 1, 17 patients were in stage 2, 56 patients were in stage 3, 21 patients were in stage 4. Anti HCV positive in 72 patients, HBsg positive in 10 patients, both antiHCV and HBsAg positive in 18 patients SGPT raised in 87 patients, PT prolonged in 94 patients, BILIRUBIN raised in10 patients, UREA and Creatinine raised in 8 patients.

Conclusion: Majority of the patients admitted with history of infection irregular diet pattern , electrolyte imbalance, portal hypertention, irregular treatment and use of herbal medicines. Proper treatment, education of the patient and preventive measures patients quality of life and mortality can be reduced.

Key Words: Chronic liver disease, hepatic encephalopathy, mortality, portal hypertention, ammonia, HE, OHE, CLD.

Citation of articles: Study of Hepatic Encephalopathy in Department of Medicine at PMCH Nawabshah. Daidano JK, Yousfani A, Memon RA, Khan S. Med Forum 2017;28(9):95-99.

INTRODUCTION

Hepatic encephalopathy is reversible neuropsychiatric abnormalities seen in chronic liver disease patients without any neurologic and metabolic abnormality. By collateral vessels portal blood enters into systemic circulation.[1] and inability of the liver to clear toxic agents of gut origin. Symptoms include cognitive impairment, personality changes impaired consciousness, altered sleep pattern[2], disorientation, confusion, agitation and coma can occur.[2] Chronic liver disease is common cause of death in Pakistan. Main causes of chronic liver disease are hepatitis C and B virus.[3] Hepatic Encephalopathy is main cause of death in majority of the patients with chronic liver disease.[3] MRI and MRS are helpful for the pathophysiological mechanism of Hepatic Encephalopathy.[4] Ammonia is important factor responsible for the Hepatic Encephalopathy, ammonia enters via port systemic shunting and liver fails to metabolize ammonia.[5]

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Due to increased level of ammonia irritability, aggressiveness and convulsions occur.[6] Increased level of ammonia was observed in patients with coma.[7] Ammonia produced mainly by intestinal bacteria, catabolism of ingested protein is their main source of energy.[7] Helicobacter pylori is another source of ammonia production and precipitate Hepatic Encephalopathy.[7] Alkalosis due to prolonged diuretic therapy, impaired renal function and intravascular volume depletion can affect renal excretion of ammonia. Muscle wasting in chronic liver disease increase ammonia level, muscle is main site for extra hepatic ammonia removal.[7] Neurons are more to the effect of ammonia than astrocytes which absorb ammonia and convert it to glutamine minimize its toxic effect on neurons.[8] Increased levels of ammonia increase brain glutamine levels with the result increased brain water and impaired neuropsychological function.[9] Increase ammonia level causes increase uptake of brain neutral amino acid I.e. the L –aminoacid transporter at the blood brain barrier increase conversion of ammonia into glutamine. By this mechanism increase amount of tyrosine, phenylalanine and tryptophan into CNS affecting many neurotransmitters dopamine, nor epinephrine and serotonin.[10] Many toxic chemicals are produced by enteric flora increase the neurotoxic effect of ammonia. These are mercaptans, phenols, oxindole and short chain fatty acids. Oxindole cause sedation, coma, hypotension and muscular weakness.[11] Oral neomycin is effective. Neurological features are altered sleep pattern, bradykinesia, asterixis, hperreflexia and

decrebrate posturing . 80% patients improve with lactulose and lactitol treatment.[12] Ammonia level lowered by Rifaximin, neomycin, paromomycin and metronidazole, improve quality of life and recurrence rate are decreased of OHE.[13] Hospital stay is decreased, rifaximin improve psychomotor abnormality. Use of probiotics improve Hepatic Encephalopathy and decrease ammonia level,[14] Administration of branched chain amino acids shown mixed mixed results, treatment recommended in protein intolerant patients.[15] Liver transplantation advised for fulminant or subfulminant liver failure, improve Hepatic Encephalopathy with cirrhosis. Flumazenil is effective for Hepatic Encephalopathy.[16]

MATERIALS AND METHODS

This study was conducted in department of medicine at PMCH Nawabshah from January 2016 to December 2016. Both males and females were selected for this study, informed consent was taken from all relatives of patients and conscious patients. Study was done using Questionnaires translated into local languages Urdu and Sindhi. Detailed history was taken including dietary history, melana, hemetemesis and constipation. History of herbal medicine, fever and previous history of admission in the hospital. Clinical examination including general physical examination and examination of abdomen to see jaundice, spleen liver size and ascites. Routine investigations and specific investigations were done including blood CP, serum electrolyte, urea, creatinine, LFT, PT, HBsAg and anti HCV. U/S was done to assess hepatomegaly , shrinkage in size of liver, spleenomegaly and ascites. X-ray chest was done to see pleural effusion. Treatment given with rifaximin, lactulose, branched chain amino acids and K, Na replacement.

Inclusion Criteria: Coma due to CLD
HBsAg positive
Anti HCV positive

Exclusion criteria: Coma due to any other cause
HBsAg negative
Anti HCV negative

RESULTS

Hundred patients were selected for this study, 53 were males 47 were females, antHCV positive in 72 patients, HBsAg positive in 10 patients. HBV and anti HCV positive in 18 patients. Decreased potassium level in 30 patients, decreased sodium level in 20 patients, history of malena 8 patients, hematemesis in 7 patients, constipation in 60 patients, fever in 26 patients, serum urea creatinine raised in 8 patients, serum bilirubin raised in 10 patients and SGPT raised in 87 patients. Hb% 6-8 in30 patients,9-10 in 60 patients, 11-12 in 10 patients. Leukocyte count raised in 60 patients and PT raised in 94 patients. 6 patients were in grade 1, 17 patients in grade 2, 56 patients in grade 3 and 21 patients in grade 4.

Table No.1: Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26.00	1	1.0	1.0	1.0
	32.00	1	1.0	1.0	2.0
	38.00	3	3.0	3.0	5.0
	39.00	3	3.0	3.0	8.0
	40.00	2	2.0	2.0	10.0
	41.00	3	3.0	3.0	13.0
	42.00	4	4.0	4.0	17.0
	43.00	2	2.0	2.0	19.0
	44.00	5	5.0	5.0	24.0
	45.00	8	8.0	8.0	32.0
	46.00	8	8.0	8.0	40.0
	47.00	10	10.0	10.0	50.0
	48.00	10	10.0	10.0	60.0
	49.00	8	8.0	8.0	68.0
	50.00	6	6.0	6.0	74.0
	51.00	4	4.0	4.0	78.0
	52.00	3	3.0	3.0	81.0
	53.00	3	3.0	3.0	84.0
	54.00	2	2.0	2.0	86.0
	55.00	4	4.0	4.0	90.0
	56.00	2	2.0	2.0	92.0
	57.00	2	2.0	2.0	94.0
	58.00	2	2.0	2.0	96.0
	59.00	2	2.0	2.0	98.0
	60.00	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

Table No.2: Grades of HE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	6.0	6.0	6.0
	2.00	17	17.0	17.0	23.0
	3.00	56	56.0	56.0	79.0
	4.00	21	21.0	21.0	100.0
	Total	100	100.0	100.0	

Table No.3: Prothrombin Time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12.00	5	5.0	5.0	5.0
	17.00	2	2.0	2.0	7.0
	18.00	2	2.0	2.0	9.0
	19.00	1	1.0	1.0	10.0
	20.00	2	2.0	2.0	12.0
	21.00	6	6.0	6.0	18.0
	22.00	9	9.0	9.0	27.0
	23.00	8	8.0	8.0	35.0
	24.00	8	8.0	8.0	43.0
	25.00	12	12.0	12.0	55.0
	26.00	8	8.0	8.0	63.0
	27.00	6	6.0	6.0	69.0
	28.00	9	9.0	9.0	78.0
	29.00	5	5.0	5.0	83.0
	30.00	6	6.0	6.0	89.0
	31.00	5	5.0	5.0	94.0
	32.00	2	2.0	2.0	96.0
	33.00	2	2.0	2.0	98.0
	34.00	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

Table No.4: One way ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Age	Between Groups	1026.381	3	342.127	13.772	.000
	Within Groups	2384.929	96	24.843		
	Total	3411.310	99			
Sex	Between Groups	.478	3	.159	.626	.600
	Within Groups	24.432	96	.254		
	Total	24.910	99			
Occupation	Between Groups	.478	3	.159	.626	.600
	Within Groups	24.432	96	.254		
	Total	24.910	99			
HCV	Between Groups	.637	3	.212	2.437	.069
	Within Groups	8.363	96	.087		
	Total	9.000	99			
HBV	Between Groups	11.188	3	3.729	5.155	.002
	Within Groups	69.452	96	.723		
	Total	80.640	99			
Bilirubin	Between Groups	36.131	3	12.044	2.391	.073
	Within Groups	483.645	96	5.038		
	Total	519.776	99			
SGPT	Between Groups	28205.432	3	9401.811	13.287	.000
	Within Groups	67929.318	96	707.597		
	Total	96134.750	99			
PT	Between Groups	955.433	3	318.478	23.016	.000
	Within Groups	1328.357	96	13.837		
	Total	2283.790	99			
Sodium	Between Groups	580.203	3	193.401	3.896	.011
	Within Groups	4765.507	96	49.641		
	Total	5345.710	99			
potasium	Between Groups	1.110	3	.370	2.126	.102
	Within Groups	16.706	96	.174		
	Total	17.816	99			
Hemoglobin	Between Groups	69.820	3	23.273	11.998	.000
	Within Groups	186.220	96	1.940		
	Total	256.040	99			
Urea	Between Groups	418.697	3	139.566	.333	.801
	Within Groups	40229.893	96	419.061		
	Total	40648.590	99			
Creatinine	Between Groups	.880	3	.293	.670	.572
	Within Groups	42.011	96	.438		
	Total	42.890	99			
L.count	Between Groups	74839447.863	3	24946482.621	27.779	.000
	Within Groups	86212043.137	96	898042.116		
	Total	161051491.000	99			

Out of 100 patients 81 patients recovered completely, 19 patients expired due to severity of the disease. In statical analysis HCV is denoted by 1, HBV by 2, male by 1, female by 2, farmer occupation by 1 and housewife by 2. Statical analysis was done using SPSS 15 version

DISCUSSION

In our study major cause of Hepatic Encphalopathy is CLD due to HCV and HBV, rarely due to alcohol or any other cause, as compared to western countries where alcohol is main cause of chronic liver disease.[17] Precipitating factor found commonly constipation, high

protein diet, esophageal varices and excessive diuretic use with electrolyte abnormality. Commonest cause of chronic hepatitis in our study are viral infections not treated properly with investigations and treatment. Preventive measures like hand washing for CLD proper cooked food and boiled water or purified water necessary.vaccination of HAV to non immune and HEV for CLD patients are necessary preventive measures to precipitate HE. Aavoidence of herbal medicines which are hepatotoxic and anti tuberculoses drugs can precipitate HE. High mortality rate observed with MELD score more than 27 a study done in western india.[18] With concomitant renal failure mortality increased.[19] Electrolyte imbalance with diuretic use or diarrhea vomiting causes low sodium and low potassium death ratio increased.[20] Increase ammonia level and various other inflammatory cytokines cause increase in glutamine within astrocytes and swelling of astrocytes causes brain edema and neurotoxic effect.[21] Increase in white matter of brain in HE is due to astrocytes swelling during progress of disease, decreased gray matter volume detorioted with HE progression. These are reported in CT and MRI studies.[22] Increased in thalamus has been observed in patients with OHE. All information from cortex through striato-pallidal system to thalamus, filter for sensory in puts. Basal ganglia dysfunction leads to disinhibition of thalamus and results neurocognitive dysfunctions. Portal flow steal is important factor in the development of HE in cirrhotic patients. Ammonia level is dependent on portal blood flow . There are trials of lactulose for maintenance of remission from OHE.[22] Lactulose as prevention of HE with upper GI bleeding is helpful[23] in another study lactulose can prevent first episode of OHE.[24] Liver transplantation is best option for treatment of HE with its risks.[25] Control of precipitating factors in the treatment of OHE is important majority of patients treatment is correction of the precipitating factors.[26] Rifaximin with lactulose is excellent to maintain improvement with OHE.[27] BCAA improve HE either OHE or MHE.[28] Treatment of OHE include treatment of of underlying cause, supportive measures and specific treatment. All patients of overt HE should be given prophylactic treatment to reduce recurrence.[29]

CONCLUSION

Prevention of precipitating factors and use of lactulose with rifaxamixin risk of HE can be reduced, patients quality of life can be improved. In our study main cause of HE with CLD is HCV and HBV, early diagnosis and treatment mortality rate can be reduced. Avoidence of high protein diet, avoidance of animal protein and use of vegetable protein risk of HE can be reduced. Maintenance of nutrition, supportive measures and specific treatment HE canbe prevented. All patients of OHE should be given prophylactic treatment to reduce recurrence. By appropriate treatment we can reduce hospital admission and risk of further readmission. To get maximum benefit from treatment early diagnosis and treatment are essential.

Author's Contribution:

Concept & Design of Study:	Jeando Khan Daidano
Drafting:	Jeando Khan Daidano & Akbar Yousfani
Data Analysis:	Akbar Yousfani
Revisiting Critically:	Rafique Ahmed Memon & Saeed Khan
Final Approval of version:	Jeando Khan Daidano

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

UTI in Pregnant Women

Frequency of Urinary Tract Infection in Pregnant Women Based on Urine Routine Examination and Culture and Sensitivity in a Tertiary Care Centre in Rawalpindi

Touseef Fatima, Faiza Ibrar and Nosheen Akhtar

ABSTRACT

Objective: Urinary pregnancy is commonly affected by urinary tract infection and Escherichia coli is the most common causative organism. Asymptomatic bacteriuria can lead to cystitis or pyelonephritis. 10% of the women visiting outdoor clinics have UTI and 15% of women can have a UTI at any time during their life. Purpose of this study was to find out the frequency of urinary tract infection in pregnant women in our setting.

Study Design: Observational study.

Place and duration of Study: This study was conducted at the Gynecology outpatient Department Fauji Foundation Hospital, Rawalpindi. Study data was collected over six months from 8th May till 7th November 2009.

Materials and Methods: 117 patients with symptoms of UTI were included on the study. Patients were selected through non probability consecutive sampling from outpatient clinics of department of Obstetrics and Gynecology, Fauji Foundation Hospital Rawalpindi.

Results: The mean age of the affected patients was 31.46 ± 6.5 years. The mean gestational age was 167.56 ± 65.84 days. The mean gravidity was 4.43 ± 2.80. The mean parity was 3.05 ± 2.30. UTI diagnosed by urine analysis and culture and sensitivity was 20.5%. Frequency of UTI in 1st, 2nd and third trimester was 29.1%, 33.3% and 37.5% respectively. Escherichia Coli was isolated in 58.3%, Pseudomonas in 16.6%, Klebsiella in 8.3%, Staphylococcus aureus in 8.3% and Proteus spp. in 8.3%.

Conclusion: Urinary tract infection when diagnosed using urine analysis and culture & sensitivity is a frequent finding among pregnant women.

Keywords: Urinary tract infection, pregnancy, urine routine examination, microscopy, culture and sensitivity.

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INTRODUCTION

Although urinary tract infection is a common problem[1], most commonly urethra and urinary bladder are involved but upper urinary tract i.e. ureter and kidney can also be involved. It can affect any age group of both genders but susceptibility of women to UTI is more due to short urethra. This susceptibility is even increased during pregnancy due to various physiological changes in urinary tract. The development of glycosuria in pregnancy favors bacterial growth during pregnancy and urinary tract system dilatation favors upward spread of infection if not treated in time.

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The estimated prevalence of asymptomatic bacteriuria (ASB) in pregnant women is 2.5-11% [2] which is higher than non pregnant women i.e. 3-8% .however frequency of overt clinical infection is similar in both groups i.e. 0.3-1.3 %. ASB is a risk factor for acute cystitis (40%) and pyelonephritis (25-30%) in pregnancy if left untreated. It causes 70% of all cases of UTI.

The symptoms of urinary tract infection are pain during micturation or a burning micturition, urgency and frequency. A number of risk factors may be involved like increased age, low socioeconomic status, sexual activity, multi parity [3] and untreated pathologies. Changes in coital patterns (e.g. changes in position, frequency, and post coital antibiotics can offset recurrence in at risk individuals). Pregnant women with UTI are at risk of pre term delivery, spontaneous miscarriage and other adverse pregnancy outcomes. Very Rarely septicemia, septic shock and death are caused by it.

Presence of white and red blood cells and bacteria on urine analysis and detection of bacterial growth on culture is a reliable diagnostic test for UTIs. This study has been designed to analyze frequency of UTI in pregnant women.

MATERIALS AND METHODS

This study was conducted at the Gynecology outpatient Department Fauji Foundation Hospital, Rawalpindi. Study data was collected over six months from 8th May till 7th November 2009.117 patients with symptoms of UTI were included on the study. Patients were selected through non probability consecutive sampling from outpatient clinics of department of Obstetrics and Gynecology, Fauji Foundation Hospital Rawalpindi.

All the women with confirmed pregnancy irrespective of their duration of pregnancy, of all age groups and parity with complaints of burning and frequency of micturition attending Gynecology outpatient Department Fauji Foundation Hospital Rawalpindi were included. Pregnant women having renal pathology, with any organic disease of genital tract, who have taken antibiotic in last seven days and non pregnant women were excluded.

It is descriptive cross sectional study. Data was collected through a proforma containing all relevant details of 117 women fulfilling the inclusion criteria. Permission was taken from hospital ethical committee. Married pregnant women with confirmed pregnancy on ultrasound, of any age and parity, coming to Gynecology out patient Department with complaints of burning and frequency of micturition were asked to take part in study. Detailed obstetrical, gynecological and medical history was taken. After well informed consent patients were asked to give midstream specimen after periurethral toilet, which was sent to laboratory within half an hour where urinalysis and culture and sensitivity was done by single pathologist.

The data was analyzed by using SPSS version 10 Mean = standard deviation was calculated for numerical data e.g. gravidity, parity, urinalysis, microscopic findings, culture and sensitivity. Frequencies (%) were calculated for categorical data.

RESULTS

Our study included 117 pregnant women with symptoms of UTI. The patient's age ranged from 18-45 years. The mean age of the patients presented was 31.46±6.5 years. Gravidity ranged from 1-11 with a mean of 4.43±2.80. The parity ranged from 0-8 with a mean of 3.O5±2.30. The gestational age ranged from 60 to 280 days with a mean of 167.56±65.84 days. Urinary tract infections diagnosed on the basis of urine routine space examination and urine culture was present in 24 (20.5%). Pus cells on urinalysis were found in 50(42.7%) patient. Urine culture was positive in 24(20.5%) patients.

Escherichia Coli was isolated in 14(58.3%) patients. Pseudomonas isolated in 4(16.65%) of patients. Klebsiella isolated in 2(8.3%) patients. Staphylococcus saprophyticus isolated in 2(8.3%) patients. Proteus spp isolated in 2 (8.3%) patients.

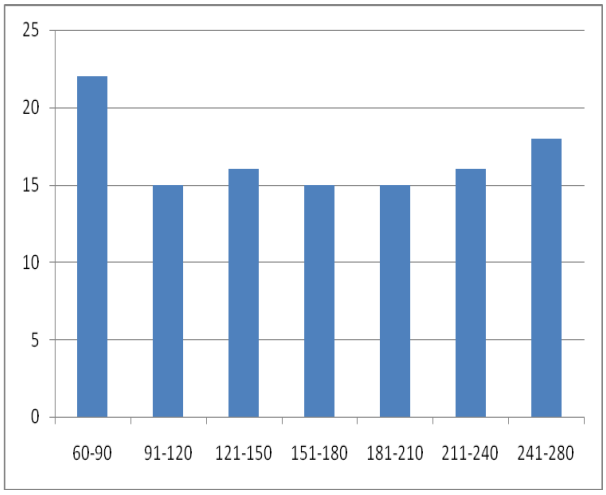

Figure No.1: Histogram showing gestational age of study population

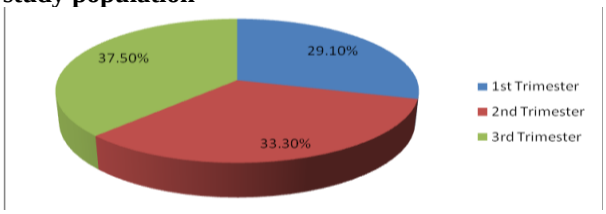

Figure No.2: Pie graph showing frequency of UTI according to trimesters

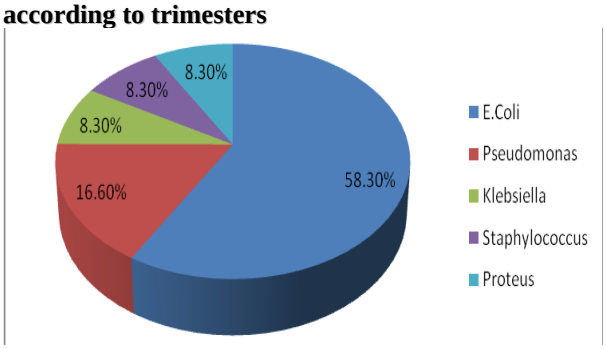

Figure No.3: Pie chart showing frequency of various microorganisms isolated.

DISCUSSION

Pregnancy is a risk factor for UTI. The risk for UTI starts as soon as 6 weeks of pregnancy. The physiological changes of pregnancy are attributed for this increased risk of development of UTI. Ureteral dilatation increased bladder volume and decreased bladder tone, along with decreased ureteral tone, contribute to increased urinary stasis and ureterovesical reflex. Additionally 70% of pregnant women develop glycosuria which encourages bacterial growth in the urine. Moreover increase progestin and estrogens decrease ureteral tone which decreased the resistance of lower urinary tract against bacteria invasion.

It is reported that UTI was developed amongst the 4 to 5 % of pregnant women. Factors affecting symptom variation of UTI are age, gender, previous pathology and whether a catheter is present or not. UTI symptoms

include frequency and urgency of micturition and dysuria among young women. Older women are more likely to be tired, weak and have muscle aches and abdominal pain.

Regarding organisms, 80 to 90 % of infections are caused by Escherichia Coli and this stands true for both pregnant as well as nonpregnant patients. Proteus Mirabilis and Klebsiella Pneumonia are common, whereas group B streptococcus and staphylococcus saprophyticus are less common among Gram positive organisms. Other organisms like Enterococci, Gardenella vaginalis and Ureaplasma urealyticum may also cause UTI though they are rare. Another research suggested that women who are "non-secretors" of certain blood group antigens can have recurrent UTIs. This is proposed because the Epithelium of the vagina and urethra in these women may allow bacteria to attach and invade easily.

In order to diagnose UTI, urinary symptoms should be asked about and then sample of urine should be tested for the presence of bacteria and white blood cells. Body produces white blood cells to fight against infection. For accurate diagnosis clean catch specimen of urine is mandatory. Patient is asked to wash genital area and collect midstream urine sample in a container. Culture is performed by placing part of urine sample in a tube or dish with a medium encouraging bacteria growth. Bacteria identified when they have multiplied usually after 1 to 3 days. A sensitivity test is then performed to different antibiotics to see which medication is best for treating the infection.

Maternal and neonatal complications during pregnancy can be devastating. Asymptomatic bacteriuria if untreated can develop symptomatic cystitis in 30 % of the patients and up to 50 % develop pyelonephritis if not treated. Asymptomatic bacteriuria can cause growth restriction of fetus in utero and delivery of infants with low birth weight. It is recommended to screen all the women for asymptomatic bacteriuria and any symptoms of UTI should be evaluated. Screening and treating give benefit to women having previous history of preterm delivery.

The objective of this current study was to study the prevalence of urinary tract infection among pregnant women in a (tertiary health care centre). In our observational study 117 symptomatic women were screened for urinary tract infection. Urinary tract infection was diagnosed in 24(20.5%) patient on the basis of urine routine examination and urine culture and sensitivity. Out of those patients, pus cells were seen on in urine samples of 50(47.2%) patients. Positive urine culture was found in 24(20.5%) patients.

The age groups of our studied patients were between 18-45 years. Frequency of UTI in different trimesters found were 29.1 % in 1st trimester, 33.3% in 2nd trimester and 37.5% in 3rd trimester. Microorganisms detected were E.coli in 14(58.3%), Pseudomonas in 4(16.6%), Klebsiella in 2(8.3%), Staphylococcus saprophyticus in 2(8.3%) and Proteus spp. in 2(8.3%) patients.

A study was carried out to find out the prevalence of urinary tract infection (UTI) in pregnant women in Khyber Teaching Hospital Peshawar [4] .The prevalence rate of UTI was 29.57% among symptomatic and 23.33% among control. Multipara are significantly affected by UTI however gestational age does not affect its occurrence.. Patients having past history of urological problems are more prone to UTI. The prevalence of different isolated pathogens were Escherichia coli (21.74%) Pseudomonas spp. (12.6%), Klebsiella spp. (1.74%), Proteus spp. (0.87%) Staphylococcus epidermitis (0.87%), Staphylococcus saphrophyticus (0.87%) and Citrobacter spp. (0.87%).

Another study was conducted in Turkey [5] showed prevalence of 18.2%. Among these patients 27.3% were in 1st trimester, 33.8% were in 2nd trimester and 38.9% in 3rd trimester.

Buganda Medical Centre (BMC) in Mwanza, Tanzania[6] carried out a cross sectional study to find out the prevalence among symptomatic and asymptomatic pregnant women. 78 (31.5%) were symptomatic and 169 (68.4%) asymptomatic among total of 247 pregnant women. There is no significant difference between the prevalence of bacteriuria among symptomatic and asymptomatic pregnant women with 17.9% and 13.0% respectively, with no significant difference between the two groups. Escherichia coli (47.2%) and Enterococcus spp (22.2%) were the most common pathogens. The rate of resistance of Escherichia coli to ampicillin, tetracycline, sulfamethoxazole/trimethoprim, gentamicin, ciprofloxacin, nitrofurantoin, ceftriaxone, and imipenem were 53%, 58.8%, 64.7%, 5.9%, 11.8%, 5.9%, 29.4% and 0%, respectively.

In above mentioned studies prevalence found was slightly variable (29%, 18.2%, 14%, 17.9%) as compared to 20.5% in our study. This difference may be because they conducted comparative study between symptomatic and non symptomatic, but our study included only symptomatic pregnant women. Frequency differences relative to trimesters found are nearly same as in our study.

In another cross sectional study conducted in Bahawal Victoria Hospital, Bahawalpur [7] , the prevalence of bacteriuria was 4.8%. In 8.6% of cases causative organism was E coli while 21.4% cases were due to other organisms. Positive past history of UTI was present in 35.7% of these women as compared to only 9.7% non-bacteriuric women. Bacteriuria lead to preterm labour in 21.4% bacteriuric women compared with 4.9% non-bacteriuric women. Bacteriuria was also found to be risk factor for symptomatic UTI as 14.2% bacteriuric and 2.7% non-bacteriuric women developed cystitis. Pregnancy is commonly affected by

asymptomatic bacteriuria which also increases the risk of symptomatic UTI and preterm birth.

Another descriptive study was conducted in the Obstetrics and Gynecology Department of Isra University Hospital, Hyderabad [8] . This study showed that out of 232 women, pregnancy induced changes on urinary system were found to cause urinary symptoms in 108(46.5%) as no growth was found on urine culture whereas 10 (4.3%) were due to underlying UTI. Abnormal voiding pattern was the most common presenting complaint accounting for 40 % of cases followed by irritative symptoms and voiding difficulties. The risk factors for UTI identified were illiteracy, history of sexual activity, low socioeconomic group, past history of UTI and multiparity. Out of 108 cultures, growth was found in only 10 (4.3%) specimens. The most common organism was E-coli 7 (3%) followed by S-aureus in 3 (1.3%).

Another study[4] conducted in Karachi compared prevalence of asymptomatic bacteriuria among pregnant and non pregnant women. Prevalence of asymptomatic bacteriuria among pregnant was 6.2% compared to 2.85 % among non pregnant patients. Regarding pathogens, the finding was similar to other studies with E coli being most common organism followed by Staph. saprophyticus.

The most important similarity found in all studies whichever the study design was or whatever the results were was maximum isolation of Escherichia Coli from urine samples. Urinary tract infections (UTI) are the most common bacterial infections during pregnancy. Untreated UTI can be associated with serious obstetric complications. ASB is a risk factor for recurrent UTI in pregnancy hence all pregnant women should be screened for ASB by culture.

In a study conducted in Nigeria[9] the prevalence of UTI among pregnant patient was found to be 48 %. Individuals of the age group 21-25 years had the highest incidence of infection (41.7%) was found in the age group 21-25 years, while the age group 36-40 years had the lowest incidence of infection (2.0/%). The rate of infection was highest in third trimester 82.3% compared to 17.7 % in the second trimester. Parity was found to have no significant impact on frequency of UTI. The most common pathogen was, staphylococcus aureus 44.8% while the least common was P. mirabilis (0.9 %).

From the above discussion it is clear that exact frequency of UTI is not known. Its frequency varies according to population studied and method chosen for diagnosis. The frequency of UTI ranges between 14-48% in international studies and 4.3-29% in local data. So frequency of UTI of 20.5% is consistent with local and international data. In our study patient diagnosed with UTI were treated according to their symptomatology and sensitivity report and this showed better relief but as this was not the objective of my study so no follow up was maintained of such patient. In future studies are needed to look for adverse pregnancy out- come and efficacy of treatment given to diagnosed cases of UTI in our set- up.

CONCLUSION

Urinary tract infection is frequently diagnosed among pregnant women visiting gyne OPD. Proper diagnosis investigation and treatment is necessary to cure the disease.

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