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Dr. Ghazanfar Ali | Gastroenterology | UK | 447800760008 | ghazanfarali@hotmail.com
Dr. Haider Abbas | Urology | UK | 447816149374 | haidersyd@hotmail.com
Dr. Khalid Rashid | Cardiology | UK | 447740477756 | khalid.rashid@cht.nhs.uk
Dr. Iqbal Adil | Surgery | UK | 447872969928 | drmiadil@hotmail.com
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Dr. Shahid Ishaq Khan | Cardiology | USA | 0019014855214 | shahidishaqkhan@hotmail.com
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Dr. Basil Nouman Hashmi | Surgery | UK | 00447806611517 | basilhashmi@doctor.net.uk
Dr. Sohail Saied | Surgery | UK | 00441923285114 | sohailsaied@gmail.com
Dr. Safdar Ali | Cardiology | USA | 0016307816668 | safdarali@sbglobal.net
Dr. Ejaz Butt | Pathology | KSA | 00966551349289 | drejazbutt@hotmail.com
Dr. Syed Taqadas Abbas | ENT | KSA | 00966597052906 | taqadasdr@yahoo.com
Dr. Shoab Tarin | Ophthalmology | UK | 00447515370995 | shoabtarin@gmail.com
Dr. Parashu Ram Mishra | Surgery & Gastroenterology | Nepal | +9779841233450 | drparashuram.mishra@gmail.com
Dr. Mansoor M. Mian | Psychiatry | USA | +1 (972)375 7821 | mmian2000@yahoo.com
Dr. Sohail Qureshi | Orthopaedic | UK | 00447734329666 | quraishisohail@yahoo.com
Dr. Mushtaq Ahmad Mughal | Orthopaedics | UK | 00447971886006 | mahmed01@blueyonder.co.uk
Dr. Mansoor Tahir | Radiology | UK | 00447921838093 | drmansoortahir@yahoo.com

Business Manager: Nayyar Zia Ch.
Legal Advisors: Kh. Ejaz Feroz (Barrister),
Kh. Mazhar Hassan & Firdos Ayub Ch. (Advocates)

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The impact of epidemic depends on three factors: the infectivity and virulence of the agent, the susceptibility of the host, and the environment favorability of the agent. That means simply, if the infectivity is high, it's going to attack more people, but if the virulence is high, it will kill more people without being able to be transmitted. If the host is not susceptible to infection then also epidemic will fade or may not produce increased case fatalities. And if the environment is not conducive to viral survival then also the epidemic will fade.

A latest Chinese study in Peking university on 103 patients, they identified two strains of COVID 19, the original S type and L type, which is a mutated type; but their study found more of L type. It suggests that L type is more aggressive mutated form. We don't know which type will be predominant in India? But overall the infectivity of COVID 19 is pretty high with a favorable mortality profile which is actually pro-epidemic. So the agent remains same as for the rest of the world, till now.

The host factor is very important in an epidemic. The infectivity and severity of the disease, as well the mortality are determined by immune response of the host. The COVID 19 causes more suffering in elderly and more mortality. Though the young patients are infected, they usually show mild or no symptoms. In 80% of cases symptoms are mild. 15% cases symptoms are moderate and 5% cases having severe symptoms like ARDS and overall mortality is around 2.5%. The most of the mortality is above 60 years of age with highest above 80 (14 % in Italy vs 10% in Wuhan). The mortality is almost insignificant among individuals less than 20 years of age (0.3%), and nil upto 9 years. So age composition of a country will determine it's mortality. A country like India where 22% of population are elderly (more than 65 years) the mortality is very high. Whereas in Indo Pak 6.4% are above 65, so naturally the mortality will be less here. Apart from this age composition another factor is immunity which is immunity of the host. We have two types of immunity. The first line is Innate immunity and 2nd line is Adaptive immunity. The innate immunity does not have a memory and it is mediated by NK cells, macrophages and neutrophils. The Adaptive immunity is mediated by T and B lymphocytes and it needs a memory of a previous encounter with the pathogen. But here our Innate immunity is important as the COVID 19 is a new virus. A US team of researchers has found that Indo Pak, compared to other world populations carry more NK cells that can detect and terminate infections at early stage. Indo Pak acquired the activating KIR (killer cell immunoglobulin receptor) genes as a result of natural selection to survive environmental challenges. So there is some proof that we have a stronger first line defense, may be as we are exposed to more infective agents and that determine a specific microbiome inside our body. Apart from that, observation in the current epidemic is, mortality is less still in malaria endemic areas. We still don't know the causal relationship. But studies have shown Plasmodium Falciparum requires Zinc for parasitic growth, and zinc also inhibits the RNA dependent RNA polymerase of COVID 19 and Chloroquine is Zinc Inophore. So, there may be an interrelationship! But being a malaria endemic country we can breathe a sigh of relief!

There is another factor as well. A new study is recruiting health workers to evaluate effect of BCG vaccination in prevention or manifestation of COVID 19 infection. BCG vaccine is given in childhood to modulate their immunity against tuberculosis. It actually enhances T cell mediated immunity which is a form of Adaptive immunity, but at the same time with the help of IL1 Beta it stimulates innate immunity, as well. BCG vaccination has been shown to reduce 30% of viral infections, with the help of this Innate immunity. So BCG, Tuberculosis and Innate immunity all seem to link together. We don't know till now whether we will have another advantage, in fight against this virus, of being a Tuberculosis endemic country.

It is hot topic now that whether the hot climate of our country will be able to kill the virus? We still don't know. But let's see the temperature and latitude of the affected countries! The ‘Global Virus Network ‘ has predicted that weather modeling can explain spread of COVID 19. Their observation is that the spread of COVID 19 is along a narrow corridor of 30-50" N at consistently similar weather conditions of 5 to 11 degree Celsius and 47% to 79% humidity. They also suggested that a temperature rise of 12 degrees Celsius or higher, the viral transmission may be difficult. A study in China also found that that the virus transmission is best at a temperature 8.72 degree Celsius and with every 1 degree rise in minimum temperature, the total number of cases go down. So what will be the fate of the virus in boiling temperature? It is a valid speculation. We didn't have a single casualty in MERS epidemic in 2012, which was a deadly Coronavirus. We don't know whether it was due to a proper isolation or our climate! So just hold tight till mid April, maintain a lock down properly, and leave the rest to scorching sun rays.

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Guidelines and Instructions to Authors
Relationship of Testosterone with White Blood Cells in Adult Males
Farooq Munfaet Ali Khan1, Muhammad Omar Shamim2, Rashad Mahmood4 and Khuram Shahzad Khan3

ABSTRACT

Objective: To establish a probable relationship of serum testosterone with total leucocyte count and differential leucocyte count in Pakistani male population.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Institute of Basic Medical Sciences, Dow University of Health Sciences, Karachi, lasting from September 2010 to September 2011.

Materials and Methods: It was conducted on 200 apparently healthy non-smoker males between 30-50 years selected by convenient sampling. Early morning samples of serum total testosterone and WBC count were obtained by phlebotomy after detailed medical history and thorough physical examination. All tests run on the same day and results were calculated.

Results: The mean (±SD) total testosterone was 15.92±6.32nmol/L. The frequency of low testosterone was 13.5%. TLC and neutrophils inversely correlated with testosterone (p<0.05) whereas lymphocytes, eosinophils and monocytes did not correlate with testosterone.

Conclusion: Low testosterone is prevalent in Pakistani middle age non-smoker apparently healthy men. Significant inverse relationship of testosterone with WBC count showed that physiological variations in testosterone could modulate immune response in Pakistani men.

Key Words: Low testosterone, total leucocyte count, differential leucocyte count.


INTRODUCTION

Testosterone in men is responsible for its effects commencing from the intrauterine life followed by male reproducibility and maintenance of spermatogenesis with the development of secondary sexual characteristics on reaching adolescence. Increased size of musculature with decreased fat mass, increased bone mass and cortical bone size and increased hematocrit as compared to females occurs after puberty under the influence of androgens. Interstitial cells of Leydig produce testosterone that reaches target tissues through blood. 2–3% testosterone occurs in free form and the rest binds strongly with Sex Hormone Binding Globulin (SHBG) and loosely with albumin.1

The albumin bound and free form comprises bio available testosterone (20–40%). White blood cells (WBC) are involved in different body immune mechanisms based on exposure or non-exposure to antigens. These mechanisms include first line of defense in the form of direct killing of offending agent through phagocytosis by neutrophils, through the production of reactive oxygen species, release of antimicrobial peptides and expulsion of their nuclear contents to form neutrophil extracellular traps2 and macrophages in the tissues. Response to exposure to antigens occurs through the activation of T cells and the production of antibodies by B cells. WBC play an important role in inflammatory conditions. Exposure to androgens alters immune cells functionality in autoimmunity and cancer.3 Lymphoid and non-lymphoid cells of thymus and bone marrow express (AR) exhibiting development of B and T lymphocytes under the influence of androgen.4 Testosterone acting directly through AR increases IL-10 production by CD4+T lymphocytes.5 Androgens exert an immune-suppressive role in males through decreased cytokine production6 and suppress both humoral and cellular responses.7 Testosterone decreases the overall activity of T cells and is more strongly associated with cytokine down-regulation in T-cell mediated response.8 Testosterone decreases the number of B cells and antibodies. Cytokine BAFF (an essential survivor factor for B-cells) levels are higher in men with low testosterone.9 Testosterone suppresses T-helper 1(Th 1)
differential by inhibiting IL-12 signaling in CD4⁺ T cells through mediation of protein tyrosine phosphatase non-receptor type 1 (ptp11). Conversely, immune response in females to estrogens is different and is associated with the probable development of autoimmune diseases. Sex hormones being the key regulators of immune responses effect the ability of mature immune cells. Testosterone replacement therapy can decrease the levels of IgA, IgG and IgM antibodies and increased CD8⁺ cells. Androgen deficiency in men leads to increased levels of inflammatory biomarkers. Testosterone therapy attenuates inflammatory response in diseases like diabetes mellitus, cardiovascular disease (CVD) and rheumatoid arthritis. Considering the general immunosuppressive effect of testosterone and modulation of immunity, we tried to evaluate total leucocyte count (TLC) and differential leucocyte count (DLC) in relation to serum total testosterone in apparently healthy males aged 30-50 years.

MATERIALS AND METHODS

This was a cross sectional study conducted on apparently healthy male subjects aged 30-50 years. The study was conducted at Institute of Basic Medical Sciences (IBMS), Dow University of Health Sciences (DUHS) from 2010 to 2011. Smokers: due to variable levels of testosterone and/or subjects doing regular heavy exercise; due to increased levels, suffering from acute or chronic illnesses were excluded due to testosterone decline in acute and chronic illnesses, total leucocyte count (TLC) more than 11×10⁹ cells/L were excluded from the study. Individuals with history of hypogonadism with signs and symptoms with evidence of low testosterone from medical records were not included. Sample size was 200 for the study.

Before sampling, participants signed a written consent approved by Institutional Review Board (IRB) of Dow University. Detailed medical history with general and systemic examination findings were noted down on prescribed proforma approved by IRB.

Early morning blood samples were obtained at Dow Diagnostic Reference Research Laboratories (DDRRL). Participants took a comfortable sleep and proper dinner to obtain maximum individual level of testosterone as hormone exhibits diurnal variation and missing meal leads to energy disturbances causing down regulation of male reproductive axis.

2cc. blood was collected in purple top (containing EDTA) and yellow top bottles each for total leucocyte count (TLC) and serum total testosterone respectively. TLC was estimated on hematology analyzer (Celltac α) using volumetric impedance method of cell counting. Testosterone levels were assayed on same day by Cobas e 411 analyzer with cut-off value of 9.70 nmol/L, upper and lower cut off for TLC was ≥ 11 × 10⁹/l and ≤ 4 × 10⁹/l respectively. SPSS v. 16.0 was used for statistical analysis. Threshold for statistical significance was set up at p <0.05. t-test was applied for comparison of means. Pearson correlation was applied to see relationship between study variables.

RESULTS

The mean age ± SD of the participants of study was 38.72 ± 6.56 years. 68% respondents were married and 32% were unmarried. The mean serum total testosterone was 15.92 ± 6.32nmol/L. Mean TLC count was 7.56 ± 1.44. Mean neutrophil and lymphocyte percentages were 57.36 ± 8.38 and 47.52 ± 7.96 respectively. 27 participants had lower than normal testosterone (13.5%). The comparison of mean values between the two groups of testosterone was significant (p<0.05) for TLC and neutrophils but not for lymphocytes, basophils and monocytes (table 1).

Table No.1: Mean values of study variables

<table>
<thead>
<tr>
<th>Study variable</th>
<th>Mean ± S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>38.72 ± 6.56</td>
</tr>
<tr>
<td>Testosterone (nmol/L)</td>
<td>15.92 ± 6.32</td>
</tr>
<tr>
<td>Total Leucocyte Count (×10⁹ cells/L)</td>
<td>7.56 ± 1.44</td>
</tr>
<tr>
<td>Neutrophil %</td>
<td>57.36 ± 8.38</td>
</tr>
<tr>
<td>Lymphocyte %</td>
<td>37.52 ± 7.96</td>
</tr>
<tr>
<td>Monocyte %</td>
<td>3.06 ± 1.81</td>
</tr>
<tr>
<td>Eosinophil %</td>
<td>1.89 ± 0.99</td>
</tr>
</tbody>
</table>

Independent T test showed significant mean differences for the two groups of testosterone with TLC and neutrophils (p<0.05) but insignificant difference for lymphocytes, monocytes and eosinophils respectively (p>0.05). Pearson correlation showed that testosterone showed inverse relationship with TLC and neutrophil count (p<0.05). There was insignificant inverse relationship between testosterone and lymphocyte count (p>0.05). The correlation of testosterone with monocytes and eosinophils did not reach statistical significance (p>0.05) Table 2.

Table No.2: Correlation between serum total testosterone and WBC count

<table>
<thead>
<tr>
<th></th>
<th>Correlation coefficient (r)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLC</td>
<td>-.540</td>
<td>0.002*</td>
</tr>
<tr>
<td>Neutrophils</td>
<td>-.391</td>
<td>0.021*</td>
</tr>
<tr>
<td>Lymphocytes</td>
<td>-.580</td>
<td>0.532</td>
</tr>
<tr>
<td>Monocytes</td>
<td>-.040</td>
<td>0.571</td>
</tr>
<tr>
<td>Eosinophils</td>
<td>-.025</td>
<td>0.447</td>
</tr>
</tbody>
</table>

*Significant p value (≤0.05)

DISCUSSION

In recent years, association of testosterone with inflammatory markers has been investigated.
Many studies looked for the associations of low testosterone with inflammatory markers in sample populations with obesity, metabolic syndrome and elderly males. Our study aimed to look for the association of serum testosterone in relatively healthy males. Testosterone shows a decline with increasing age. On the other hand, immune response exhibits a change with aging as well. Aging males show decreased testosterone and elevated CRP. Higher levels of testosterone negatively correlate with WBC count and CRP. Low testosterone also showed significant association with elevated levels of pro-inflammatory cytokines TNFα, MIP1α and MIP1β. Low levels of testosterone are associated with increased mortality associated with altered inflammatory states. We tried to minimize the age effect by choosing the sample population between 30-50 years in our study. Mean testosterone levels in our study was 15.92 ± 6.32 nmol/l, which is consistent with population based study conducted in US by Tsilidis et al. In our study, mean difference in two groups of testosterone was significant for TLC and neutrophils but not for mononuclear cells. Mean TLC was 7.56 ± 1.44, mean neutrophil percentage was 57.36 ± 8.38 and mean lymphocyte percentage was 37.52 ± 7.96 in our study. Tsilidis et al. reported mean TLC of 6.47 ± 0.13, mean neutrophil % of 58 ± 3.0 and mean lymphocyte percentage of 29.3 ± 0.3. The difference in lymphocyte percentage might be due to the broader age group in study by Tsilidis et al while absence of any systemic or chronic illness in the participants of our study with comparatively narrower age group. Neutrophils activation requires pro-inflammatory cytokine TNFα. More recently, animal studies have showed that testosterone is responsible for higher recruitment of neutrophils in both testosterone dependent and independent tissues. Testosterone favors N2 like neutrophil phenotype expressing higher anti-inflammatory cytokines that may prove helpful in some non-bacterial type of inflammation and high expression of immunomodulatory molecules such as IL-10 and TGF-β1 that help in repairing tissues and resolving inflammation.

Our study showed inverse relationship of total testosterone with TLC count (p<0.05). These findings are similar to the findings in a large population study conducted by Hering et al. comprising of 1344 men in which testosterone showed inverse relationship to TLC. Another study conducted by Brand and colleagues showed inverse relationship of testosterone with TLC and neutrophils. Our finding is also consistent with the findings of Park and Lee who also reported inverse relationship of testosterone and SHBG with leucocyte count in Korean men aged more than 50 years. Strength of the study was; it provided estimates of serum total testosterone in apparently healthy non-smoker sedentary males and its relationship with TLC and DLC. The apparently healthy sample population enabled us to minimize the confounding factors for both WBC count and testosterone. Our study had some limitations; small sample size, convenient sampling, and inability to measure SHBG due to financial constraints.

CONCLUSION

Low testosterone is prevalent in Pakistani middle age non-smoker apparently healthy men. Significant inverse relationship of testosterone with WBC count showed that physiological variations in testosterone modulate immune response in Pakistani men.

Author’s Contribution:
Concept & Design of Study: Farooq Munfaet Ali Khan
Drafting: Muhammad Omar Shamim, Rashid Mahmood
Data Analysis: Shahzad Khan
Revisiting Critically: Farooq Munfaet Ali Khan, Muhammad Omar Shamim
Final Approval of version: Farooq Munfaet Ali Khan

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

REFERENCES


Changing Pattern of Acute Coronary Syndrome, the Burden Shifting Towards Younger Age Group

Bilal Ahmad, Hafiz ur Rahman, Abdul Hadi, Iftikhar Ahmad, Syed Javed Iqbal Bacha and Amjad Ali Shah

ABSTRACT

Objective: To determine the frequency of Acute coronary syndrome in young age group among patients admitted to Coronary Care Unit (CCU).

Study Design: Descriptive / observational study

Place and Duration of Study: This study was conducted at the Coronary Care Unit (CCU), Saidu Teaching Hospital, Saidu Sharif, Swat from November 2018 to May 2019.

Materials and Methods: This was a hospital based study, CCU admission data from June 2017 to April 2018 was reviewed and all patients admitted with diagnosis of ACS were identified, young age group was defined as 45 years or less. Total number of patients was 1327. The data of these patients was then recorded on a pre-design proforma, and then analyzed on SPSS for age, gender, and type of ACS.

Results: Data was available on 1327 patients admitted with ACS. 741 (55.8%) were male and 586 (44.2%) were female. The age range of these patients was from 15 to 120 years, with mean of 60.21±13.2 years. 196 patients (14.8%) were in younger age group, while 1131 (85.2%) patients were more than 45 years old. Patients in 50 years or below age group were 26.5%. In the young age group who were admitted with ACS 3.6% patients were 35 years or below, 0.5% were 25 years or below, while only one patient was 15 years old. Among the young patients 99 (51.3%) were male and 97 (48.7%) were female. 30 were admitted with UA, 48 with NSTEMI, while 118 patient had STEMI. Among these patients 55 had Anterior wall MI, 55 had inferior wall MI, while 8 had lateral wall MI. 45 patients (23%) in young age group were diabetic and 151 (77%) were non-diabetic.

Conclusion: Acute coronary syndrome is common in young age group in our population as compared to the developed countries, which need further work to identify the risk factors in our population and adapt measure to stop this catastrophe.

Key Words: ACS, STEMI, NSTEMI, Unstable angina, young age group.

INTRODUCTION

Coronary artery disease is broadly divided into Stable ischemic heart disease (chronic coronary syndrome), and Acute coronary syndrome which include unstable Angina, NSTEMI, and STEMI. Risk factors for CAD include modifiable and non-modifiable risk factors. Modifiable factors are Hypertension, Diabetes mellitus, dyslipidemia, and smoking, while non-modifiable risk factors include Age, male sex, and family history. There is a strong association of increasing age with coronary artery disease, the incidence of CAD and other atherosclerotic diseases rise with increasing age, but in our routine practice we found increasing number of younger patients admitted with Acute coronary syndrome, while data also support our observation.

In ISACS-TC (International Survey of Acute coronary Syndrome in Transitional Countries) registry 14931 patients were studied, in which 8% were aged ≤ 45 years. Most of them were male, however female had worst outcome. A study published in European heart journal shows that among patients admitted for ACS in coronary care unit 8.12% were aged <45 years, they were mostly male, and smokers, most of them were non diabetic. In Framingham Heart study the incidence of MI was 12.9/1000 in men 30 to 34 years old, and 5.2/1000 in women aged 35 to 44 years. Autopsy study of young people with unnatural death showed advances CAD in 20% men 30 to 34 years old. An Indian study shows 10.42% prevalence of ACS in patients younger than 40 years of age, most of them were male, and mostly had lesion in Left Anterior
Descending Artery (LAD), Saumeya gupta and colleague looked for the risk factors in young patients and found that male sex and sedentary life style are the most common risk factors. The global perspective of acute coronary syndrome shows that the burden of ischemic heart disease is increasing in Low-middle income countries as compared to high income countries and younger age group is affected more.

There is no reliable data regarding the prevalence of CAD in young age group in our population, so we conducted this study to see the exact situation in our population. The reason for doing this study was to bring awareness in our community regarding this issue, as generally we don’t take this as a serious matter, but once we come up with the exact statistics, it may help realize the real scenario, and this study will provide a ground for further work to look for new risk factors in this age group.

MATERIALS AND METHODS

This study was conducted in Coronary care unit (CCU), Saidu Group of Teaching Hospital from 1/11/2018 to 25/05/2019. Data of 1327 patients admitted from June 1st 2017 to April 10th 2018 was reviewed.

Ethical issues: Data was derived from ward admission register after taking permission from ward in charge, Identity or personal data of any patient was not disclosed to anyone through this study.

Operational definitions:
Acute coronary syndrome (ACS) consists of unstable angina (UA), NSTEMI, and STEMI.
1. UA was defined as typical ischemic type chest pain at rest for more than 20 minutes or with minimal exertion, with or without ST segment depressions or T wave inversions on ECG.
2. NSTEMI was diagnosed on the basis of typical chest pain, and elevated troponin levels, with no ST segment elevations on ECG.
3. STEMI was diagnosed on the basis of typical chest pain, and ST segment elevations on ECG.

Young age group: young age group was defined as age 45 years or less at the time of admission for both male and female.

Subjects: 1327 male and female patients of different ages who were admitted to CCU with acute coronary syndrome and their data were available in ward register.

Inclusion criteria: Patients of all ages admitted to CCU with ACS.

Exclusion criteria: Patients with old MI who were admitted this time with another diagnosis were excluded. Patients who had recent MI and then re admitted with post MI complications were also excluded.

RESULTS

Data was available on 1327 patients admitted with ACS. 741 (55.8%) were male and 586 (44.2%) were female. The age range of these patients was from 15 to 120 years. The mean age was 60.21±13.2 years. Age distribution among patients who presented with ACS is given in histogram. 196 patients (14.8%) were in younger age group, which was defined as 45 years or less for this study while 1131 (85.2) patients were more than 45 years old. Patients having 50 years or below were 26.5%. In the young age group who were admitted with ACS 3.6% patients were in 35 years or below, 0.5% were 25 years or below, while only one patient was 15 years old (figure 1).

Among the young patients 99 (51.3%) were male and 97 (48.7%) were female. Among these patients 30 were admitted with UA, 48 with NSTEMI, while 118 had STEMI, out of which 55 had Anterior wall MI, 55 had inferior wall MI, while 8 had lateral wall MI (Table 01). 45 (23%) patients in young age group were diabetic and 151 (77%) were non-diabetic.

![Histogram of Age Distribution of ACS](image)
DISCUSSION

Acute coronary syndrome can present in different forms with unstable angina at one end of the spectrum, and STEMI at the other end. In any form it has a major impact on patient’s life. When it strikes in young age, it results in loss of more productive years of life, affecting both the individual patient and the society as well. We studied the prevalence of ACS in young age group and we found that the prevalence is high in our population when compared with studies from other part of the world, and the pattern is also different in our population. In our study 14.8% patients were 45 years old or younger among patients admitted with ACS, while in ISACS-TC the prevalence is 8%, in Europe it is 8.12%. Indian study shows 10.4% but the age cut-off was 40 years in this study. If we define the young age group as 50 years or less then the prevalence is 26.5% in this age group which is an alarming situation. In all these studies ACS is common in male compared to female, while in our study the prevalence is equal in both male and female. So it appears that there are some new risk factors affecting male and female equally. The pattern of ACS is also different. In all other studies the common presentation is anterior MI, while in our study anterior and inferior MI’s are equally common.

The global perspective of Acute coronary syndrome shows that the burden of ischemic heart disease is shifting towards the low-middle socio economic countries which support our data when compared to high socio economic countries, and this data also support our study that ischemic heart is becoming increasingly common in young population, so we need further work to identify the new risk factors and slow down this process, save our population from this disease in their productive part of life.

CONCLUSION

Acute coronary syndrome is common in young age group in our population as compared to the developed countries, which need further work to identify the risk factors in our population and adapt measure to stop this catastrophe.

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

REFERENCES

Frequency of Worms Infestation in Adult Anemic Patients

Saqib Malik¹, Faheem Ullah², Farhat Naz¹, Syed Hassan Mustafa³, Muhammad Bilal Khatak⁴ and Zahid Irfan Marwat⁵

ABSTRACT

Objective: Among other causes, worm infestation is a common yet usually overlooked in the developing countries. Therefore the purpose of this study was to know its frequency among the anemic patients.

Study Design: Descriptive case series study

Place and Duration of Study: This study was conducted at Department of Medicine, Ayub Teaching Hospital Abbottabad from March 2018 to September 2018.

Materials and Methods: Through non-probability consecutive sampling technique, a sample of 215 patients was observed by using Expected Prevalence: 5.3%, Confidence Level: 95%, Absolute Precision: 3%.

Results: Out of 215 patients, 40% were males while female patients were 60%. Mean ± SD of age was 29 ± 2.77. More over the frequency of worm infestation was found to be 48% percent.

Conclusion: The frequency of worms infestation in our study was found to be forty eight percent of adult patients with anemia in our setup.

Key Words: Worms Infestation, Adult, Anemic

INTRODUCTION

Anemia is defined as reduced blood hemoglobin levels, which is either due to a genetic or acquired alteration in the shape or number of red blood cells.¹ It has numerous causes, some of which include bleeding in the gastrointestinal track or genitourinary track, reduced intake or absorption of iron due to certain gut diseases or medicine, reduced absorption of folic acid and cobalamin, increase hemolysis due to certain genetic or acquired diseases and/or various chronic inflammatory diseases.²

Among other causes, helminths or parasitic worms are also common in developing countries. Throughout human history, parasites have infected humans.³ They have been found to cause anemia either through bleeding in the gastrointestinal (GI) track or by preventing the absorption of important micronutrient.⁴

The global burden of Soil Transmitted Helminths infection has been observed to be somewhat between 5 and 39 million disability-adjusted life years commonly attributed to anemia and/or reduced physical and psychological growth.⁵

Worm manifestations has been found to be associated with poverty and thus has higher prevalence in the under developed and the developing countries of the world compare to the modernized societies.⁶

When compared to the protozoan infections, the prevalence of helminthes intestinal infections have been observed to low i.e. 5.3% compared to 16.7 – 18% worldwide.⁷ Even then, according to one estimation more than one billion people living in the poor countries or living in areas where access to clean water is poor, are infected with one or more helminthes.⁸ Over crowdedness has also been observed to be an important associated factor, thus the high prevalence in India, Pakistan and China.

Among the helminthes, Ascariasis has particular high prevalence with over 1 billion people affected around the globe and over a 100 million people infected in India alone. The disease burden is high in Pakistan as well where it is estimated that more than 20 million people are infested.⁹

In addition to Ascariasis (Ascaris lumbricoides) the three other common parasites are the whipworm (Trichuris trichiura), and two hookworm species (Ancylostoma duodenale and Necator americanus).¹⁰ Keeping in view the enormous burden, World Health Organisation published guidelines in 2011 to control the parasitic infections. They recommended that the antihelminthic drugs such as mebendazole or

¹ Department of Medicine, Ayub Medical College, Abbottabad.
² Medical Officer, Health Department, KPK
³ Junior Consultant, Ayub Teaching Hospital, Abbottabad.
⁴ Department of Medicine, HMC, Peshawar.
⁵ Department of Biochemistry, Noshera Medical College, Noshera.

Correspondence: Saqib Malik, Associate Professor of Medicine, Ayub Medical College, Abbottabad.
Contact No: 0331-574594
Email: saqibmalikdr@hotmail.com

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albendazole should be used periodically to control the soil transmitted infections in endemic areas. Even though numerous studies regarding the estimated prevalence of helminthes infection has been performed worldwide, local data was limited; therefore this study was planned to identify the frequency of worms infestation in an adult patient with anemia in our population. Local data may be used by policy makers, planners and caregivers to implement strategies.

MATERIALS AND METHODS

This study was conducted in the department of Medicine, Ayub Teaching Hospital, Abbottabad from 28/3/2018 to 28/9/2018. It was a descriptive case series and 215 patients, aged between 18 – 50 years, both genders, were selected through non-probability consecutive sampling. Sample size of 215 was calculated using the WHO software using the expected prevalence 3 as 5.3%, confidence Level as 95% and absolute Precision as 3%. Patient with known hemolytic anemia, aplastic anemia, anemia of chronic disorder, lymphomas and leukemias were excluded from the study to control confounding. In Male with Hemoglobin level less than 13.5g/dl and in Female with Hemoglobin level less than 11.5g/dl was labeled as anemia. Similarly an adult patient whose stool R/E becomes positive for any one cysts, ova eggs and worms like ancylostoma duodenale, ascaris lumbricoides, trichuris trichura and Taenia saginata was labeled as worms infested.

After getting approval from the hospital ethics committee, the whole process and the purpose of the study was explained to the patient and a written consent was taken. Next, sample was taken by the investigator and was examined by the microbiologist in Ayub teaching hospital laboratory. All the data was recorded on the Pro forma.

Data was entered and analyzed by using SPSS version 16. Mean and standard deviation was calculated for quantitative variables like Age and Hb level. Frequencies and percentages were calculated for categorical variables like gender, worm’s infestation. Effect modifiers like age, gender and stool R/E findings were controlled through stratification. Post stratification Chi-square test was applied by taking p≤0.05 as significant.

RESULTS

In this study, a total of 215 patients were studied to determine the frequency of worms infestation in adult anemic patients. Out of 215 patients, 84(39%) patients were aged between 20 and 30 years, 77(36%) patients were aged between 31 and 40 years, while there were 54(25%) patients above 41 years of age. Mean age and SD was 29 ± 2.77. There were 86(40%) males and 129(60%) female.

Frequency of worm infestation in 215 patients was analyzed as 103(48%) patients were infested with worms compared to 112(52%) patients who were found to have no worm infestation. As regards anemia, 144(67%) had Hb between 8 – 10 g/dl while 71 patients (33%) had Hb ranged 11- 12 g/dl with mean± SD as 10 ± 1.38 g/dl.

103 patients were found to be worm infested out of which out of which 41 were males and 62 were females (P value = 0.9555). Other results are shown in the tables.

**Table No. 1: Stool R/E findings (n=103)**

<table>
<thead>
<tr>
<th>Stool R/E findings</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cysts</td>
<td>34</td>
<td>33%</td>
</tr>
<tr>
<td>Ova</td>
<td>17</td>
<td>16%</td>
</tr>
<tr>
<td>Eggs</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>Larvae</td>
<td>26</td>
<td>25%</td>
</tr>
<tr>
<td>Cysts</td>
<td>2</td>
<td>12%</td>
</tr>
<tr>
<td>Ancylostoma duodenale</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Ova</td>
<td>2</td>
<td>12%</td>
</tr>
<tr>
<td>Ascaris lumbricoides</td>
<td>8</td>
<td>56%</td>
</tr>
<tr>
<td>Eggs</td>
<td>1</td>
<td>9%</td>
</tr>
<tr>
<td>Trichuris trichura</td>
<td>1</td>
<td>9%</td>
</tr>
<tr>
<td>Taenia saginata</td>
<td>3</td>
<td>23%</td>
</tr>
<tr>
<td>Total</td>
<td>103</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Table No. 2: Stratification of worm infestation w.r.t age (n=215)**

<table>
<thead>
<tr>
<th>Worm Infestation</th>
<th>20-30 years</th>
<th>31-40 years</th>
<th>41-50 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40</td>
<td>37</td>
<td>26</td>
<td>103</td>
</tr>
<tr>
<td>No</td>
<td>44</td>
<td>40</td>
<td>28</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>77</td>
<td>54</td>
<td>215</td>
</tr>
</tbody>
</table>

P value was 0.9976

**Table No. 3: Stratification of worm infestation w.r.t stool R/E findings (n=215)**

<table>
<thead>
<tr>
<th>Worm Infestation</th>
<th>Cysts</th>
<th>Ova</th>
<th>Eggs</th>
<th>Larvae</th>
<th>Worms</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>34</td>
<td>17</td>
<td>12</td>
<td>26</td>
<td>14</td>
<td>103</td>
</tr>
<tr>
<td>No</td>
<td>35</td>
<td>19</td>
<td>15</td>
<td>28</td>
<td>15</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>36</td>
<td>27</td>
<td>54</td>
<td>29</td>
<td>215</td>
</tr>
</tbody>
</table>

P value was 0.9957

DISCUSSION

Worm infestation is a pandemic health problem, effecting billions of people around the world. More over the disease is more prevalent in the developing countries compared to the western world. Among the parasitic infections, Ascaris holds more importance due to its higher prevalence. According to one estimate, it has affected more than a billion people worldwide. Similarly its prevalence has been found to be over 140 million, 86 million and 21 million in India, china and...
Pakistan respectively, making it one of the most prevalent health problem in these countries. Keeping in view such high figures, this study was carried out to know the frequency of one it’s complications – anemia. In our study, there were a total of 215 patients out of which there were 86(40%) males and 129(60%) female. More over the frequency of worm infestation was found to be 48% percent. In addition, we found that Ascaris lumbricoides was the most common (56%), followed by Taenia saginata (23%), Ancylostoma duodenale (12%) and Trichuris trichura (9%).

Mona et al in 2003 also studied the frequency of worm manifestations in children in Abbottabad and reported a much higher frequency of 86% compared to our findings of 48%. One reason may be that we studied the adult population compared to the much younger population studied by Mona et al. In another study conducted in Kashmir valley, the frequency of worm manifestation was found as 7.18%. Ascariasis was found to be the most dominant infection accounting for 68.3% of all manifestations followed by Trichuris trichura and Taenia saginata (4.6%). Another study reported a frequency of 39%. Worldwide different countries have reported a wide variation in the prevalence of worm manifestations. In Afghanistan the prevalence was found to be 47.2%, while in Nepal and Bangladesh it was found as 66.6% and 53% respectively.

We observed that Taenia Saginata was found in 23% of patients infested with worms. Our findings were, however, considerably higher compare to the frequency of Taenia saginata reported by other studies i.e. 3.45% in Azad Kashmir, 0.4% in Vehari and 4.6% in the Kashmir province of India. One reason for high frequency of Taenia in our study population may be explained by the fact that beef kebabs, which is partially cooked cow meat, is a common cuisine eaten regularly by the local people. Since the cysts of Taenia saginata are found in cow muscles and survives in partially cooked meat, therefore they are found in higher frequency in our locality. Health authorities need to take appropriate measures to address this issue.

Khan et al studied the proportion of various worm manifestations in a study group related to education in Swat. He found that Ascaris lumbricoides was most common worm infestation with 39.8% of frequency followed by Trichuris trichura (19.1%). He reported that Taenia Saginata was found in 12.8% which is considerably lower than our findings. In addition, he also reported the frequency of Enterobius vermicularis, Hymenolepis nana and Giardia species (1.69%) while we did not observe the frequency of these parasites. Our study had certain limitations. Firstly, our sample size was small, and we recommend that a larger sample be studied so that the health problem can be more addressed. Secondly, we did not study the frequency of other worms which are also found in our area. Finally, we did not compare the severity of anemia with the type of worm manifestation.

**CONCLUSION**

Our study concludes that the incidence of worms infestation in adults anemic patients was found to be forty eight percent in our setup. In addition, we found that the frequency of Taenia species is much higher in our setup and therefore we provide recommendation to the health authorities to conduct further surveys to confirm our findings and to take appropriate measures to control the spread of the species.

**Author’s Contribution:**

Concept & Design of Study: Saqib Malik

Drafting: Faheem Ullah, Farhat Naz

Data Analysis: Syed Hassan Mustafa, Muhammad Bilal, Khatak, Zahid Irfan, Marwat

Revisiting Critically: Saqib Malik, Faheem Ullah

Final Approval of version: Saqib Malik

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

**REFERENCES**


Effectiveness of Triple Combination Cream and 30% Glycolic Acid Peel Versus Triple Combination Cream alone in the Treating Epidermal Melasma

Kashif Kamal¹, Muhammad Majid Paracha², Nauman Idrees³, Rabeeka Bakhtiar³, Irfan Ullah⁴ and Muhammad Nadeem²

ABSTRACT

Objective: To evaluate the effectiveness of 30% glycolic acid peel and triple combination cream (Hydroquinone, Tretinoin and Topical Steroids) versus triple combination cream in the treatment/therapy of epidermal melasma.

Study Design: Randomized controlled trial study.

Place and Duration of Study: This study was conducted at the Dermatology Unit Lady Reading Hospital from March 2016 to September 2016.

Materials and Methods: Total 178 patients having epidermal melasma were allocated at random into two equivalent groups by lottery process. Melasma was diagnosed with woods lamp examination and clinically and also having MASI score >12. Group A patients were treated with 30% glycolic acid peel and triple combination cream. Group B Patients were treated with triple combination cream alone. Results were assessed after 4 weeks by calculating the MASI score. Chi square test of statistics was employed to compare the efficacy in two groups and p-value < 0.05 was considered for significance of parameters.

Results: Group A had 20 (22.47%) male and 69 (77.53%) female patients. On the other hand, group B had 15 (16.85%) males and 74 (83.15%) female patients. Group A had 34 (38.32%) patients of <26 years, 47 (52.81%) of 26-40 years and 8 (8.98%) above 40 years. Group B had 23 (25.85%) patients of less than 26 years, 53 (53.56%) of 26-40 years and 13 (14.61%) above 40 years. In group A, 84 (94.38%) patients and in group B 71 (79.77%) patients showed significant improvement.

Conclusion: This study shows that treatment with 30% Glycolic acid peel and Triple combination cream is more efficient than triple combination cream therapy alone.

Key Words: Triple Combination Cream, Glycolic Acid Peel, Epidermal Melasma

INTRODUCTION

Melasma is pigmentary disorder of face observed in people exposed to extreme UV radiations. It mostly effects females.¹,² The literal source of melasma is unidentified, however oral contraceptives anti-epileptic and phototoxic drugs, pregnancy, genetic factors, cosmetics can cause it.³,⁴

¹ Department of Dermatology, DHQ Karak.
² Department of Dermatology, Lady Reading Hospital, Peshawar.
³ Department of Medicine, MTI/HMC, Peshawar.
⁴ Department of Neurology, MMH, DI Khan

Correspondence: Kashif Kamal, Medical Officer, Dermatology, DHQ, Karak.
Contact No: 0331-9560947
Email: dr.kashif.khattar@gmail.com

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There are four kinds of melasma. Epidermal, Mixed, Dermal, and intermediate type.⁵,⁶ Other treatment options for melasma are kojic acid, azelaic acid, hydroquinone, trichloroacetic acids, tretinoin, resorcin, corticosteroids, flavonoid extract, glycolic acid, IPL and chemical peels.⁷,⁸,⁹

Topical therapy/treatment with a triple combination agent containing tretinoin 0.05% hydroquinone 4 percent and fluocinoloneactonides 0.01% has proved to be effectual for examining melasma patients and followed by glycolic acid peel.¹⁰,¹¹ Hydroquinone, a tyrosinase inhibitor is a rate restraining enzyme in production of melanin. Topical tretinoin inhibit tyrosinase transcription, stimulates keratinocytes turnover, put a stop to hydroquinone oxidation, its better penetration and decreases melanosomes transfer. Topical steroid inhibit production of melanin by lessening cellular metabolism Glycolic acid peel along with peeling off the pigment also increases the depth of penetration of topical therapy.¹⁰,¹¹
The underlying principle of this study is to compare/evaluate the usefulness of Triple combination cream and Glycolic acid peel versus Triple combination cream in treating melasma.

**MATERIALS AND METHODS**

The trial conducted was Randomized controlled in Dermatology unit, Lady Reading Hospital (LRH) Peshawar from 24 March, 2016 to 24 Sept, 2016. Sample size was 89 in all groups using 92.5% effectiveness of 30% triple combination cream and glycolic acid peel, 77.5%of triple combination cream alone, confidence level of 95% and 90 percent power of test calculated using WHO formula of Goldberg's equation. Non probability consecutive sampling was taken as a sampling technique. Patients with melasma having Fitzpatrick skin type (I-VI),MA SI score of ≥12 and age 18-45 years were included while Patients who got treatment of melasma in last3 months, pregnant or lactating mothers, on hormonal or steroid treatment or have received previous radiotherapy were excluded from the study. Clinically epidermal melasma was identified and with woods lamp examination. This particular study has been carried out after approval from the hospital ethical and research committee and written consent was taken. The benefits and purpose of the work were elaborated to the patients. Each and every patient was subjected to comprehensive history and complete clinical examinations. After this, they were divided randomly into two groups through lottery technique. Group A patients were subjected to 30% glycolic acid peel once/two weeks and cream having triple combination used daily at night while group B patients were advised triple combination cream alone once at night. Sun block was advised to all patients during treatment period. Efficacy was measured through MASI scoring with regard to improvement/refinement in least score of 10 in MASI at four weeks follow up.

**RESULTS**

Gender wise division confirmed that in group A, 20(22.47%) were males and 69(77.53%) were females while group B consisted of 15(16.85%) males and 74(83.15%) females. Gender wise distribution among the groups appeared insignificant with p-value of more than 0.05 as shown in table 1. Average age was 28.56+8.78 years with the age range of 18 to 45 years. Group A had 34(38.32%) patients of <26 years, 47(52.81%) of 26 to 40 years and 8(8.89%) patients having age ≥40 years. Likewise, Group B comprised of 23(25.85%) patients of <26 years, 53(55.62%) patients of 26 to 40 years and 13(14.61%) patients were above 40 years. Age wise distribution among the groups was insignificant as shown in table 2.In group A, 84(94.38%) patients showed efficacy while in group B 71(79.77%) patients showed improvement. Efficacy wise distribution appeared significant having p-value 0.001 as appeared in Table 3. This signifies that 30% glycolic acid peel and triple combination treatment had greater efficiency than the triple combination solely in the therapy of epidermal melasma.

<table>
<thead>
<tr>
<th>Table No.1: Gender wise assessment/comparison of the groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Group A Total= 89</td>
</tr>
<tr>
<td>Group B Total= 89</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
**DISCUSSION**

Melasma is a widespread pigmentation disorder and there is no single satisfactory treatment proven significant so far. Results of my study has shown that combination of 30% Glycolic acid peel & Triple Combination Cream is the most useful treatment for melasma. Chaudhary et al. and Dayal et al. exhibited comparable outcome and showed that sequential treatment along with glycolic acid peel and trichloroacetic acid more useful than sequential treatment with Triple combination cream alone in patients with melasma. 

Ghulam et al. and Mujtaba et al. also proved that glycolic acid peel plus triple combination is more efficacious as compared to triple combination alone in melasma.  

Study conducted by Chan in 9 centers (Hong Kong, Korea, Singapore and the Philippines) on 260 South East Asian applicants also showed comparable results with our study. 

In our study, mean age of 28.56 years, which is comparable with the research of Soliman et al. and Silonie et al. that exhibited mean age of 34.27 ± 5.8 and 27.5 years respectively. In our study melasma was common in females (80.3%) comparable to the Bari et al. showing male to female ratio of 1:3.

**CONCLUSION**

The study shows that treatment with 30% Glycolic acid peel & Triple combination cream alone in the medication of epidermal melasma.

**Author’s Contribution:**

Concept & Design of Study: Kashif Kamal
Drafting: Muhammad Majid Paracha, Nauman Idrees

Data Analysis: Rabeeka Bakhtiar, Irfan Ullah, Muhammad Nadeem

Revisiting Critically: Kashif Kamal, Muhammad Majid Paracha

Final Approval of version: Kashif Kamal

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

**REFERENCES**

8. Iraji F, Tagmairiahi N, Gavidnia K. Comparison between the efficacy of 10% zinc sulfate solution
High Voltage Electrical Injuries of Hand in Children Following Misuse of a Stainless Steel Wiper

Firdous Khan¹, Muhammad Shadman², Ihsan Ullah Khan¹, Muhammad Waqas¹ and Muhammad Tahir¹

ABSTRACT

Objective: To determine the association of common home floor wiper made up of stainless steel in high voltage electrical injuries of hand in children and to suggest solution for its prevention.

Study Design: Descriptive / case series study

Place and Duration of Study: This study was conducted at the Burns & Plastic Surgery Centre, Hayatabad Medical Complex Peshawar from April 2016 to October 2018.

Materials and Methods: This descriptive case series study was carried out on 15 children ≤ than 12 years who presented with high voltage electrical injury to the hand. Cases were admitted and resuscitated in emergency departments and further treated in a specialized hand unit. Thorough history including type and mechanism of injury was taken and examination findings were recorded. Photographs of the involved hand and wrist were taken and the parents were counseled for multi-stage operation.

Results: There were 11 male and 4 female patients with an average age of 8.5 years. In all cases, mechanism of injury was contact of stainless steel wiper by the children with high tension electrical transmission lines while playing on roof top. In 4 cases, emergency faciotomy was performed somewhere else while in the remaining 11 cases, proper faciotomy of forearm and hand was performed by the primary surgeon. Hand involvements were 12 cases on the right and 3 cases on the left sides. Main procedures carried out were serial debridement (average 4 per patient), groin and abdominal flap coverage (13 patients), median and ulnar nerve grafting (9 patients), tendon transfers for median and ulnar nerves (11 patients), arthrodesis of wrist and CMC joints (4 Patients) and amputation (2 patients). The total span of treatment for reconstruction was on average 18 to 24 months.

Conclusion: In our series, we found out that use of floor stainless steel wiper is the major cause of high voltage electrical injuries in pediatric population while playing on rooftop. It is recommended that use of stainless steel wiper should be discouraged and may be replaced by rubber and plastic or wood wipers to decrease the incidence of high voltage trauma. Also the bare electrical transmission lines should be insulated by plastic or rubber pipes when they run near to the roof top or boundary walls.

Key Words: Voltage, Electrical injury, debridement, grafting

INTRODUCTION

Electrical injuries are one of the most common causes of occupational deaths with incidence of 0.05% among all occupational deaths ¹,². Reported electrical burns admissions in burn centers are reported to vary from 0.04-32% ³. Although high voltage burns commonly occur in the occupational settings, in our country, a large number of domestic cases of high voltage electrical burns are on the rise⁴. The inner cities of Pakistan are densely populated areas with very old buildings. High voltage electrical lines often cross over the roof tops of these buildings. One of the common causes of the high voltage electrical injuries is exposure to these electrical lines over the roof tops. In the previous few years, a lot of patients have presented to us with high voltage electrical injuries. The common mechanism of injury was accidentally touching the metal rods of cleaning wipers with the electric power lines. The metal rods are used to get the clothes off the drying lines. It is also used by kids to dislodge flying kites stuck in the nearby trees. In these injuries the hand is primary organ that is damaged by the high voltage current. Our aim is to

¹ Department of Burns & Plastic Surgery Centre, Hayatabad Medical Complex, Peshawar.
² Department of Plastic Surgery, Khyber Teaching Hospital, Peshawar.

Correspondence: Dr. Firdous Khan, Assistant Professor, Burns & Plastic Surgery Centre, Hayatabad Medical Complex, Peshawar, Pakistan.
Contact No: 0321-9099363
Email: drfirdouskhansu@gmail.com

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focus on these injuries and to find out what kind of hand injuries occur because of high voltage electrical current.

MATERIALS AND METHODS

This descriptive case series study was carried out at Burns & Plastic Surgery Centre, Hayatabad Medical Complex, Peshawar, from April 2016 to October 2018. Patients with age less than 12 years who sustained hand injuries due to high voltage electric current were included in this case series. Cases were admitted and resuscitated in emergency departments and further treated in a specialized hand clinic. Thorough history including type and mechanism of injury was taken and examination findings were recorded. Photographs of the involved hand and wrist were taken and the parents were counseled for multi-stage operations.

RESULTS

There were 11 male and 4 female patients with an average age of 8.5 years. In all cases, mechanism of injury was contact of stainless steel wiper by the children with high tension electrical transmission lines while playing on roof top. In 4 cases, emergency faciotomy was performed somewhere else while in the remaining 11 cases, proper faciotomy of forearm and hand was performed by the primary surgeon.

![Figure 1](image1.png)

**Figure No.1: High voltage electrical injury caused by stainless steel wipers in three different children**

![Figure 2](image2.png)

**Figure 2 (a) Common stainless steel wiper**

**Figure 2 (b): Plastic floor cleaning wiper**

Hand involvements were 12 cases on the right and 3 cases on the left sides. Main procedures carried out were serial debridement (average 4 per patient), groin and abdominal flap coverage (13 patients), median and ulnar nerve grafting (9 patients), tendon transfers (11 patients), arthrodesis of wrist and CMC joints (4 Patients) and amputations (2 patients). The total span of treatment for reconstruction was on average 18 to 24 months.

DISCUSSION

High voltage electrical burns are grave injuries. The recovery is long and protracted and may require aggressive debridement. High voltage electrical injuries (HVEI) in children put them at high risk of amputation. We did amputations in 13% of total cases.

Due to HVEI, the damage to the underlying tissue is greater than the findings on clinical examination. The patient may need immediate escharotomy or faciotomy at the time of presentation. Deep muscle compartments must be released to achieve optimal blood flow to the hand. Skin coverage is the next important step after initial treatment and debridement. We mostly used groin flap and abdominal flaps to cover the skin defects of the hand. Some centers use the groin and abdominal flaps while some have reported using them along-side the free flaps to cover larger defects. A simple free tissue transfer is also commonly reported in the literature and is becoming the mainstay of treatment. One study reported the use of Metriderm with skin graft for soft tissue defect of hand. The benefit of this technique is that it is a single stage procedure with less donor site morbidity.

Most of our patients needed a nerve graft. Literature has reported loss of neuronal function even in low voltage injuries. Patients with loss of nerve function lose sensations and function of intrinsic muscles of the hand. This presents a bleak picture for future recovery of the hand function. Post-operative physiotherapy is important in these patients and may help recover some functions.

The recovery of children with high voltage electrical injuries (HVEI) has a long course and the outcome is usually sub-optimal. Public education campaigns, public safety and safe living environments has reduced incidence of such injuries over time. There is also a
increase in the incidence of amputations in such injuries due to better treatment options.\textsuperscript{15}

CONCLUSION

In our series, we found out that use of floor stainless steel wiper by the children while playing on rooftop is the major cause of high voltage electrical injuries in pediatric population. It is recommended that use of stainless steel wiper should be discouraged and may be replaced by rubber and plastic or wood wipers to decrease the incidence of high voltage trauma. Also the bare electrical transmission lines should be insulated by plastic or rubber pipes when they run near to the roof top or boundary walls.

Author’s Contribution:
Concept & Design of Study: Firdous Khan
Drafting: Waqas Hayat
Data Analysis: Firdous Khan, Ihsan Ullah Khan
Revisiting Critically: Muhammad Shadman
Final Approval of version: Muhammad Tahir

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

REFERENCES

Obstetrical Hysterectomy - Is a Life Saving Option

Aneela Gul Shaikh, Abdul Malik Sangri, Kulsoom Azad Lashari, Fozia Unar, Bushra Noor and Sajida Parveen

ABSTRACT

Objective: To evaluate the frequency, indications, maternal morbidity and mortality associated with obstetrical hysterectomy.

Study Design: Descriptive / cross sectional study.

Place and Duration of Study: This study was conducted at the Department of obstetrics and Gynecology KMC, Khairpur Mir’s from August 2014- July 2017.

Materials and Methods: All patients operated for obstetrical hysterectomy during study period included in study. This was a retrospective study. Data was collected from yearly maintained registers on proforma. The parameters analyzed were age, parity, indications, morbidity & mortality by SPSS V- 21.

Results: Total deliveries during study period were 17101. Total number of obstetrical hysterectomy during study period was 75 cases. This giving an incidence of 0.43% that is 1 in 228 deliveries. Mainly 38 (50.6%) patients were belongs to age group 30 - 40 years. 64 (85%) women were multi parous and only 11 (15%) were primigravida. Most common indication of obstetrical hysterectomy was morbid adherent of placenta (33.3%) than ruptured uterus (30.6%), abruptio placenta (18.6%), uterine atony (16%) and secondary PPH (1.3%).

Regarding intra operative complication 2 (2.6%) got bladder injury. 1(1.3%) patients needed repeat laprotomy due to bleeding. 32(42.6%) patients developed post operative pyrexia, 12(16%) developed wound infection, 10 (13.3%) patients developed post operative paralytic ileus. 24 (32%) patients required ICU admission. 3 (4%) patients died due to excessive haemorrhage. 1 (1.3%) developed vesicovaginal fistula.

Conclusion: The study conclude that multiparity is the risk factor for obstetrical hysterectomy. Morbid of adderentof placenta is the commonest indication due to rising trends of caesarean section. It is necessary obstetrician should avoid unnecessary cesarean section in primigravida.

Key Words: Obstetrical Hysterectomy, Life Saving Option

INTRODUCTION

Obstetrical hysterectomy is defined as removal of uterus either at the time of cesarean section or following vaginal delivery or within the puerperium period. It is one of the most risky and dramatic operation in modern obstetric. Emergency obstetrical hysterectomy is usually undertaken for life threatening obstetrical hemorrhage and is therefore considered as a “near miss” event. The first operation was performed in North America by Horatio storer, then by Lawson in UK.

Department of Obs. & Gynae, Khairpur Medical College, Sindh

Correspondence: Aneela Gul Shaikh, Assistant Professor of Obs. & Gynae, Khairpur Medical College, Sindh.
Contact No: 0308-2290540
Email: draneela.jabbar@yahoo.com

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The incidence of obstetrical hysterectomy is around 0.6 to 2.28 per 1000 birth in the USA. In developing countries the incidence is more i.e 0.4 to 0.7 %. The incidence is varies from center to center depending on available facilities at peripheral center as antenatal care, intranatal monitoring, obstetrical expertise, blood transfusion facility and efficient transport. Obstetrical hysterectomy has a definitive role in developing countries where the advance modalities like uterine artery embolization to prevent PPH is not available. On one hand it is the last resort to save a mother’s life, and on the other hand the mother’s reproductive capability is sacrificed. Many times it is very difficult decision & require good clinical judgment. Proper timing & meticulous care may reduce or prevent maternal complication.

In the past the most common indication of Emergency obstetrical hysterectomy was uterine atony & uterine rupture but recently morbid adherent of placenta & placenta previa a major indication. Maternal mortality with placenta percreta due to haemorrhage can be as high as 10 %. Elective pre operative planning by obstetrician & anesthetist in case of morbid adherent of placenta can reduce the maternal morbidity and mortality rate by minimizing the need for
transfusion of blood products. Haemorrhage remains a significant cause of maternal mortality in the UK and worldwide. The maternal outcome greatly depends on timely decision, the surgical skills and the speed of performing obstetrical hysterectomy. Because of the high caesarean section rate globally result in rise of placenta previa & morbid adherent placenta leads to increasing incidence of obstetrical hysterectomy. Against this back ground we aimed to evaluate the frequency, indications, maternal morbidity and mortality associated with obstetrical hysterectomy.

MATERIALS AND METHODS

All patients operated for obstetrical hysterectomy during study period of three years from August 2014 to July 2017 included in the study. This was a retrospective study. Data was collected from yearly maintained registers on proforma. The parameters analyzed were frequency, age, parity, indications, morbidity & mortality by SPSS V- 21.

RESULTS

Total deliveries during study period were 17101. Total number of obstetrical hysterectomy during study period was 75 cases. This giving an incidence of 0.43% that is 1 in 228 deliveries. Mainly 38 (50.6%) patients were belongs to age group 30 - 40 years. 64 (85%) women were multi parous and only 11 (15%) were primigravida. Most common indication of obstetrical hysterectomy was morbid adherent of placenta (33.3%) than ruptured uterus (30.6%), abruptio placenta (18.6%), uterine atony (16%) and secondary PPH (1.3%).

Table No.1: Age Distribution

<table>
<thead>
<tr>
<th>Age Distribution</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20</td>
<td>2</td>
<td>2.6%</td>
</tr>
<tr>
<td>20-30</td>
<td>31</td>
<td>41.3%</td>
</tr>
<tr>
<td>30-40</td>
<td>38</td>
<td>50.6%</td>
</tr>
<tr>
<td>&gt;40</td>
<td>04</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gravidity</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primigravida</td>
<td>11</td>
<td>14.6%</td>
</tr>
<tr>
<td>Multipara</td>
<td>64</td>
<td>85%</td>
</tr>
</tbody>
</table>

Table No.2: Indications of abdominal hysterectomy

<table>
<thead>
<tr>
<th>Indications of abdominal hysterectomy</th>
<th>No:</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placenta previa</td>
<td>25</td>
<td>33.3%</td>
</tr>
<tr>
<td>Ruptured uterus</td>
<td>23</td>
<td>30.6%</td>
</tr>
<tr>
<td>Abruptio placenta</td>
<td>14</td>
<td>18.6%</td>
</tr>
<tr>
<td>Uterine atony</td>
<td>12</td>
<td>16%</td>
</tr>
<tr>
<td>Secondary PPH</td>
<td>1</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

Regarding intra operative complication 2 (2.6%) got bladder injury. 1(1.3%) patients needed repeat laprotyom due to bleeding. 32(42.6%) patients developed post operative pyrexia, 12(16%) developed wound infection, 10 (13.3%) patients developed post operative paralytic ileus. 24 (32%) patients required ICU admission. 3 (4%) patients died due to excessive haemorrhage. 1 (1.3%) developed vesicovaginal fistula.

Table No.3: Complications of abdominal hysterectomy

<table>
<thead>
<tr>
<th>Complications of abdominal hysterectomy</th>
<th>No:</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra Operative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bladder injuries</td>
<td>02</td>
<td>2.6%</td>
</tr>
<tr>
<td>Post-Operative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pyrexia</td>
<td>32</td>
<td>42.6%</td>
</tr>
<tr>
<td>Wound infection</td>
<td>12</td>
<td>16%</td>
</tr>
<tr>
<td>Paralytic ileus</td>
<td>10</td>
<td>13.3%</td>
</tr>
<tr>
<td>Repeat laprotyom due to bleeding</td>
<td>01</td>
<td>1.3%</td>
</tr>
<tr>
<td>ICU admission</td>
<td>24</td>
<td>32%</td>
</tr>
<tr>
<td>Mortality</td>
<td>03</td>
<td>4%</td>
</tr>
<tr>
<td>Delayed Complication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urinary fistula</td>
<td>1</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

DISCUSSION

During the study period of three years, total numbers of deliveries were 17101. Total Obstetrical hysterectomies were 75 giving an incidence of 0.4% & 1 in 228 deliveries. It is lower than the incidence that reported in Columbia 0.8 %, Nigeria 0.5% but it is higher than China 0.2% & little bit higher than pervious study conducted in Pakistan 0.27 %. Incidence of obstetrical hysterectomy almost similar in a study conducted at Multan 1 in 287 patients /0.38% . Study conducted at UK showing the incidence is approximately 1/2500 birth. The incidence is lower in developed countries due to good antenatal care, good nutritional status, high literacy rate & social factors. In our study (85%) were multi parous. This is similar to study conducted at India.

In our study most common indication of obstetrical hysterectomy was morbid adherent of placenta (33.3%), followed by rupture uterus (30.6%), abruptio placenta, uterine atony and secondary PPH. It is reported in the literature that the incidence of obstetrical hysterectomy due to uterine atony had decline from 42% to 29.2% and incidence to abnormal placentation increased from 25.6% to 41.7%. Our hospital is an important referral center in this area so most of the patients with previous cesarean section and low lying placenta referred from surrounding areas. Since last decades reports showed that Bermingham 50%, Kuwait 64%, in Italy 55% cases of obstetrical hysterectomy were due to placental problems. The most common complication was post operative pyrexia 32(42.6%). This is similar to study conducted at Ahmedabad. This is because most of the patients were un booked, received multiple blood transfusion.
Intra operative complication 2 (2.6%) developed bladder injury during procedure. This is similar to a study conducted at Multan showed urinary tract injury in 3 patients (14.2%)\(^3\). 1 (1.3%) patients needed repeat laparotomy due to bleeding. 24(32%) patients required ICU admission. 12 (16%) developed wound infection 10(13.3%) developed post operative paralytic ileus.

In our study 3(4%) patients expired during procedure or in immediate post operative period. A Study conducted at Ayoub Teaching Hospital Abbottabad showed maternal mortality was 10.5%\(^8\).Another study conducted at Kalkatta showing maternal mortality in obstetrical hysterectomy is 11.1%\(^7\).Another study conducted at India showing mortality is 9.7%\(^2\). The morbid state of patient at the time of obstetrical hysterectomy is likely responsible for the high maternal mortality rate than the operative procedure itself. Timing is important for good outcome.

**CONCLUSION**

The study conclude that multiparity is the risk factor for obstetrical hysterectomy. Morbid of adherentof placenta is the commonest indication due to rising trends of caesarean section. It is necessary obstetrician should avoid unnecessary cesarean section in primigravida. It is also necessary that the policy makers should take action against un skilled birth attendants to reduce the incidence of obstetrical hysterectomy due to ruptured uterus.

**Author’s Contribution:**

- **Aneela Gul Shaikh**

**Concept & Design of Study:**

- Abdul Malik Sangri
- Kulsoom Azad Lashari

**Drafting:**

- Fozia Unar, Bushra
- Noor, Sajida Parveen

**Data Analysis:**

- Aneela Gul Shaikh
- Abdul Malik Sangri

**Revisiting Critically:**

- Aneela Gul Shaikh

**Final Approval of version:**

- Aneela Gul Shaikh

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

**REFERENCES**


Frequency of Neonatal Thrombocytopenia in Pregnant Women Complicated by Idiopathic Thrombocytopenia

Fehmida Umar and Zubia Bugti

ABSTRACT

Objective: To find out the frequency of neonatal thrombocytopenia in pregnant women complicated by idiopathic thrombocytopenia.

Study Design: Cross sectional survey

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynecology Sandeman Provincial Hospital Bolan Medical Complex Hospital Quetta from 15th January 2019 to 30th October 2019.

Materials and Methods: After approval from the ethical committee of the institution 60 pregnant patients of age range between more than 18 and less than 35 diagnosed idiopathic thrombocytopenia on laboratory investigation with platelets <100-10.

Results: The mean age of the patients included in the study was 32.53 ± 3.82 years [range 18 –35]. There were 34(56.67%) patients of age range of 31-35 years, 20 (33.33%) patients of age range of 26 –30 years, 6 (10%) patients of age range of 18 –25 years, 2(45%) were between 32-36 weeks of gestation, 24 (40 %) were between 37-40 weeks; and 9(15%) were recorded with >40 weeks of gestation, frequency of neonatal thrombocytopenia was recorded in 33(55%) of cases, 14(42.43%) cases were with severe thrombocytopenia, 11(33%) had moderate and 8(24.24%) mild anemia.

Conclusion: The frequency of neonatal thrombocytopenia is high among patients with in pregnant women complicated by idiopathic thrombocytopenia.

Key Words: Thrombocytopenia, pregnant women complicated idiopathic thrombocytopenia, frequency, neonatal thrombocytopenia


INTRODUCTION

Idiopathic Thrombocytopenic Purpura (ITP) is an acquired thrombocytopenia without other clear cause of the thrombocytopenia. It may result from antiplatelet antibodies which can accelerate clearance and destruction of opsonized platelets by the reticuloendothelial system. In addition, antiplatelet antibodies also target antigens on megakaryocytes so that platelet production is suppressed.1

Compared to an ITP diagnosis during pregnancy, a diagnosis of ITP before pregnancy may indicate a higher risk for obstetric complication, such as fetal loss or stillbirth, premature delivery.2 Kasai et al, found that gestational thrombocytopenia with platelet counts of <10 × 109/L is common in twin pregnancies.3

Fetal and neonatal immune thrombocytopenia is caused by maternal immunoglobulin G crossing the placenta and destroying fetal platelets. Two main forms are described. The autoimmune condition is related to maternal immune thrombocytopenia, while the alloimmune form, commonly named fetal and neonatal alloimmune thrombocytopenia, is due to transplacental passage of specific antibodies against fetal platelets exhibiting antigens inherited from the father. The incidence of fetal and neonatal intracranial hemorrhage in these 2 conditions differs widely, of 10% to 30% in fetal and neonatal alloimmune thrombocytopenia and 0% to 2.9% in the autoimmune form, respectively.4

MATERIALS AND METHODS

Between January 2019 and October 2019 a cross section (Descriptive) study was carried out in department of Gynecology and Obstetrics, Bolan Medical College/ Sandeman Provincial Hospital Quetta, after approval from the ethical committee of the institution 60 pregnant patients of age range between more than 18 and less than 35 diagnosed idiopathic thrombocytopenia on laboratory investigation with platelets <100-10. Infants born to mothers with thrombocytopenia due to other causes such as SLE, Pre-eclampsia, Raised Blood Pressure > 140/90.
RESULTS

In this study, a total of 60 patients were recruited after fulfilling the inclusion/exclusion criteria to find out the frequency of neonatal thrombocytopenia in pregnant women complicated by idiopathic thrombocytopenia. The mean age of the patients included in the study was 32.53 ± 3.82 years [range 18–35]. There were 34 (56.67%) patients of age range of 31-35 years, 20 (33.33%) patients of age range of 26 – 30 years, 6 (10%) patients of age range of 18 – 25 years.

Table No. 1: Distribution of patients by age (n=60)

<table>
<thead>
<tr>
<th>Age in years</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>06</td>
<td>10</td>
</tr>
<tr>
<td>26-30</td>
<td>20</td>
<td>33.33</td>
</tr>
<tr>
<td>31-35</td>
<td>34</td>
<td>56.67</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Mean and SD: 32.53 ± 3.82

Patients were also distributed according to gestational age. There were 27 (45%) were between 32-36 weeks of gestation; 24 (40%) were between 37-40 weeks; and 9 (15%) were recorded with >40 weeks of gestation.

Table No. 2: Gestational age of the subjects (n=60)

<table>
<thead>
<tr>
<th>Gestational age (in weeks)</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>32-36</td>
<td>27</td>
<td>45</td>
</tr>
<tr>
<td>37-40</td>
<td>24</td>
<td>40</td>
</tr>
<tr>
<td>&gt;40</td>
<td>09</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Frequency of neonatal thrombocytopenia was recorded in 33 (55%) of cases while 27 (45%) of neonates had no thrombocytopenia.

Table No. 3: Frequency of neonatal thrombocytopenia in pregnant women complicated by idiopathic thrombocytopenia (n=60)

<table>
<thead>
<tr>
<th>Neutal thrombocytopenia</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33</td>
<td>55</td>
</tr>
<tr>
<td>No</td>
<td>27</td>
<td>45</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Frequency of severity of neonatal thrombocytopenia was stratified according to mild, moderate and severe, 14 (42.43%) cases were found with severe thrombocytopenia, 11 (33%) had moderate and 8 (24.24%) had mild anemia.

Table No. 4: Frequency of severity of neonatal thrombocytopenia (n=33)

<table>
<thead>
<tr>
<th>Severity</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>08</td>
<td>24.24</td>
</tr>
<tr>
<td>Moderate</td>
<td>11</td>
<td>33.33</td>
</tr>
<tr>
<td>Severe</td>
<td>14</td>
<td>42.43</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>

DISCUSSION

ITP during pregnancy isn’t considered a heavy risk of perinatal bleeding, but may cause moderate thrombocytopenia in neonate. In mothers with ITP, the danger of thrombocytopenia is merely 10%, with no over 1% risk of in utero ICH. The incidence of ITP is estimated at 0.1-1 in 1,000 pregnancies. In one-third of cases, ITP presents during pregnancy, within the majority of patients, asymptomatic thrombocytopenia is detected in tests obtained for other reasons. In additional severe cases, petechiae and straightforward bruising is also noticed.

The lower range (5th percentile) for infants born < 32 weeks of gestation is 104,000/μL, and 123,000/μL for late preterm and term neonates. At birth, the incidence of thrombocytopenia defined by a platelet count < 150,000/μL is 0.12-0.24% of all neonates. About 0.1-2% of all infants develop thrombocytopenia during the time of life. 18-35% of infants admitted to NICUs exhibit thrombocytopenia a minimum of once. In extremely low birth weight neonates (< 1,000 g), the incidence of thrombocytopenia is quite 70%; and severe thrombocytopenia (< 50,000/μL) is 40%.

Fetal platelets express HPA-1a as early as 16 weeks of gestation. However, there aren’t any reports demonstrating the transfer of fetal platelets to maternal circulation during a standard pregnancy. Maternal exposure to platelets probably occurs at delivery, and 0.5-1 ml fetal blood enters the maternal circulation in normal, uncomplicated deliveries. Unlike D sensitization, 40-60% of cases occur within the first pregnancy. This means previous maternal exposure to HPA-1a through insertion, prior undetected
pregnancies, transfer of fetal platelet, trophoblast or trophoblast particles early within the current pregnancy.

HPA antigen incompatibility alone isn’t sufficient to induce maternal alloimmunization, since only 10% of HPA-1a incompatible pregnancies end in maternal HPA-1a sensitization. One explanation for this unexpected finding is expounded to HPA-1a antigen presence and therefore the associated immunologic response. Antibody production depends on T helper {t cell|CD4} T cell|CD4 cell|T cell|T lymphocyte} activation resulting from interaction between T cell receptor and HLA class II antigen DRB3*01:01 present on T cells provides a binding groove which shows better avidity for β3 peptides (i.e. HPA-1a).10

Severe neonatal thrombocytopenia could be a rare complication of maternal autoimmune thrombocytopenia and is unfortunately not reliably predicted by maternal characteristics like platelet count during pregnancy or delivery, presence of detectable antplatelet antibodies, case history of autoimmune thrombocytopenia, and corticosteroid therapy11. Following current recommendations, intravenous immunoglobulin and platelet transfusion should be administered if the platelet count is lower than 30 G/L. In case of hemorrhagic diathesis, the treatment should be administered regardless of the platelet count, accompanied by platelet transfusion12.

CONCLUSION

The frequency of neonatal thrombocytopenia is high among patients with in pregnant women complicated by idiopathic thrombocytopenia. So, it is recommended that every pregnant woman who is complicated by idiopathic thrombocytopenia, should be sort out for neonatal thrombocytopenia as well. However, it is also required that every setup should have their surveillance in order to know the frequency of the problem.

Author’s Contribution:
Concept & Design of Study: Femida Umar
Drafting: Zubia Bugti
Data Analysis: Zubia Bugti
Revisiting Critically: Femida Umar, Zubia Bugti
Final Approval of version: Femida Umar

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

REFERENCES


4. Intracranial Hemorrhage and Autoimmune Thrombocytopenia in a Neonate: A Rare “Unpredictable” Event Andrea Becocci, MD1, Cristina Felice-Civitillo, MD1, Me’ryle Laurent, MD2,Françoise Boehlen, MD3, Roberta De Luca, MD1, and Joel Fluss, MD4 Received November 09, 2017. Received revised February 22, 2018. Accepted for publication March 09, 2018.


Incidence of Hip Fractures (Subtrochanteric and Intertrochanteric) in Sialkot in Last Five Years

Salman Imran Butt1, Muhammad Asif Saeed2, Maqsood Ahmed Khan3, Liaquat Ali4, Muhammad Munir Akhtar Khan1 and M Sabir4

ABSTRACT

Objective: To study the Incidence of Hip fractures (subtrochanteric and intertrochanteric) in Sialkot last five years.

Study Design: Retrospective Study

Place and Duration of Study: This study was conducted at the Department of Surgery, Idris Teaching Hospital, Sialkot Medical College, Sialkot from January 2015 to 31st July 2019.

Materials and Methods: A total of 121 patients were included in this study. There were 52(43%) patients were male and 69(57%) patients were female. The performa was designed to note down the demographic data and complications of hip fracture and lab test.

Written Informed consent was taken from every patient included in this study. The permission of ethical committee was also taken before collection of data and publishing in the medical journal. Participants were selected through non probability consecutive sampling technique.

Results: At the age of 26-35 years, there were patients of hip fracture 9(17.30%) Male and 2(3%) Female. At the age of 36-45 years the patients of hip fracture were 3(5.76%) Male and 5(7.24%) Female. At the age of 46-55 years the patients of hip fracture were 3(5.76%) Male and 4(6%) Female. At the age of 56-65 years the patients of hip fracture were 6(11.52%) Male and 6(9%) Female. At the age above 65 years the patients of hip fracture were 31(59.61%) Male and 52(75.36%) Female. There was cause of hip fracture due to fall or slippage was 31(59.61%) Male and 60(57%) Female, due to RTA especially car accidents 19(36.53%) Male and 06(9%) Female. Due to obesity, there were 2(3.84%) Male and 3(4.5%) Female were found. Conservative skin traction or bed rest there were 2(3.84) Male and 6(9.0%) Female were found. There were DHS 31(59.61%) Male and 48 (69.56%) Female, DCS 12(23.04%) Male and 14(20.28%) Female, due to I/M or I/L nail there were 7(13.46) Male and 03(4.5%) Female. There was complication of Blood clot leading to pulmonary Embolism 00(00) Male and 1(1.5%) Female. There was complication of Pneumonia 00(00) Male and 2(3%) Female. There was complication of Infection 03(5.76)% Male and 04(6%) Female. There was complication of Cut out implant 01(1.92) Male and 03(4.5%) Female. There was complication of Bed sores 00(00) Male and 01(1.5%) Female. There was complication of Mortality in 1st year 03(5.76%) Male and 06(9%) Female. There was outcome and end result in hip fracture union of hip fracture was 43(87.75%) male and 54(85.71%) female, there was delayed union of hip fracture 02(4.1%) Male and 03(4.76%) Female, there was non union of hip fracture in 04(8.2%) Male and 06(9.5%) Female.

Conclusion: It was concluded that there was hip fracture due to fall or slippage, car accidents and obesity.

Key Words: Incidence, Hip Fractures (Subtrochanteric and Intertrochanteric), Sialkot, Last Five Years


INTRODUCTION

“Osteoporosis causes the bone to be fragile so that a minute trauma leads to fracture.

The most disabling fracture due to osteoporosis is that of Hip bone which causes pain restricted movements, dependent life, early death. According to an audit report publishing 2009, osteoporotic hip joint fracture is on rise in Asia although it has been an increased incidence rate in Europe.” 1. “As the health related facilities are increasing throughout the globe. The ratio of old persons is also raising so that chances of getting hip fracture is also increased and it is estimated that by 2050 it will be 26 million2.”

“Multiple studies have indicated that incidence rate of hip fracture in different countries of the world is different even in neighbouring countries it does not match each other. Incidence of hip fracture is highest in Sweden and North America, with almost seven-times lower rates in Southern European countries.3 Incidence
rate of Hip fracture in Asia and Latin American countries is low as compared to America and Sweden’. “Most of the population of the globe resides in Asian countries so it is expected that the proportion of hip joint fracture will be increased in near future. It is deemed that by 2050 Asian countries will have more victims of osteoporotic hip joint fractures as compared to all other countries of globe’.2 “In pathogenesis of hip fracture DNA sequences play key role along with environmental factors.. This leads to variations of occurrence of osteoporotic hip joint fracture in different countries of world.” “The present study will explore the incidence rate of osteoporotic hip joint fractures in various countries of the globe. It will also explain the different factors leading to fracture in different countries.” “The data explained in this article has been taken from PubMed database. The keywords that were employed included hip fracture, incidence rate, geographic variation, osteoporosis, and epidemiology”. “The articles were chosen on the basis of 1) focus (studies that specifically focused on geographic variation in hip fracture); 2) language (studies that were in English); and 3) methods (studies that used statistical tests to look at hip fracture incidence rates).” “Hip fracture rates are available from many countries across Asia, including from Singapore, Taiwan, Japan, Malaysia, China, and the Middle East. India which is second most thick in population has only given probable rates only”. “Studies on hip fracture incidence rates are available from Japan, particularly from the Tottori prefecture, a region representative of the Japanese population in terms of demographic and economic status.4 A study carried out by (Hagino et al.) identified 851, 901, and 1059 patients with hip fracture (aged 35 years and older) in 2004, 2005, and 2006, respectively.” “The residual lifetime risk of hip fracture at 50 years of age was estimated to be 5.6% for men and 20% for women. The study concluded that within the Japanese population aged 35 years or older, the crude incidence of hip fracture was 244.8 per 100 000 person-years from 2004 to 2006 and the gender-specific incidence was 99.6 per 100 000 person-years for men and 368 per 100 000 person-years for ladies . When these incidence rates were compared thereupon from 30 years ago, the authors concluded that the incidence of hip fracture within the Japanese population is increasing. This elevated incidence is thought to be in persons of old age”. “The highest incidence of hip fractures from Asia has been reported from Singapore. A study by Koh et al. revealed that hip fracture rates from 1991 to 1998 (per 100 000) were 152 in men and 402 in women; this was respectively 1.5 and 5 times higher than corresponding rates in 1960s”.5 “Examined by ethnicity, since 1960, the main elevation in hip fracture rates has been seen in Chinese and Malays, while the rates in the Indian ethnic group appear to have lowered. The factors responsible for these racial differences include differences in the demographic profile, body weight, physical activity, prevalence of cigarette smoking and alcohol consumption, calcium intake, and frequency of falls in the community in elderly”. “In Korea, Lim et al. carried out the study to know the incidence and cost of hip fracture from 2001 to 2004 using data from the Health Insurance Review Agency, Korea.6 In individuals over 50 years of age, the number of hip fractures in women increased from 250.9/100 000 persons in 2001 to 262.8/100 000 in 2004, a 4.7% increase. However, hip fractures in men decreased from 162.8/100 000 in 2001 to 137.5/100 000 in 2004, a 15.5% decrease. The direct medical care costs of hip fracture increased from $62 707 697 in 2001 to $65 200 035 in 2004, and the proportional cost of hip fractures in the national medical costs increased by 4.5% over 4 years (from 0.200% in 2001 to 0.209% in 2004). On analysis of the population-based data obtained from the entire country from 2001 to 2004, the incidence rate of hip fractures in women (but not in men) and its cost have increased in Korea. This gender difference in the distribution of hip fractures underlines the need for aggressive intervention in osteoporosis in elderly women”. MATERIALS AND METHODS This study was conducted at the Department of Surgery, Idris Teaching Hospital, Sialkot Medical College, Sialkot from January 2015 to 31st July 2019. A total of 121 patients were included in this study. There were 52(43%) patients were male and 69(57%) patients were female. The performa was designed to note down the demographic data and complications of hip fracture and lab test. Written Informed consent was taken from every patient included in this study. The permission of ethical committee was also taken before collection of data and publishing in the medical journal. Participants were selected through non probability consecutive sampling technique. Inclusion criteria: All the cases of hip fracture were included in this study. RESULTS At the age of 26-35 years, there were patients of hip fracture 9(17.30%) Male and 2(3%) female. At the age of 36-45 years the patients of hip fracture were 3(5.76%) Male and 5(7.24%) female. At the age of 46-55 years the patients of hip fracture were 3 (5.76%) Male and 4(6%) female. At the age of 56-65 years the patients of hip fracture were 6(11.52%) Male and 6(9%) female. At the age above 65 years the patients of hip fracture were 3(59.61%) Male and 52(75.36%) Female as shown in table no 1.
There was cause of hip fracture due to fall or slippage was 31(59.61%) Male and 60(87%) female, due to RTA especially car accidents 19 (36.53%) Male and 14(20.28%) Female. Due to obesity, there were 2(3.84%) Male and 3(4.5%) female were found as shown in table no 2.

Table No. 2: Distribution of marital status

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>H/o fall or slippage</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>31(59.61%)</td>
<td>60(87%)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>19(36.53%)</td>
<td>06(9%)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Obesity</td>
<td>02(3.84%)</td>
<td>03(4.5%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>52(100%)</td>
<td>69(100%)</td>
</tr>
</tbody>
</table>

Conservative skin traction or bed rest there were 2(3.84%) Male and 4(6%) female were found. There were DHS 31(59.61%) male and 48 (69.56%) female, DCS 12(23.04%) Male and 14(20.28%) Female, due to I/M or I/L nail there were 7(13.46%) Male and 03(4.5%) female. Table 3.

Table No. 3: Treatment Distribution of Hip Fracture

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative Skin Traction or bed rest</td>
<td>2(3.84%)</td>
<td>4(6%)</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DHS</td>
<td>31(59.61%)</td>
<td>48(69.56%)</td>
</tr>
<tr>
<td>DCS</td>
<td>12(23.04%)</td>
<td>14(20.28%)</td>
</tr>
<tr>
<td>I/M, I/L nail</td>
<td>7(13.46%)</td>
<td>03(4.5%)</td>
</tr>
</tbody>
</table>

There was complication of Blood clot leading to pulmonary Embolism 00(00%) Male and 01(1.5%) female. There was complication of Pneumonia 00(00%) Male and 02(3%) Female. There was complication of Infection 03(5.76%) Male and 04(6%) Female. There was complication of Cut out implant 01(1.92%) Male and 03(4.5%) Female. There was complication of Bed sores 00(00%) Male and 01(1.5%) Female. There was complication of Mortality in 1st year 03(5.76%) Male and 06(9%) Female as shown in table no 4.

There was outcome and end result in hip fracture union of hip fracture was 43(87.75%) male and 54(85.71%) female, there was delayed union of hip fracture 02(4.1%) male and 03(4.76%) female, there was non-union of hip fracture in 04(8.2%) Male and 06(9.5%) Female as shown in table no 5.

Table No. 5: Output / end result in hip fracture

<table>
<thead>
<tr>
<th>Output</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union</td>
<td>43(87.75%)</td>
<td>54(85.71%)</td>
</tr>
<tr>
<td>Delayed union</td>
<td>02(4.1%)</td>
<td>03(4.76%)</td>
</tr>
<tr>
<td>Non union</td>
<td>04(8.2%)</td>
<td>06(9.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>53(100%)</td>
<td>63(100%)</td>
</tr>
</tbody>
</table>

DISCUSSION

“Osteoporetic Hip fracture rates have been explained in literature from among various countries across Asia, including from Singapore, Taiwan, Japan, Malaysia, China, and the Middle East. Unfortunately, only projected figures are available from India, which is second most populous country within the world”. “Studies on hip fracture incidence rates are available from Japan, particularly from the Tottori prefecture, a neighborhood representative of the Japanese population in terms of demographic and economic status. A recent survey (Hagino et al.) identified 851, 901, and 1059 patients with hip fracture (aged 35 years and older) in 2004, 2005, and 2006, respectively”. “The residual lifetime risk of hip fracture at 50 years of age was estimated to be 5.6% for men and 20% for women”. “The study concluded that within the Japanese population aged 35 years or older, the crude incidence of hip fracture was 244.8 per 100 000 person-years from 2004 to 2006 and the gender-specific incidence was 99.6 per 100 000 person-years for men and 368 per 100 000 person-years for ladies”. “When these incidence rates were compared with that from 30 years ago, the authors concluded that the incidence of hip fracture in the Japanese population is increasing. This increasing incidence is due to the increase in the population of the elderly in Japan over the last three decades”.

“The highest incidence of hip fractures from Asia has been reported from Singapore. A study by Koh et al. revealed that hip fracture rates from 1991 to 1998 (per 100 000) were 152 in men and 402 in women; this was respectively 1.5 and 5 times above corresponding rates.
CONCLUSION

It was concluded that there was hip fracture due to fall or slippage, car accidents and obesity.

Author’s Contribution:
Concept & Design of Study: Salman Imran Butt
Drafting: Muhammad Asif Saeed, Maqsood Ahmed Khan
Data Analysis: Liaquat Ali, Muhammad Munir Akhtar Khan and M Sabir
Revisiting Critically: Salman Imran Butt, Muhammad Asif Saeed

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

REFERENCES


Diagnostic Accuracy of Magnetic Resonance Imaging for Detection of Anterior Cruciate Ligament Tears Taking Arthroscopy as Gold Standard

Zafar Tanveer Ahmed¹, Nighat Haroon Khan², Saira Bilal², Saima Ameer², Fareeha Tanveer² and Madecha Tanveer²

ABSTRACT

Objective: To assess the diagnostic accuracy of magnetic resonance imaging for detection of anterior cruciate ligament tears taking arthroscopy as gold standard.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Department of Radiology, Lahore General Hospital, Lahore from six months 1.7.2019 to 31.12.2019.

Materials and Methods: 100 patients referred to Radiology Department, with knee injury were enrolled in the study. Written informed consent was taken. Demographic detail was also noted. Then all patients underwent MRI by using 1.5 tesla and 3 tesla MRI machines. Then arthroscopy was done and patients were confirmed as positive or negative for ACL tear.

Results: The mean age of patients was 52.31±11.02 years. There were 69 (69%) males and 31 (31%) females. Out of 100 cases, left side was involved in 22 cases, right side in 67 cases while 11 had bilateral injury. There were 51 cases who presented after road accident, 39 fall from height while 10 had fight. The mean duration of injury was 10.87±1.28 hours. The sensitivity and specificity of MRI were 93.3% and 96.4% for detection of ACL tear. PPV and NPV were 95.5% and 94.6% while diagnostic accuracy was 95%.

Conclusion: It is concluded that MRI is highly accurate diagnostic modality for detection of ACL tears. Now we can recommend MRI for screening of knee injuries instead of arthroscopy.

Key Words: magnetic resonance imaging, anterior cruciate ligament tears, arthroscopy, knee injury

INTRODUCTION

The anterior cruciate ligament (ACL) extends from the posterior surface of lateral femoral condyle and attaches to the anteriorintercondylar process of the tibia. Its average length is 31–38 mm and its average intersecting surface area is 36 mm² in females and 44 mm² in males.¹ The ACL stabilizes the joint during hyperextension and prevents anterior translation of tibia over femur.² Among all knee injuries, about 50% of injuries were ACL tears, for 30 ACL tears/100,000 persons.³,⁴

It can be divided into anteromedial and posterolateral bundles. The main function of the ACL is to limit the forward slip of the tibia on the femur. The anteromedial bundle of the ACL can prevent excessive external rotation of the leg, whereas the posterolateral bundle prevents excessive internal rotation. With the posterior cruciate ligament, the ACL limits excessive flexion, and excessive extension in combination with the posterior cruciate ligament, the medial and lateral collateral ligaments, the articular capsule and the oblique popliteal ligament.⁵ It also contributes to restriction of lateral slip and rotation with the articular capsule, the medial and lateral collateral ligaments and the posterior cruciate ligament.⁶

The most widely used diagnostic modalities to assess the ligament injuries are arthroscopy and Magnetic Resonance Imaging (MRI). Arthroscopy is considered gold standard in the diagnosis of knee ligament injuries, with diagnostic accuracy up to 94%; and can be used therapeutically as well.⁷ However, arthroscopy is an invasive and relatively high cost procedure requiring anesthesia and hospitalization, and there is a possibility of complications like infection. Thus, surgeons are increasingly turning to MRI as a non-invasive means of...
diagnosing ligament injuries. MRI is accurate and non-invasive modality for the assessment of ligamentous injuries. It can be used as a first line investigation to patients with suspicion of ACL injury. Rationale of this study is to assess the diagnostic accuracy of MRI for detection of ACL tears taking arthroscopy as gold standard. Literature showed that MRI has contradictory accuracy rate for detection of ACL in knee injuries, which create a dispute regarding the reliability of MRI. Moreover, there is only one local study available in literature which showed high reliability of MRI for detection of ACL. So further trials are needed to confirm the evidence. Thus to confirm the evidence we want to conduct this study to find the reliable results regarding the predictive accuracy of MRI in order to avert the unnecessary invasive procedures likes arthroscopy. This will help to improve our practice and we will implement the results in local setting to implement the application of MRI for prediction of ACL tear.

MATERIALS AND METHODS

This cross sectional study was conducted at the Department of Radiology, Lahore General Hospital, Lahore for a period of 6 months from 1.7.2019 to 31.12.2019 after the approval of synopsis. Sample Size: Sample size of 100 cases is calculated with 95% confidence level, and taking expected percentage of ACL tear i.e. 50% and sensitivity 93% with 7.5% margin of error and specificity 89% with 9% margin of error taking arthroscopy as gold standard. Sampling Technique: Non probability consecutive sampling. Sample Selection Inclusion criteria: Patients of age 20-70 years, both genders, presenting with knee injury (on clinical examination) due to accident and planned to undergo arthroscopy. Exclusion criteria: Patients with recurrent knee or ligamentous injuries, muscular or skeletal dystrophy, open wound injury, osteomalacia, osteoporosis or osteopenia, rheumatoid arthritis. Data Collection Procedure: 100 patients referred to Radiology Department, fulfilled selection criteria were enrolled in the study. Written informed consent was taken. Demographic detail was also noted. Then all patients underwent MRI by using 1.5 tesla and 3 tesla MRI machines by a single senior radiologist with assistance of researcher. Findings were recorded and patients were labeled as positive or negative (as per operational definition). Then patients underwent arthroscopy by a single surgical team under spinal anesthesia. Patients were confirmed as positive or negative for ACL tear. On MRI, it was labeled as positive if there was a tear present in ACL and was labeled as negative if ACL is in its normal position. On arthroscopy, it was labeled as positive if there was a tear of ACL and if not present then labeled as negative. Data Analysis: The collected data was entered and analyzed in SPSS 21. Age and duration of injury were presented as mean and standard deviation. Gender, laterality, mode of injury and ACL tear (on MRI & arthroscopy) were presented as frequency and percentage. 2x2 table was generated to calculate the sensitivity, specificity, PPV, NPV and accuracy of MRI taking arthroscopy as gold standard.

RESULTS

The mean age of patients was 52.31±11.02 years. There were 69 (69%) males and 31 (31%) females. Out of 100 cases, left side was involved in 22 cases, right side in 67 cases while 11 had bilateral injury. There were 51 cases who presented after road accident, 39 fall from height while 10 had fight. The mean duration of injury was 10.87±1.28 hours. Table 1 The sensitivity and specificity of MRI were 93.3% and 96.4% for detection of ACL tear. PPV and NPV were 95.5% and 94.6% while diagnostic accuracy was 95%. Table 2.

| Table No.1: Characteristics of patients |
| N | 100 |
| Age (years) | 52.31±11.02 |
| Male | 69 |
| Female | 31 |
| Left side | 22 |
| Right side | 67 |
| Bilateral | 11 |
| Mode of injury | 51 |
| Road accident | 39 |
| Fall | 10 |
| Duration of injury (hours) | 10.87±1.28 |

<p>| Table No.2: Accuracy of MRI against arthroscopy for detection of ACL injury |
| --- | --- | --- |</p>
<table>
<thead>
<tr>
<th>MRI</th>
<th>Arthroscopy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>42</td>
<td>55</td>
</tr>
<tr>
<td>Negative</td>
<td>3</td>
<td>53</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>55</td>
</tr>
</tbody>
</table>

| | Sensitivity: 93.3%, Specificity: 96.4%, PPV: 95.5%, NPV: 94.6%, Accuracy: 95% |

DISCUSSION

ACL reconstructions are among the most common sports medicine procedures performed in the United States, numbering about 100,000 each year. Currently there is no evidence that ACL reconstructions prevent the development of arthritis. Therefore it is not enough to just diagnose and treat ACL tears. The focus of many orthopedic surgeons and of ACL-related research is on
the prevention of ACL tears and the development of prevention programs. In our study, the mean age of patients was 52.31±11.02 years. There were 69 (69%) males and 31 (31%) females. The sensitivity and specificity of MRI were 93.3% and 96.4% for detection of ACL tear. PPV and NPV were 95.5% and 94.6% while diagnostic accuracy was 95%, which were corresponding to Fisher et al., study. The sensitivity and specificity of MRI in various studies have been shown to range between 61% and 100%, and 82% and 97%, respectively.

In a comparative diagnostic accuracy study by Amin et al., in post double bundle ACL reconstruction cases, MRI had sensitivity of 82.3% and specificity of 100% for complete tears. MRI is accurate in identification of ACL tears, ranging from 93% to 97%. Li et al., found that the pooled sensitivity and specificity were 87% (84–90%) and 90% (88–92%), respectively. Diagnostic sensitivity of MRI for ACL tear is reported to be 93% while specificity was 89%. One study showed that MRI has 77.8% sensitivity and 100% specificity in diagnosing ACL tear. One more study showed that MRI had 91.6% sensitivity, 95.2% specificity for detection of ACL. In another Pakistani study, the accuracy of MRI in diagnosing the ACLwas 91.89%, with sensitivity of 93.33%, specificity of 85.71%, positive predictive value of 96.55% and the negative predictive value of 75%.

Rose et al., reported that the accuracy of MRI was 98% for ACL tears. This they found that MRI is an expensive and unnecessary diagnostic test in patients with suspected meniscal pathology. Khandelwal et al., found that the sensitivity, specificity and accuracy of MRI in reference to arthroscopy for ACL tear was 97.46%, 90.38% and 95.71%, respectively.

The results of two large studies showed that MRI has relatively low sensitivity (40–75%), but moderate to high specificity (62–94%) in diagnosis of partial tears.

**CONCLUSION**

It is concluded that MRI is highly accurate diagnostic modality for detection of ACL tears. Now we can recommend MRI for screening of knee injuries instead of going for interventional method like arthroscopy.

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

**REFERENCES**


Adverse Pregnancy Outcomes in Overweight and Obese Women: A Cross Sectional Study
Sana Iqbal, Nargis Shabana and Fatima Chaudhry Inayat

ABSTRACT

Objective: To determine maternal outcomes of pregnancy among women having increased body mass index (more than 25).

Study Design: Descriptive cross-sectional study

Place and Duration of Study: This study was conducted at the Out-patient Department of Obstetrics and Gynaecology, Nishtar Hospital Multan from 03-07-2014 to 03-01-2015.

Materials and Methods: 150 pregnant women were enrolled for the research after informed consent. A proforma was filled encompassing the patients data which was analysed by SPSS -17.

Results: Pre-eclampsia, Diabetes and Post partum hemorrhage was seen in 43.3 %, 21.3% and 46.7% % of the cases respectively.

Conclusion: Obesity confers a high risk of gestational PPH, pre-eclampsia and gestational diabetes in pregnant women.

Key Words: BMI, Pre-eclampsia, Gestational diabetes.

INTRODUCTION

WHO defines BMI of more than 25 as overweight and more than 30 as obese. Obesity is effecting health of mankind across the globe in form of epidemic, showing a prevalence of 15 -20% and effecting health care system by costing 2-7% of total health expenditure. Obesity is more common in women than men as shown by study in PIMS Pakistan making women more susceptible to complications related to obesity. Maternal obesity worldwide poses a major challenge to obstetricians. Pre-pregnancy weight of the mother and gain in pregnancy effect both maternal and fetal outcome. Pre-pregnancy weight has a significant relation with birth weight not only in industrialized as well as developing countries. Similarly, increase in weight because of pregnancy has an independent correlation. Maternal obesity challenges maternal and neonatal health by imposing complications such as postdates hence artificial initiation of labour, macrosomic fetus, shoulder dystocia, prolonged labour, heavy blood loss, abdominal delivery rates and neonatal hospitalisation. Maternal obesity is also linked with congenital malformations. Athukorala et al. found pre-eclampsia and cesarean section in 11.4% and 36.4% in obese women respectively. Similarly gestational diabetes mellitus has been reported as 21.1% in obese pregnant women in a study. The risk of post partum hemorrhage due to atony increases rapidly with increasing BMI as much as two fold higher risk seen in obesity class III. Correlation of obesity and hypertensive disorders in pregnancy have been found in a study carried out in Australia. Researches conducted in Pakistan have also narrated higher cesarean section rate as much as 39.8% and post partum hemorrhage as about 45% among obese mothers. Humankind is exposed to calamity of obesity because of changes in lifestyle including high fat diet and lack of physical activity. Owing to the possible prevention and lack of research in this part of world regarding effect of obesity on pregnancy outcomes this study was planned so that we can understand the effect of raised BMI which is a modifiable anthropometric risk factor could be acquired and a management plan could be established, as it will help in devising a management plan starting well before pregnancy to prevent and cater for these complications hence improving maternal and neonatal outcome. In addition the results of this study have generated practical and beneficial database helping healthcare professionals to pre-empt these complications.
outcomes and improving their antenatal, intra partum and post partum care.

MATERIALS AND METHODS

This descriptive cross sectional study was conducted at the Out-patient Department of Obstetrics and Gynecology, Nishtar Hospital Multan for six months from 03-07-2014 to 03-01-2015. Total of 150 patients were enlisted in study group. Non-Probability consecutive sampling technique was used. 

Inclusion Criteria
- Any gestational age.
- Women with BMI >25.
- Age 15 to 39 years.

Exclusion Criteria
- Chronic hypertensive patients.
- Type 1 and 2 diabetes mellitus.
- Low lying placenta.
- History of recurrent pregnancy loss.
- Previous abdominal deliveries.
- Those who didn’t give consent of participation.

Data Collection Procedure: Pregnant ladies attending obstetric clinics of Nishtar hospital Multan with BMI > 25 kg/m² were registered in the study after informed consent. Ethical considerations were taken care of and formal approval was taken from the Ethical Committee of the Institution. Detailed history and physical examination including BMI was done and relevant information was filled in a specifically designed proforma. Patients were followed throughout their pregnancy for development of pre-eclampsia, gestational diabetes mellitus and during delivery for occurrence of post-partum hemorrhage. These developments were also noted in the respective proforma by the researcher.

Data Analysis Procedure: Data analysis was done by using SPSS version17. Mean and standard deviation was calculated for age and gestational age of the patients. For pre-eclampsia, gestational diabetes mellitus and post-partum haemorrhage frequencies and percentages were calculated. Stratification was done for effect modifiers like age and gestational age. Post stratification chi-square test was applied. P value equal or less than 0.05 was considered as significant.

RESULTS

Mean ages of patients of my study were 30.47 ± 4.18 years. Mean gestational ages of these study cases were 35.63 ± 3.91 weeks. Mean parity of these study cases was 3.31 ± 1.15. Mean BMI values of these study cases were 29.97 ± 2.91 Kg/m². Majorit of our study cases i.e. 95 (63.3%) had BMI in the range of 26-30 Kg/m² while none of our study cases presented with BMI more than 36 Kg/m² (Table-1). 65 out of 150 cases amounting 43.3% had pre-eclampsia in our study cases which is quite high, while gestational diabetes mellitus was seen in 32 out of 150 ladies accounting for 21.3% of the study cases. 70 out of 150 pregnant ladies making 46.7% of total ended having post partum hemorrhage during delivery. (Table 2).

The study results have also shown that pre-eclampsia was significantly more seen in the women with BMI 25-30 kg/m² as calculated p-value was 0.003 (Table-3). Gestational diabetes mellitus and post-partum hemorrhage were both insignificantly associated with BMI as p-values calculated were 0.063 for each (Table-3).

Table No.1: Distribution of BMI among study cases. (n=150)

<table>
<thead>
<tr>
<th>BMI (kg/m²)</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-30</td>
<td>95</td>
<td>63.3</td>
</tr>
<tr>
<td>31-35</td>
<td>55</td>
<td>36.7</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100</td>
</tr>
</tbody>
</table>

Table No.2: Frequency of pre-eclampsia, Gestational Diabetes and Post Partum Haemorrhage among study cases. (n=150)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>%age</th>
<th>No</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pre-eclampsia</td>
<td>65</td>
<td>43.3</td>
<td>85</td>
<td>56.7</td>
</tr>
<tr>
<td>2. Gestational diabetes</td>
<td>32</td>
<td>21.3</td>
<td>118</td>
<td>78.7</td>
</tr>
<tr>
<td>3. Post Partum Haemorrhage</td>
<td>70</td>
<td>46.7</td>
<td>80</td>
<td>53.3</td>
</tr>
</tbody>
</table>

Table No.3: Stratification of Pre-eclampsia, Gestational Diabetes and Postpartum Hemorrhage with respect to BMI. (n=150)

<table>
<thead>
<tr>
<th>BMI (kg/m²)</th>
<th>Pre-eclampsia</th>
<th>Gestational Diabetes</th>
<th>Postpartum Hemorrhage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (n=65)</td>
<td>No (n=85)</td>
<td>p-value</td>
</tr>
<tr>
<td>25-30  (n=95)</td>
<td>50</td>
<td>45</td>
<td>0.003</td>
</tr>
<tr>
<td>31-35  (n=55)</td>
<td>15</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

Adverse health hazards related to certain medical disorders such as heart diseases, diabetes mellitus and cancer are augmented by increase in body weight. During pregnancy obesity puts mother and fetus at risk of certain problems like pre eclampsia, diabetes, preterm birth and abdominal delivery. All these effects
on maternal and fetal health make the mother and fetus vulnerable to adverse outcomes. Major factors related to these perinatal complications are not amenable to available interventions. Latest epidemiologic reports have indicated that weight control particularly in those women who are planning their first pregnancy, have the potential to affect these gestational outcomes.

Pre-eclampsia was found in 43.3% of cases in our study higher than results of studies done in Karachi by Jaleel et al and Ali et al, in which 30.3% 23.3 % of cases had preeclampsia. Worldwide variable frequency of pre eclampsia has been reported for example, 32.4% in Egypt, 34% in Australia, 30% in USA and as low as 15.3% in Saudi Arabia and 11.4% reported by Athukorala et al. This wide variation may be explained by variable propensity of different ethnic societies for hypertension.

Gestational diabetes, in our study, was seen in 21.3% of the study cases while Mehar-un-Nisa reported 12.8% gestational diabetes mellitus among Saudi women. Gestational diabetes among obese women of Egypt has been reported to be 11.8% by Ahmed et al. Lu et al has reported 30% rate of gestational diabetes mellitus in obese pregnant females. This wide variation in prevalence may partly be explained by increase propensity of diabetes among some ethnic populations. Our study results have indicated that post partum hemorrhage (PPH) occurred in 46.7% of the cases comparable to a study done by Fatima et al who reported 45% occurrence rate among obese women. Occurrence rate as high as 70 % for post partum hemorrhage in obese women have also been reported in literature as in a study by Sibre et al. Limitations of our study included small sample size for generalization of result. Pre-pregnancy weight should ideally be taken to quantify the relation of obesity to complications separately from the excessive weight gain during pregnancy which is an independent risk for these complications.

CONCLUSION

Obesity places a pregnant women at risk of development of gestational diabetes, PPH, pre eclampsia. Weight loss programs pre pregnancy direct obese women attending prepregnancy clinics and avoidance of excessive weight gain during pregnancy can help to avoid certain percentage of these complication thus decreasing associated morbidity and mortality as well as health cost.

Author’s Contribution: Sana Iqbal
Drafting: Nargis Shabana
Data Analysis: Fatima Chaudhry Inayat
Revisiting Critically: Sana Iqbal, Nargis Shabana

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

REFERENCES

14. Fatima S, Rehman A, Gangat SA, Kamal A, Zeeshan A. To compare maternal and fetal outcome in obese versus non-obese laboring...
Mothers Knowledge and Attitude about Neonatal Jaundice in Rural Areas of Sargodha
Sadaf Liaqat¹, Sajid Hussain Sherazi², Rabeya Rehman³, Nadia Bashir², Amna Rashid Butt⁴ and Muhammad Yaqoob¹

ABSTRACT

Objective: To determine the knowledge and attitude towards symptoms, causes and prevention of neonatal jaundice among mothers in rural areas of District Sargodha.

Study Design: Observational / cross-sectional study

Place and Duration of Study: This study was conducted at the Department of Pediatrics, Rai Medical College, Doctors Trust Teaching Hospital Sargodha from 1st April 2018 to 30th September 2018.

Material and Methods: A total of 115 mothers from rural areas of Sargodha were participated and interviewed in this study. The study duration was of six months. The exclusion criteria were all females with no successful pregnancy whereas all married females that delivered at least one live baby were included.

Results: The mean age of the mothers was 28.2±7.6 years. We observed, 48 out of 115 (41.7%), females were below 25 years of age, whereas 55 (47.8%) were between 26-35 and 12(10.4%) were above 35 years of age. 70 (60.8%) females were with education below primary and 45 (39.2%) were above primary level of education. The first or second ranked neonates were observed in 75 (65.2%) females. We observed that 35% of females had moderate knowledge of all symptoms related to jaundice whereas 55% were with little knowledge or not fully aware of jaundice symptoms.

Conclusion: The knowledge and attitude aspects, about neonatal jaundice, of mothers were insufficient.

Key Words: Neonatal Jaundice, Mortality, Morbidity, Knowledge and attitude, Symptoms

INTRODUCTION

The first twenty-eight days of life is defined as the neonatal period; this is the period where neonates are at very high risk of various diseases.¹ In developing countries like in Africa and Asia, the neonatal mortality and morbidity is very high, neonatal jaundice has proven a major participant. This involves almost sixty percent full term neonates and 80% preterm pregnancies/births.¹,³ Poor socioeconomic status of families enforces mothers towards early discharge from hospital with their neonates, has imposed a lot of responsibilities to the mothers about jaundice recognition and proper treatment. Therefore the role of mother has been increased in neonatal jaundice management. Studies are available about the role and time management of the mothers towards neonatal jaundice.⁴,⁵ Neonatal jaundice contributes significantly to neonatal morbidity and mortality. Possible complications arising from unconjugated hyperbilirubinemia include acute bilirubin encephalopathy, kernicterus, seizures, cerebral palsy, mental retardation, and deafness.⁶

Recently, newborns are being discharged early from hospital, so parents have the primary responsibility for early detection of jaundice and seeking proper treatment at the right time and place. Therefore, it is important that parents should have correct knowledge of how to recognize newborn jaundice as well as how to respond appropriately. Many times the delay in seeking medical advice is because of parent’s wrong attitudes, e.g. they do self-medications with herbal medicines and homemade remedies due to inadequate knowledge, also having misconceptions about the beneficial role of sunlight in reducing severe jaundice.⁷,⁸ Lack of attention, self-medication or treatment and lack of confidence yield complications reported by various studies.⁹,¹⁰

MATERIALS AND METHODS

This observational cross-sectional study was conducted at in a rural area of Sargodha, in Rai Medical College Sargodha from 1st April 2018 to 30th June 2018. A total
of 115 mothers were participated and interviewed in this study. The study duration was of six months. All females with no successful pregnancy were excluded whereas all married females that delivered at least one alive baby were included. Demographic and socioeconomic information of all the participants were collected. Moreover the mothers were questioned about the knowledge and attitude towards neonatal jaundice, knowledge of mothers regarding way of diagnosis, causes, treatment, complications, and recognition of neonatal jaundice (totally 13.5 scores). All the collected data was stored electronically and analyzed later by using SPSS version 20.

RESULTS

Table No.1: Mothers knowledge about neonatal jaundice

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usual Symptoms of Jaundice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neonates Skin</td>
<td>82</td>
<td>71.3</td>
</tr>
<tr>
<td>Palm and sole</td>
<td>43</td>
<td>37.4</td>
</tr>
<tr>
<td>Sclera</td>
<td>101</td>
<td>87.8</td>
</tr>
<tr>
<td><strong>Worst symptoms of jaundice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fever</td>
<td>40</td>
<td>34.8</td>
</tr>
<tr>
<td>Listlessness</td>
<td>23</td>
<td>20.0</td>
</tr>
<tr>
<td>Feed refusal</td>
<td>57</td>
<td>49.6</td>
</tr>
<tr>
<td>Back arching</td>
<td>2</td>
<td>1.7</td>
</tr>
<tr>
<td>High pitched crying</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Seizures</td>
<td>21</td>
<td>18.3</td>
</tr>
<tr>
<td><strong>Neonatal Jaundice Causes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infections</td>
<td>58</td>
<td>50.4</td>
</tr>
<tr>
<td>Mother &amp; child blood group</td>
<td>25</td>
<td>21.7</td>
</tr>
<tr>
<td>difference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prematurity</td>
<td>17</td>
<td>14.8</td>
</tr>
<tr>
<td><strong>Jaundice severe complications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental retardation</td>
<td>32</td>
<td>27.8</td>
</tr>
<tr>
<td>Brain injury</td>
<td>35</td>
<td>30.4</td>
</tr>
<tr>
<td>Neonatal death</td>
<td>58</td>
<td>50.4</td>
</tr>
<tr>
<td>Future Seizures</td>
<td>44</td>
<td>38.3</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood test</td>
<td>63</td>
<td>54.8</td>
</tr>
<tr>
<td>Urine Test</td>
<td>23</td>
<td>20.0</td>
</tr>
<tr>
<td>Appearance</td>
<td>7</td>
<td>6.1</td>
</tr>
<tr>
<td>No information</td>
<td>3</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>Treatment of Jaundice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phototherapy</td>
<td>46</td>
<td>40.0</td>
</tr>
<tr>
<td>Blood Exchange</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>Both treatment</td>
<td>58</td>
<td>50.4</td>
</tr>
<tr>
<td>No information</td>
<td>12</td>
<td>10.4</td>
</tr>
<tr>
<td><strong>Prevention (during pregnancy)[misconceptions]</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of special food</td>
<td>17</td>
<td>14.8</td>
</tr>
<tr>
<td>No native warm food</td>
<td>55</td>
<td>47.8</td>
</tr>
<tr>
<td>Use of herbal medicine</td>
<td>13</td>
<td>11.3</td>
</tr>
<tr>
<td>Less fatty food use</td>
<td>55</td>
<td>47.8</td>
</tr>
</tbody>
</table>

Table No.2: Level of knowledge of mothers about neonatal jaundice

<table>
<thead>
<tr>
<th>Knowledge Level</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge score</td>
<td>7.1±2.3</td>
<td></td>
</tr>
<tr>
<td>Low level</td>
<td>63</td>
<td>55.0</td>
</tr>
<tr>
<td>Moderate level</td>
<td>40</td>
<td>35.0</td>
</tr>
<tr>
<td>Null</td>
<td>12</td>
<td>10.0</td>
</tr>
</tbody>
</table>

DISCUSSION

The present study showed that the knowledge score was below to the mark. Our study reports the knowledge of mothers about symptoms of jaundice is below forty percent, which is low, where as other studies estimate the symptoms knowledge were above seventy percent which is quite high as compared to us. Our study also reports that the knowledge about worst symptoms of jaundice was very less and inappropriate somehow similar to the Indian reported studies. The knowledge about causes was limited in our study mothers; similar findings were reported in India. This study showed that most of the mothers were aware of neonatal jaundice diagnosis and treatment i.e. they knew the jaundice is curable. Similar findings were observed in other published studies in India. The effective treatment knowledge was limitedly reported about blood exchange by our study. The mother’s knowledge of neonatal jaundice complications was weaker as only one fifth of respondent knew the neonatal jaundice complications. Another finding of our study was that, the majority of mothers had believed about the diet in pregnancy can control over neonatal jaundice. Goodman et al in Iran showed similar results. This was clearly a misconception by the mothers and this leads to risky and unsafe acts during pregnancy. In this way it is very important to educate the pregnant women. Our study reported that almost 50% mothers were with correct attitude towards neonatal jaundice. But a large number of mothers practice the herbal medicines during and after pregnancy to cure the neonatal jaundice.
Actually they believed it is harmless. Similar findings were reported by other studies.\textsuperscript{12,13} Contradict to the above fact, studies available which report the herbal use can lead to damage to health i.e. liver injury and hypertension in neonates.\textsuperscript{10} Our study reports a large number of mothers agreed to hospitalize the neonates who suffer from jaundice, and the phototherapy treatment. These findings were similar to other published reports.\textsuperscript{14,15}

In present study we found that 35% of mothers had moderate level, 55% had low level and 10% had no knowledge level towards neonatal jaundice. We calculated knowledge scores based on the awareness regarding symptoms, complications, diagnosis and treatment of neonatal jaundice and observed the mean knowledge score as 7.1±2.3. A study conducted by Sharmila\textsuperscript{16} reported that 49.90% mothers had low level of knowledge, 28.60% had moderate level and 22% had adequate level of knowledge about neonatal jaundice. Some other studies results regarding mother knowledge and attitude towards neonatal jaundice were comparable to our study.\textsuperscript{17,17}

CONCLUSION

The knowledge and attitude of mothers about neonatal jaundice were insufficient; there should be proper awareness workshops or programs to educate the mothers.

Author’s Contribution:
Concept & Design of Study: Sadaf Liaqat
Drafting: Sajid Hussain Sherazi, Rabeya Rehman
Data Analysis: Nadia Bashir, Anna Rashid Butt, Muhammad Yaqoob
Revisiting Critically: Sadaf Liaqat, Sajid Hussain Sherazi
Final Approval of version: Sadaf Liaqat

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

REFERENCES

Determine the Impact of Uterine Leiomyoma on Pregnancy Outcomes

Zaib-un-Nisa, Firdous Ara, Fahmida Umar and Bilqees Ara

ABSTRACT

Objective: To examine the impact of uterine leiomyoma on pregnancy outcome was the objective of this study.

Study Design: Descriptive study

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynaecology, Sandemen Provincial Teaching Hospital Quetta from July 2019 to December 2019.

Materials and Methods: Forty four pregnant females with greater than 3cm leiomyoma were included. Those who have less than 3cm leiomyoma were excluded from the study. During antenatal period selected females were properly followed. Size of leiomyoma, parity, maternal age, labour and delivery, pregnancy complications, caesarean section indications and type of delivery were noted.

Results: Sixteen (36.4%) females were asymptomatic during pregnancy. Eight (18.2%) females had abdominal pain, the most common complication during antenatal period. Sixteen (36.4%) delivered through vaginal route and remaining females 28 (63.5%) were delivered through lower segment caesarean section (LSCS) in which elective lower segment caesarean section 18 (41%) and emergency lower segment caesarean section were 10 (23%). 10 (23%) experienced postpartum haemorrhage (PPH) but managed predictably. Due to fibroid in lower segment only two (4.5%) patients ended up in hysterectomy. No perinatal mortality was observed during study.

Conclusion: There are high risk pregnancies due to uterine leiomyoma and these pregnancies also increase the caesarean delivery rate as well as increase chances of postpartum haemorrhage and long stay at hospital.

Key Words: Uterine leiomyoma, Complications, Lower segment caesarean section, Postpartum hemorrhage, Hysterectomy

INTRODUCTION

Uterine leiomyoma commonly occur in females of reproductive age. Various studies shows that twenty percent of all females and forty percent of over 40-years of age females have uterine leiomyoma. Mostly leiomyomas appeared in fundus and uterus body and cervical leiomyoma are only 3%. Due to increase estrogen and progestin level during pregnancy, 15% to 30% myomas get enlarged but mostly reduce during puerperium. Leiomyoma pregnancies commonly asymptomatic and have no acute complications but sometimes harmfully affected the course of pregnancy. Less than 3cm leiomyoma are not significant clinically. Chances of miscarriage increases when leiomyoma located in uterine cavity and also increase the chance of preterm labour, pre-mature membranes rupture when leiomyoma may undergo red degeneration during pregnancy, it may cause the lower abdominal acute pain. The risk of mal-presentation, abdominal implantation of placenta, abruptio of placenta, preterm labour, intrauterine growth restriction, dysfunctional labour, obstructed labour increases due to leiomyoma/fibroid and also the rate of caesarean section. Increase rate of caesarean section was found in females who have leiomyoma because of distortion of birth canal and other obstetric reasons.

MATERIALS AND METHODS

This descriptive study was conducted at Department of Obstetrics & Gynecology (Unit I & II), Sandemen Provincial Teaching Hospital Quetta from 1st July 2019 to 31st December 2019. All pregnant females with greater or equal to 3cm leiomyoma were included in this study and those who have less than 3cm leiomyoma were excluded from study. Total 44 patients were followed ultrasonically and clinically during antenatal period. Through ultrasound leiomyoma / fibroids were diagnosed and built-up the hemoglobin. To see the changes in growth of baby, size, placental localization and mal-presentation, a serial ultrasound was done. The patients were admitted to obstetrics and gynecology department when pain occurs or threat of preterm labour. Size of fibroid/leiomyoma, maternal age,
pregnancy complications, parity, labour or delivery, caesarean section indications, type of delivery were noted during the study. The data was entered and analyzed using SPSS-20.

RESULTS

During the study period there were 44 pregnant females with leiomyoma ≥3cm. The age range of patients who have leiomyoma was 20-years to 40-years. 16 (36.5%) patients were between 20-years to 25-years of age in this study. Between 26-years to 30-years of age there were twenty four (55%) patients and more than thirty years 4 (9%) patients in the study (Table 1). Before pregnancy, eight (18%) patients were knew about leiomyoma whereas 4 (9%) patients were diagnosed through routine ultrasound before twelve weeks of gestation. 16 (36.5%) majority of patients were diagnosed between 13-weeks to 20-weeks. At 21-weeks to 28-weeks ten (23%) patients come to knew about leiomyoma and 6 (15%) at 29-weeks to 36-weeks (Table 2).

The asymptomatic patients were fourteen (32%). Due to red degeneration acute pain was observed in sixteen patients who were managed conservatively with analgesics and complete bed rest. Six (13.5%) patients of them had repetitive problem and more than 2 to 3 times were admitted in hospital. There was malpresentation e.g. oblique, transverse and breech was found in six (13.5%) patients. There were two (4.5%) females who had type-III placenta previa and during antenatal period both had one episode of mild to moderate bleeding. Low birth weight (LBW) was found in four patients and preterm labour was started in 4 (9%) patients (Table 3). During delivery fetal distress was found in 6 (13.5%) patients, prolonged labor found in 4 (9%) patients and postpartum hemorrhage found in 10 (23%) patients (Table 4). Sixteen females were delivered by vaginal route and remaining 28 (63.5%) patients delivered by lower segment caesarean section (LSCS) in which eighteen (41%) were elective C-section and 10 (23%) were emergency lower segment caesarean sections because of failure to progress and fetal distress. Indications of lower segment C-section was shown in Table 5.

Due to leiomyoma in the lower uterine segment, 2 (4.5%) patients underwent caesarean hysterectomy as it resulted in postpartum haemorrhage (PPH). Conservatively the remaining postpartum haemorrhage (PPH) patients were managed. Due to pre-maturity, there were four babies who were admitted to nursery. There was no perinatal mortality was observed during the period of study.

<table>
<thead>
<tr>
<th>Table No.1: Frequency of age (n=44)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (Years)</strong></td>
</tr>
<tr>
<td>20-25</td>
</tr>
<tr>
<td>26-30</td>
</tr>
<tr>
<td>&gt; 30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table No.2: Duration of gestation age at diagnosis (n=44)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
</tr>
<tr>
<td>Before pregnancy</td>
</tr>
<tr>
<td>&lt; 12 weeks</td>
</tr>
<tr>
<td>13-20 weeks</td>
</tr>
<tr>
<td>21-28 weeks</td>
</tr>
<tr>
<td>29-36 weeks</td>
</tr>
<tr>
<td>&gt;36 weeks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table No.3: Frequency of complications during pregnancy (n=44)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Complication</strong></td>
</tr>
<tr>
<td>Asymptomatic</td>
</tr>
<tr>
<td>Abdominal pain</td>
</tr>
<tr>
<td>Low birth weight</td>
</tr>
<tr>
<td>Preterm labour</td>
</tr>
<tr>
<td>Placenta previa</td>
</tr>
<tr>
<td>Abortion</td>
</tr>
<tr>
<td>Malpresentation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table No.4: Frequency of complications during delivery (n=44)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Complication</strong></td>
</tr>
<tr>
<td>Fetal distress</td>
</tr>
<tr>
<td>Prolonged labour</td>
</tr>
<tr>
<td>Postpartum haemorrhage</td>
</tr>
<tr>
<td>No complication</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table No.5: Mode of delivery (n=44)</th>
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</thead>
<tbody>
<tr>
<td><strong>Mode</strong></td>
</tr>
<tr>
<td>Spontaneous vaginal delivery</td>
</tr>
<tr>
<td>Lower segment caesarean section</td>
</tr>
<tr>
<td>Caesarean hysterectomy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table No.6: Lower segment caesarean section indications (n=28)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indication</strong></td>
</tr>
<tr>
<td>Malpresentation</td>
</tr>
<tr>
<td>Placenta previa</td>
</tr>
<tr>
<td>Cervical/lower segment leiomyoma</td>
</tr>
<tr>
<td>Moderate PIH</td>
</tr>
<tr>
<td>Scared uterus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emergency caesarean sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to progress</td>
</tr>
<tr>
<td>Fetal distress</td>
</tr>
</tbody>
</table>

DISCUSSION

Pregnancy with leiomyoma / fibroid is conceivably major issue. In the majority of cases it does not impact pregnancy results yet now but in some cases depending on its size, location and placental attachment site may result in miscarriage, preterm labour, postpartum haemorrhage, pre-mature rupture of membrane and uterine inversion. In our study, the age range of patients who have leiomyoma was 20-40 years. 16 (36.5%) patients were between 20-25 years of age in this study.
Between 26-30 years of age there were 24 (55%) patients and >30 years 4 (9%) patients. A study conducted by Saleh et al., reported mean age of patients was 31.8±3.27 years. In the current study, during pregnancy we recorded complications, in which asymptomatic found in 16 (35%) patients use to red degeneration acute pain was observed in sixteen patients who were managed conservatively with analgesics and complete bed rest. Six (13.5%) patients of them had repetitive problem and more than 2 to 3 times were admitted in hospital. There was malpresentation e.g. oblique, transverse and breech was found in six (13.5%) patients. There were two (4.5%) females who had type-III placenta previa and during antenatal period both had one episode of mild to moderate bleeding. Low birth weight (LBW) was found in four patients and preterm labour was started in 4 (9%) patients. These results were comparable to some other studies.

In the present study, during delivery fetal distress was found in 6 (13.5%) patients, prolonged labor found in 4 (9%) patients and postpartum hemorrhage found in 10 (23%) patients. A study conducted by Thomas et al., reported abdominal pain and vaginal bleeding and postpartum hemorrhage is associated with uterine fibroids. In this study, sixteen females were delivered by vaginal route and remaining 28 (63.5%) patients delivered by lower segment caesarean section (LSCS) in which eighteen (41%) were elective C-section and 10 (23%) were emergency lower segment caesarean sections because of failure to progress and fetal distress. These results were similar to many other studies in which C-section delivery was high in numbers. Pregnancy loss by only two (4.5%) patients in our study but it was higher in other studies, it may be due to majority of patients had antenatal booking in our series during late second trimester. Myoma may deform uterine cavity and resulted in mal-presentation. Delivery before term in 4 (9%) of our patients but in a different studies frequency of preterm delivery was high as compared to our study.

Lower segment caesarean section (LSCS) was done in 63.5% patient, which is higher in patients without leiomyoma. These results showed similarity to some other studies.

CONCLUSION

There are high risk pregnancies due to uterine leiomyoma and these pregnancies also increase the caesarean section rate and also increase the chances of postpartum haemorrhage. Leiomyoma/fibroid may affect the course of pregnancy adversely and labour depending upon their size and location. So needs particular follow-up.

Author’s Contribution:
Concept & Design of Study: Zaib-un-Nisa

Drafting: Firdous Ara
Data Analysis: Fahmida Umar, Bilqees Ara
Revisiting Critically: Zaib-un-Nisa, Firdous Ara
Final Approval of version: Zaib-un-Nisa

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

REFERENCES


20. Tower AM, Cronin B. Myomectomy after a vaginal delivery to treat postpartum hemorrhage resulting from an intracavitary leiomyoma. Obstet Gynecol 2015; 125:111


Determine the Prevalence and Associated Risk Factors of Contrast Induced Nephropathy in Patients Undergoing Percutaneous Coronary Intervention

Dost Muhammad1, Farida Khudaidad2, Farhan Faisal3, Fazal-ur-Rehman3, Riaz-ud-Din2 and Abdul Ghaffar3

ABSTRACT

Objective: To examine the prevalence and associated risk factors of contrast induced nephropathy in patients undergoing multi-vessel percutaneous coronary intervention.

Study Design: Prospective/Observational

Place and Duration of Study: This study was conducted at the Department of Cardiology, Bolan Medical Complex Hospital Quetta from July 2019 to December 2019.

Materials and Methods: One hundred and fifty patients of both genders with ages 20 to 80 years undergoing percutaneous coronary intervention were enrolled in this study. Patient’s detailed demographics were recorded after written consent. Contrast induced nephropathy was defined as serum creatinine >0.5mg/dl from baseline value. Risk factors associated with contrast induced nephropathy were examined.

Results: There were 105 (70%) males and 45 (30%) were females with mean age 57.64±7.28 years. Contrast induced nephropathy was found in 26 (17.33%) patients. Anemia, diabetes mellitus, hypertension, contrast volume >150ml, congestive heart failure and age >70 years were significantly associated risk factors of contrast induced nephropathy with p-value <0.05.

Conclusion: The incidence of contrast induced nephropathy in patients undergoing percutaneous coronary intervention is high. Significant risk factors for contrast induced nephropathy were anemia, age >70 years, diabetes mellitus, contrast volume >150ml and heart failure.

Key Words: Percutaneous coronary intervention (PCI), Contrast induced nephropathy (CIN), Risk factors

INTRODUCTION

Contrast induced nephropathy is an important and well-known complication in patients with chronic renal insufficiency undergoing both coronary angiography and coronary interventions. The estimated incidence of contrast nephropathy after coronary angiography was around 15%. In fact, CIN is the third leading cause of acute renal failure in hospitalized patients.1

Contrast induced nephropathy is usually transient disorder, but in some cases may result in residual permanent renal damage, prolong hospital stay and increase medical cost.2 Renal failure increases the risk of developing severe nonrenal complications that can lead to death. The mortality rate in subjects without renal failure was 7%, compared with 34% in patients with renal failure.3 Contrast induced nephropathy is an important cause of nosocomial renal impairment. This deleterious effect of contrast agents on renal function is defined as an impairment of renal function with increase in serum creatinine level by more than 25% or 44umol/l occurring within 3 days after intravascular administration of contrast agents and in the absence of alternative cause.4

Reported incidence of CIN varies (<2 to 30%) depending on the study population, the prevalence of associated risk factors and the definition of CIN.5,6 Patients undergoing coronary angiography or PCI have the highest CIN incidence compared to other procedures using contrast media for diagnostic or therapeutic purposes. The risk factors predicting contrast induced nephropathy consists of 5 patient related factors including creatinin clearance, diabetes

1. Department of Cardiology, Postgraduate Medical Institute Quetta.
2. Department of Community Medicine/Cardiology3, Bolan University of Medical and Health Sciences Quetta.

Correspondence: Dr. Dost Muhammad, Assistant Professor of Cardiology, Postgraduate Medical Institute Quetta.
Contact No: 0300-6325448
Email: dkhan535@gmail.com

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Printed: March, 2020
mellitus, congestive heart failure, hypertension and peripheral vascular disease, along with 3 procedure-related factors including intra-aortic balloon pump usage, contrast volume >260 ml and urgent/emergency procedure.\textsuperscript{8-10} The present study was conducted to examine the incidence and predictors of contrast induced nephropathy in patients of high risk undergoing percutaneous coronary interventions.

**MATERIALS AND METHODS**

This prospective/observational study was conducted at Department of Cardiology, Bolan Medical Complex Hospital Quetta from 1\textsuperscript{st} July 2019 to 31\textsuperscript{st} December 2019. A total of 150 patients of both genders with ages 20 to 80 years undergoing percutaneous coronary intervention were enrolled in this study. Patients detailed demographics including age, sex and co-morbidities such as diabetes mellitus, anemia, hypertension, smoking, heart failure and family history of CAD were recorded after taking informed written consent from all the patients/attendants. Patients <20 years of age, patients with pre existing impaired renal functions and those with no consent were excluded. Contrast induced nephropathy was defined as increase in serum creatinine $>0.5$mg/dl from baseline to 48hours post procedure. Frequency of CIN was recorded. Predictors of contrast induced nephropathy were examined such as anemia, diabetes mellitus, hypertension, contrast volume, congestive heart failure and age. All the data was analyzed by SPSS 24. Chi-square, student t test was applied to examine the risk factors associated with CIN with $p$-value $<0.05$ was taken as significant.

**RESULTS**

One hundred and five (70\%) patients were males while 45 (30\%) were females with mean age 57.64±7.28 years. Anemia was found in 50 (33.33\%) patients, diabetes mellitus found in 64 (42.67\%) patients, hypertension in 90 (60\%) patients, smoking found in 60 (40\%) patients, family history of CAD found in 28 (18.67\%) patients, congestive heart failure found in 21 (14\%) patients. Mean serum creatinine at baseline was 1.18±0.43mg/dl. 48 (34.67\%) patients had contrast volume $>150$ml and 102 (65.33\%) had contrast volume $<150$ml (Table 1). Contrast induced nephropathy was found in 26 (17.4\%) patients while 124 (82.6\%) had no CIN (Table 2).


table1: Demographic information of all the patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>57.64±7.28</td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>105</td>
<td>70.0</td>
</tr>
<tr>
<td>Female</td>
<td>45</td>
<td>30.0</td>
</tr>
<tr>
<td>Co-morbidities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>90</td>
<td>60.2</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>64</td>
<td>42.8</td>
</tr>
<tr>
<td>Smoking History</td>
<td>60</td>
<td>40.0</td>
</tr>
<tr>
<td>Family history of CAD</td>
<td>28</td>
<td>18.8</td>
</tr>
<tr>
<td>CHF</td>
<td>21</td>
<td>14.2</td>
</tr>
<tr>
<td>Contrast volume</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$&gt;150$ml</td>
<td>48</td>
<td>34.7</td>
</tr>
<tr>
<td>$&lt;150$ml</td>
<td>102</td>
<td>65.3</td>
</tr>
<tr>
<td>Serum creatinine (mg/dl)</td>
<td>1.18±0.43</td>
<td></td>
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</table>


table2: Incidence of contrast induced nephropathy (CIN)

<table>
<thead>
<tr>
<th>CIN</th>
<th>No.</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>Yes</td>
<td>26</td>
<td>17.4</td>
</tr>
<tr>
<td>No</td>
<td>124</td>
<td>82.6</td>
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table3: Risk factors associated with contrast induced nephropathy

<table>
<thead>
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<th>CIN</th>
<th>No.</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age $&gt;70$ years</td>
<td>Yes</td>
<td>12</td>
<td>46.15</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>6</td>
<td>4.84</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Yes</td>
<td>18</td>
<td>69.23</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>72</td>
<td>58.06</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>Yes</td>
<td>17</td>
<td>65.38</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>47</td>
<td>37.90</td>
</tr>
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<td>Smoking History</td>
<td>Yes</td>
<td>10</td>
<td>38.46</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>50</td>
<td>40.32</td>
</tr>
<tr>
<td>Family history of CAD</td>
<td>Yes</td>
<td>4</td>
<td>15.38</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>24</td>
<td>19.35</td>
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<tr>
<td>CHF</td>
<td>Yes</td>
<td>13</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>8</td>
<td>34.75</td>
</tr>
<tr>
<td>$&gt;150$ ml</td>
<td>Yes</td>
<td>21</td>
<td>80.77</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>27</td>
<td>21.77</td>
</tr>
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</table>

**DISCUSSION**

Percutaneous coronary intervention is one of the most performing procedure in all over the world and contrast induced nephropathy is one of the most important cause of morbidity and mortality in PCI patients\textsuperscript{11,12} Many of studies have been conducted to examine the frequency of CIN in patients undergoing percutaneous coronary intervention and reported high prevalence of CIN 3% to 40% with high rate of mortality and morbidity.\textsuperscript{13,14} We conducted this study with aimed to examine the frequency of CIN and risk factors associated with CIN in patients whom were received percutaneous coronary intervention at our institute. In this regard 150 patients were analyzed in which majority 70% were male while 30% were female and majority of patients 68\% were ages 40 to 60\%.
These results showed similarity to several previous studies in which male patients population was high 60% to 78% as compared to females and the average age in these studies was 55.8 years.\textsuperscript{15,16}
This study showed that the incidence rate of contrast induced nephropathy was 17.33% while 82.67% patients had no CIN. A study conducted by Mandal et al\textsuperscript{17} reported the frequency of CIN was 13.20% among 152 patients whom were received PCI. A meta-analysis regarding prevalence of CIN in patients undergoing PCI conducted by He et al\textsuperscript{18} in 2019 and they reported that the frequency of CIN was 13.3%. Some other previous studies demonstrated that the incidence rate of contrast induced nephropathy in PIC patients was 10% to 38\%.\textsuperscript{19,20}

In the present study we found that anemia, diabetes mellitus, age above 70 years, hypertension, contrast volume >150ml and heart failure were the independent risk factors significantly associated with contrast induced nephropathy with p-value <0.05. A study conducted by Sasidharan et al\textsuperscript{21} reported that diabetes mellitus, hypertension, age >75 years and contrast volume ≥100 ml were the risk factors significantly associated with CIN (p>0.001). Valappil et al\textsuperscript{22} demonstrated that anemia and contrast volume were the significantly associated risk factors of CIN. A study conducted in Pakistan by Ullah et al\textsuperscript{23} reported that diabetes mellitus, age above 65 years, heart failure and contrast volume were the risk factors associated with contrast induced nephropathy. Some other studies demonstrated the similar findings to our study regarding risk factors of CIN.\textsuperscript{24,25}

**CONCLUSION**

Contrast induced nephropathy is one of the commonest cause of complication and mortality in patients undergoing percutaneous coronary intervention. We concluded that the incidence of contrast induced nephropathy in patients undergoing PCI is high. Significant risk factors for CIN were anemia, age >70 years, diabetes mellitus, contrast volume >150ml and heart failure.

**Author’s Contribution:**

<table>
<thead>
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<th>Concept &amp; Design of Study:</th>
<th>Dost Muhammad</th>
</tr>
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<tr>
<td>Drafting:</td>
<td>Farida Khudaidad, Farhan Faisal</td>
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<tr>
<td>Data Analysis:</td>
<td>Fazal-ur-Rehman, Riaz-ud-Din, Abdul Ghaffar</td>
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<td>Revisiting Critically:</td>
<td>Dost Muhammad, Farida Khudaidad</td>
</tr>
<tr>
<td>Final Approval of version:</td>
<td>Dost Muhammad</td>
</tr>
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**Conflict of Interest:** The study has no conflict of interest to declare by any author.

**REFERENCES**

Comparing the Outcomes of Manual Instrumentation and Rotary Technique in Term of Instrumentation Time and Quality of Root Canal Obturation in Single Rooted Teeth

Hafiz Rabbi ul Ehsan¹, Dil Rasheed³, Muhammad Junaid², Beenish Abbas⁴, Faisal Nawaz Khan¹ and Zahid Dildar¹

ABSTRACT

Objective: To compare the outcomes of manual procedure with rotary technique in term of quality of root canal obturation in patients presented with single rooted teeth.

Study Design: Randomized controlled trial.

Place and Duration of Study: This study was conducted at the Military Dental Center Abbottabad, Pakistan from September 2019 to December 2019.

Materials and Methods: Eighty teeth of male and female patients with ages 20 to 60 years were enrolled and divided equally into two groups. Group I consist of 40 teeth and rotary method was applied. Group II with 40 teeth and manual instrumentation was done. Post obturation radiographs were done to examine the difference in length, density and taper of root canal filling by using T-score. Time taken for instrumentation and canal filling was recorded and compare the findings between both groups. SPSS version 24.0 was used for data analysis.

Results: There were 50 (62.5%) females and 30 (37.5%) male patient’s teeth with mean age 32.25±11.68 years. We found a significant difference in term of obturation quality between both groups with p-value 0.008. In group I, 15 (37.5%) patients had T-score 2 and 20 (50%) had T-score 3 while in group II, 13 (32.5%) patients had T-score 2 and 8 (20%) patients had T-score 3, a significant difference was observed between both techniques with p-value <0.05. Instrumentation time was higher in group II as compared to group I (20.2 min Vs 10.6 min) with p-value <0.05.

Conclusion: Rotary method in term of quality of root canal obturation was better as compared to manual technique.

Key Words: Root canal, Rotary technique, Manual method, Obturation quality


INTRODUCTION

Root canal obturation is an essential stage of root canal treatment aimed to seal the root canal in order to prevent future bacterial contamination/recontamination of the canal space.¹ Many obturation methods have been introduced over the years, each attempting to provide a better seal of the root canal.²

¹ Department of Surgery / Maxillofacial Surgery, Military Dental Center Abbottabad.
² Department of Operative Dentistry, Bahria Medical and Dental College Karachi/PNS Shifa, Karachi.
³ Department of Operative Dentistry, Army Medical College Rawalpindi.

Correspondence: Hafiz Rabbi ul Ehsan, Consultant Dental Surgeon, Military Dental Center Abbottabad Pakistan.
Contact No: 0322-4504671
Email: hafizrabbi@hotmail.com

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Printed: March, 2020

All have in common the assumption that the root canal is properly cleaned and shaped before the obturation stage. It is assumed by all that if the root canal is not adequately prepared and if tissue remnants and debris are present along the walls, proper sealing may be jeopardized, even with the best root canal filling method.³,4 When simple, narrow, straight root canals with round cross-sections are considered, most current rotary nickel-titanium file systems will adequately clean and shape the canal with favorable results. The case is different in oval, flat, or curved root canals. In flat root canals, rotary file systems often fail to adequately clean and shape the canal, leaving “fins” that may have not been prepared.²,4 In such a case, even warm gutta-percha obturation methods will fail to adequately seal the root canal (4). Clinical mesiodistal radiographs will fail to detect such discrepancy.

Quality of obturation is one of the characteristic determinant in the prognosis of root canal treatment. One of the ways to judge the quality of endodontic treatment is by periapical radiographic evaluation...
which is the most common method used for assessment so far. Radiographic quality of the endodontic treatment can be evaluated on the basis of three parameters which include length, homogeneity and taper of the root canal filling visible on radiographs.\textsuperscript{5,6}

Although several researches have been conducted among the undergraduates, graduates and postgraduates for the evaluation of the obturation quality using different methods of canal preparation (manual/rotary), but the results are quite variable.\textsuperscript{7,10}

MATERIALS AND METHODS

After taking ethical approval, study was conducted at Military Dental Center Abbottabad, Pakistan from 1\textsuperscript{st} September 2019 to 31\textsuperscript{st} December 2019. A total of 80 patients of both genders with ages 20 to 60 years required root canal treatment for single rooted were included in this study. Patients detailed demographic were recorded after taking informed written consent. Patients with multi-rooted teeth, patients with apical pathology and those root canals with curvature more than 30 degrees were excluded. All the patients selected from OPD were randomly divided into two groups using computer generated randomization scheme.

Group I consist of 40 teeth and rotary method (Universal Protaper Niti files, Dentsply Maillefer) followed by F1, F2, or F3 Gutta Percha (Dentsply Maillefer) was applied. Group II with 40 teeth and manual instrumentation (circumferential filing technique) with K and H files (Mani, Japan) followed by cold lateral condensation technique was done. The sealer was calcium hydroxide based (Apexit plus, Ivoclar Vivadent AG, Germany) and it was same for both groups. Post procedure intraoral periapical radiograph with paralleling device was done to examine the length, density and taper of root canal filling. T-score scoring system was applied, 0 score for inadequate and 1 for adequate. Patients with all three parameters were adequate marked as score 3, patients with two parameters were adequate marked as score 2, patients with any one parameter were adequate marked as score 1 and those with none of parameter was inadequate marked as score 0. Time taken for instrumentation and canal filling was recorded. All procedures were done by same operator to reduce operator related bias. The periapical radiographs were evaluated by two different operators separately who were blinded to the procedure type. The intra observer differences were not significant. Data was analyzed by SPSS 24. Chi square test was done to compare the T-score and instrumentation time between both groups with p-value <0.05 was taken as significant.

RESULTS

In Group I, 28 (70%) patients were females and 12 (30%) were males with mean age 31.95±10.64 years and in group II, 22 (55%) patients were females and 18 (45%) patients were males with mean age 30.38±9.45 years. No significant difference was observed between both groups regarding age and gender (Table 1).

According to the instrumentation time taken it was higher in group II as compared to group I (20.2 min Vs 10.6 min) with p-value <0.05. Mean filling time was also higher in group II as compared to group I (3.25 min Vs 1.6 min) with p-value <0.05 (Table 2).

Table No.1: Age and gender wise distribution between both groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group I</th>
<th>Group II</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>31.95±10.64</td>
<td>30.38±9.45</td>
<td>0.07</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12 (30%)</td>
<td>18 (45%)</td>
<td>N/S</td>
</tr>
<tr>
<td>Females</td>
<td>28 (70%)</td>
<td>22 (55%)</td>
<td>N/S</td>
</tr>
</tbody>
</table>

Table No.2: Comparison of instrumentation time and canal filling time between both groups

<table>
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<tr>
<th>Variable</th>
<th>Group I</th>
<th>Group II</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumentation Time</td>
<td>10.6</td>
<td>20.2</td>
<td>0.001</td>
</tr>
<tr>
<td>Filling Time</td>
<td>1.6</td>
<td>3.2</td>
<td>0.01</td>
</tr>
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</table>

Table No.3: Comparison of length, density and taper of root canal filling between both groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group I</th>
<th>Group II</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>Adequate</td>
<td>31 (77.5%)</td>
<td>30 (75%)</td>
</tr>
<tr>
<td></td>
<td>Inadequate</td>
<td>9 (22.5%)</td>
<td>10 (25%)</td>
</tr>
<tr>
<td>Density</td>
<td>Adequate</td>
<td>34 (85%)</td>
<td>28 (70%)</td>
</tr>
<tr>
<td></td>
<td>Inadequate</td>
<td>6 (15%)</td>
<td>12 (30%)</td>
</tr>
<tr>
<td>Taper</td>
<td>Adequate</td>
<td>34 (85%)</td>
<td>11 (27.5%)</td>
</tr>
<tr>
<td></td>
<td>Inadequate</td>
<td>6 (15%)</td>
<td>29 (72.5%)</td>
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</tbody>
</table>

Table No. 4: Quality of obturation regarding T-score between both groups

<table>
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<th>T-score</th>
<th>Group I</th>
<th>Group II</th>
<th>P-value</th>
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<tbody>
<tr>
<td>3</td>
<td>20 (50%)</td>
<td>8 (20%)</td>
<td>0.0001</td>
</tr>
<tr>
<td>2</td>
<td>15 (37.5%)</td>
<td>13 (32.5%)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5 (12.5%)</td>
<td>16 (40%)</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>3 (7.5%)</td>
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</table>

According to the post obturation quality of root canal we found that 31 (77.5%) in group I and 30 (75%) patients in group II showed adequate length of root canal filling while 9 (22.5%) and 10 (25%) patients had inadequate in group I and II. No significant difference was observed regarding length of root canal filling(RCF) between both groups with p-value 0.2. No significant difference was observed regarding density of RCF between both groups (p-value >0.05), in group I 34 (85%) patients and in group II 28 (70%) patients...
were adequate while 6 (15%) and 12 (30%) patients showed inadequacy in group I and II. We found a significant difference regarding taper of root canal filling between both groups with p-value 0.0001 (34 (85%) in group I and 11 (27.5%) in group II had adequate findings while 6 (15%) and 29 (72.5%) had inadequacy in group I and II (Table 3). In group I, 15 (37.5%) patients had T-score 2, 20 (50%) had T-score 3, 5 (12.5%) had T-score 1 and none of patient had T-score 0. In group II 13 (32.5%) patients had T-score 2, 8 (20%) patients had T-score 3, 16 (40%) had score 1 and 3 (7.5%) had score 0. A significant difference was observed between both groups regarding T-score with p-value 0.01 (Table 4).

**DISCUSSION**

In present study 80 patients of both genders were enrolled to compare the outcomes of rotary method with manual K and H file instrumentation in term of quality of obturation. There were 50 (62.5%) female and 30 (37.5%) male patient’s teeth with mean age 32.25±11.68 years. These results were similar to the study by Jalees et al13 regarding comparison of rotary procedure versus manual method and they reported female patients were in high numbers 56.67% as compared to males and average age of patients was 33.3 ± 7.4 years in group I and 37.6 ± 12.9 years in group II. In present study we found that patients treated with rotary method had less instrumentation time as compared to manual k-file technique with p-value <0.001. A study conducted by Babaji et al16 reported that manual technique taking higher instrumentation time as compared to rotary method. They reported a significant difference between both techniques with p-value <0.05. In our study we found no significant difference was observed regarding length of root canal filling between both groups with p-value 0.2. 31 (77.5%) in group I and 30 (75%) patients in group II showed adequate length of root canal filling while 9 (22.5%) and 10 (25%) patients had inadequate in group I and II. We found no significant difference was observed regarding density of RCF between both groups (p-value >0.05), in group I, 34 (85%) patients and in group II 28 (70%) patients were adequate. These results were similar to many of previous study in which no significant difference was observed between rotary and manual method regarding length of Root canal filling and density of RCF.12-14 We found a significant difference regarding taper of root canal filling between both groups with p-value 0.0001 (34 (85%) in group I and 11 (27.5%) in group II had adequate findings while 6 (15%) and 29 (72.5%) had inadequacy in group I and II). These results were similar to the study by Jalees et al13, in which they reported a significant difference regarding taper of RCF between both methods with p-value <0.05. Many of other studies showed significant improvement regarding taper of root canal filling after applying rotary methods and manual technique. These studies were reported that rotary method was much better and effective as compared to manual technique.15-17

In present study we used scoring system (T-score) to compare the quality of root canal obturation between both procedures and we found a significant difference between both procedures with p-value 0.0001. We found that 87.5% patients who received rotary method had T-score 2 and 3 and none of patient had score 0 while in patients whom were received manual technique 13 (32.5%) patients had T-score 2, 8 (20%) patients had T-score 3, 16 (40%) had score 1 and 3 (7.5%) had score 0. These results were similar to several previous study in which rotary method showed better quality of root canal obturation as compared to manual technique.18-21 A study by Samady et al12 reported rotary method had better obturation quality as compared to manual K-files technique.

**CONCLUSION**

Rotary method in term of quality of root canal obturation was better as compared to manual technique. We found no significant difference regarding length and density of root canal filling between both procedures however, regarding taper of RCF a significant better result was observed in rotary method as compared to manual technique.

**Author’s Contribution:**

Concept & Design of Study: Hafiz Rabbi ul Ehsan

Drafting: Dil Rasheed, Muhammad Junaid

Data Analysis: Beenish Abbas, Faisal Nawaz Khan, Zahid Dildar

Revisiting Critically: Hafiz Rabbi ul Ehsan, Dil Rasheed

Final Approval of version: Hafiz Rabbi ul Ehsan

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

**REFERENCES**


Neurological Outcome after Surgical Management of Tethered Cord Syndrome

Muhammad Aqeel Natt¹, Saba Akram² and Muhammad Shakir¹

ABSTRACT

Objective: To determine neurological outcome after surgical management of tethered cord syndrome.

Study Design: Descriptive case series study

Place and Duration of Study: This study was conducted at the Department of Neurosurgery, Punjab Institute of Neurosciences Lahore from April 2017 to October 2017.

Materials and Methods: Fifty patients with tethered cord syndrome and radiographic evidence of tethered cord syndrome on magnetic resonance imaging of 10 years to 30 years with either gender and patients of myelomeningocele or myeloschisis were included. Patients previously operated for detethering of TCS and now presenting with recurrence or symptoms of tethered cord syndrome and who have systemic illness (uncontrolled diabetes, hypertension, ischemic heart disease) and not fit for general anesthesia were excluded. Lumbosacral MRI and baseline investigations were done. Number of patients with back pain, disturbed motor function and urinary incontinence were noted. Laminectomy and detethering of spinal cord under operative microscope was done. Patients were followed for 6 month postoperatively for outcome variables i.e. improvement in back pain, motor function, urinary incontinence.

Results: There were 30 (60.0%) male and 20 (40.0%) female patients with mean age was 36.6±10.7 years. Fifty (100.0%) patients had severe back pain at preoperatively and 50 (100.0%) patients had moderate pain postoperatively. Twelve (24.0%) patients had Grade—1 motor function and 38 (76.0%) patients had Grade-2 motor function preoperatively while 5 (10.0%) patients had Grade-3 motor function, 20 (40.0%) patients had Grade-4 motor function and 25 (50.0%) patients had Grade-5 motor function postoperatively. Fifty (100.0%) patients had urinary incontinence preoperatively and 33 (66.0%) patients had urinary incontinence and 17 (34.0%) patients had no urinary incontinence postoperatively. Thirty five (70.0%) patients had improvement in back pain, 18 (36.0%) patients had improvement in motor function and 17 (34.0%) patients had improvement in urinary incontinence at six month follow up.

Conclusion: The back pain, motor function and urinary incontinence improve postoperatively in the majority of patients. The rate of symptomatic improvement was greatest for back pain, followed by motor, and then urinary improvement.

Key Words: Tethered cord syndrome, neurological outcome, back pain, motor function, urinary incontinence

INTRODUCTION

Tethered cord is a phrasing regularly utilized in writing that alludes to a short, thickened, and tight filum terminale, just as any pathology, which keeps the spinal rope from physiological rising.

1. Department of Neurosurgery Unit-III, Punjab Institute of Neurosciences, Lahore.
2. Department of Radiology, Avicenna Medical and Dental College Lahore.

Correspondence: Dr. Muhammad Aqeel Natt, Senior Registrar, Neurosurgery Unit-III, Punjab Institute of Neurosciences, Lahore.
Contact No: 0321-7769840
Email: aqeelnatt@gmail.com

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Accepted: December, 2019
Printed: March, 2020

While optional tying is created by a scar in the zone of the dysraphism coming about because of post careful conclusion of the injury, which thusly does not allow ordinary cranial relocation of the conus inside the vertebral channel, and prompts axonal anoxia bringing about neural dysfunction.¹ Tethered cord syndrome (TCS) comprises strong bond of the distal spinal cord to nearby structures, resulting in redundant spinal string footing amid truncal developments. Clinical indications of TCS incorporate sphincter unsettling influences, lumbosacral pain, sensorimotor shortfalls and orthopedic deformation. The point of the investigation is to survey the neurological result of surgical treatment of TCS.² Tethered cord syndrome, frequently found in childhood, could be an improvement anomaly impeding a longitudinal development of spinal line than can be combined with different shade of spinal dysraphism.³
Surgical untethering aims the restoration about craniocaudal operation regarding the spinal twine in system in imitation of prevent the in addition development about symptoms, in imitation of restoration urological function, then according to enhance pain. Investigations using electrophysiologic and urodynamic studies are useful because shortly detection over delicate characteristic cord tethering or retethering. In most studies, pain was the first symptom to improve followed in turn by motor symptoms and urinary dysfunction. According to Graces-Ambrossi et al, 30% at 6 months follow up had improved urinary symptoms, 69% assumed 40% at 6 months follow up.

**MATERIALS AND METHODS**

This descriptive case series conducted at Department of Neurosurgery, Punjab Institute of Neurosciences Lahore from 1st April 2017 to 31st October 2017 on 50 patients with TCS and radiographic evidence of TCS on MRI of 10 years to 50 years with either gender and patients of meningocele or mylomeningocele with radiographic evidence of TCS on MRI were included. Patients previously operated for detethering of TCS and now presenting with recurrence or signs and symptoms of TCS and not fit for general anesthesia were excluded from this study. Demographic details Lumbosacral MRI and baseline investigations were done. Number of patients with back pain, disturbed motor function and urinary incontinence were noted. Laminectomy and Surgical untethering aims the restoration regarding neurological function, urinary incontinence.

**RESULTS**

There were 30 (60.0%) male and 20 (40.0%) female patients with mean age was 36.6±10.7 years. Fifty (100.0%) patients had severe back pain at preoperatively and 50 (100.0%) patients had moderate back pain postoperatively. Twelve (24.0%) patients had Grade-1 motor function and 38 (76.0%) patients had Grade-2 motor function preoperatively while 5 (10.0%) patients had Grade-3 motor function, 20 (40.0%) patients had Grade-4 motor function and 25 (50.0%) patients had Grade-5 motor function postoperatively. Fifty (100.0%) patients had urinary incontinence preoperatively and 33 (66.0%) patients had urinary incontinence and 17 (34.0%) patients had no urinary incontinence postoperatively. Thirty five (70.0%) patients had development in back pain, 18 (36.0%) patients had improvement in motor function and 17 (34.0%) patients had improvement in urinary incontinence at six month follow up.

**DISCUSSION**

Surgical untethering aims the restoration regarding craniocaudal mobility on the spinal twine in order in imitation of stop the in addition development of symptoms in imitation of reserve neurological function, or according to enhance judgement. The present study showed mean age 36±10.7 years with age range 10-50 years. While Garces-Ambrossi et al showed mean age 38±13 years.

<table>
<thead>
<tr>
<th>Back pain</th>
<th>Preoperative</th>
<th>Postoperative</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Mild pain</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moderate</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Severe</td>
<td>50</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Table No.1:** Distribution of patients by preoperative and postoperative back pain (n=50)

<table>
<thead>
<tr>
<th>Motor function (MRC Scale)</th>
<th>Preoperative</th>
<th>Postoperative</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Grade-0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Grade-1</td>
<td>12</td>
<td>34.0</td>
</tr>
<tr>
<td>Grade-2</td>
<td>38</td>
<td>76.0</td>
</tr>
<tr>
<td>Grade-3</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Grade-4</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Grade-5</td>
<td>-</td>
<td>25</td>
</tr>
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</table>

**Table No.2:** Distribution of patients by preoperative and postoperative motor function (n=50)

<table>
<thead>
<tr>
<th>Urinary incontinence</th>
<th>Preoperative</th>
<th>Postoperative</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Yes</td>
<td>50</td>
<td>100.0</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
<td>31</td>
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</tbody>
</table>

**Table No.3:** Distribution of patients by preoperative and postoperative urinary incontinence (n=50)

<table>
<thead>
<tr>
<th>Neurological status</th>
<th>Preoperative</th>
<th>Postoperative</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Improvement in back pain</td>
<td>35</td>
<td>70.0</td>
</tr>
<tr>
<td>Improvement in motor function</td>
<td>18</td>
<td>36.0</td>
</tr>
<tr>
<td>Improvement in urinary incontinence</td>
<td>17</td>
<td>34.0</td>
</tr>
</tbody>
</table>

**Table No.4:** Frequency of improvement in neurological status after six month follow up (n=50)
40% patients had improvement in motor function.
According to current analysis 34.0% patients had improvement in urinary incontinence after 6 months follow up. As compared with the study of Garces-Ambrossi et al, 30% patients had improvement.

CONCLUSION
The back pain, motor function and urinary incontinence postoperatively improved in greater number of patients.

Author’s Contribution:
Concept & Design of Study: Muhammad Aqeel Natt
Drafting: Saba Akram
Data Analysis: Muhammad Shakir
Revisiting Critically: Muhammad Aqeel Natt, Saba Akram
Final Approval of version: Muhammad Aqeel Natt

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

REFERENCES
Correlation Between Calcium Phosphorus Product and Carotid Intimal-Medial Thickness in Patients of Chronic Kidney Disease Presenting to a Tertiary Care Hospital

Haroon Ayub, Muhammad Farooq Mehr Ghulam and Muhammad Faisal Hashmi

ABSTRACT

Objective: To determine the correlation between Calcium Phosphorus product and carotid intimal-medial thickness in patients of chronic kidney disease presenting to a tertiary care hospital.

Study Design: Cross sectional study.

Place and Duration of Study: This study was conducted at the Department of Nephrology, Shaikh Zayed Hospital Lahore from 29-10-2016 to 28-04-2017.

Materials and Methods: One hundred and ten chronic kidney disease patients presenting to the Nephrology Unit of Shaikh Zayed Hospital Lahore. Patients were either gender, having age ≥30 years and ≤60 years with chronic kidney disease for at least 3 months. Patients fulfilling the inclusion and exclusion criteria were enrolled in the study. An informed consent was taken from the patients before including them in the study. Demographics of the patient which include name, age, gender, and carotid intimal-medial thickness was recorded. Blood samples for estimation of serum calcium and phosphorous were taken by using aseptic measures and standard procedure by the researcher himself and were sent immediately to the laboratory for serum analysis. Results were collected the next day by the researcher and Confidentiality of the data was ensured. Pearson correlation coefficient was calculated to measure the correlation between calcium phosphorus product and mean arterial pressure.

Results: The mean age of the patients was 52.6±8.33 years. Gender distribution shows that 56.4% (n=62) were males while 43.2% (n=48) were females. The mean duration of chronic kidney disease (CKD) was 8.81 years. The mean calcium phosphorus product and carotid intimal medial thickness (CIMT) was 57.2±7.19 and 0.45±0.09 respectively. There was a positive correlation between calcium phosphorus product and CIMT with a Karl Pearson correlation coefficient of 0.671 with pvalue <0.001. Data stratified with regards to age, gender and duration of CKD.

Conclusion: Calcium phosphorus product is positively correlated with carotid intimal medial thickness (CIMT) in patients with chronic kidney disease (CKD).

Key Words: Calcium phosphorus product, carotid intimal medial thickness, chronic kidney disease

Citation of article: Ayub H, Ghulam MF, Hashmi MF. Correlation between Calcium Phosphorus Product and Carotid Intimal-Medial Thickness in Patients of Chronic Kidney Disease Presenting to a Tertiary Care Hospital. Med Forum 2020;31(3):57-60.

INTRODUCTION

Disorders of calcium and phosphorus metabolism play an important role in the development of secondary hyperparathyroidism in patients with chronic kidney disease (CKD). These disturbances not only lead to mineral bone disease (renal osteodystrophy) but are predispose to cardiovascular disease. Calcium and phosphorus homeostasis is of utmost importance in maintaining a normal milieu in CKD patients. Disorders of calcium and phosphate can importance in maintaining of normal milieu in CKD patients. Disorders of calcium and phosphate can culminate in calcification of cardiac valves and acceleration of formation of vascular plaques. Abnormalities of calcium and phosphorus in CKD result in vascular calcification. This vascular calcification is associated with poor cardiovascular outcome. Vascular calcification can manifest itself in the form of arterial stiffness or atherosclerosis. Arterial stiffness leads to increased afterload and precipitates left ventricular heart failure. Increased atherosclerosis on the other hand results in plaque formation. Atherosclerosis can be identified by various techniques like measurement of carotid intimal...
medial thickness (CIMT) by ultrasonography, CT scan and latero-abdominal plain radiography. Calcium and phosphorus product is related to vascular calcification. Hyperphosphatemia, secondary hyperparathyroidism and metastatic calcification are all involved in the formation of atheromatous plaques in carotid vessels. These plaques can be analyzed by measuring CIMT.

**MATERIALS AND METHODS**

This study was carried out at Nephrology Department Shaikh Zayed Hospital Lahore from 29-10-2016 to 28-04-2017. Patients with either gender, having age ≥30 years and ≤60 years and with chronic kidney disease for at least 3 months were included. Patients with primary or tertiary hyperparathyroidism determined by serum PTH levels >70mg/L, known history of peripheral vascular disease, malignancy or diagnosed with calciphylaxis, diabetic patients (fasting BSR >126mg/dL) or taking antidiabetic drugs, history of previous carotid surgery, ischemic heart disease or stroke, current smokers or history of smoking during last year were excluded. Patients fulfilling the inclusion and exclusion criteria were enrolled in the study. An informed consent was taken from the patients before including them in the study. Demographics of the patient which include name, age, gender, medical registration number, address and contact number was recorded. Carotid intimal-medial thickness was determined as per operational definition by consultant radiologist and was noted in the proforma as well. Blood samples for estimation of serum calcium and phosphorous were taken by using aseptic measures and standard procedure by the researcher himself and were sent immediately to the laboratory for serum analysis. Results were collected the next day by the researcher and Confidentiality of the data was ensured. Pearson correlation coefficient was calculated to measure the correlation between calcium phosphorus product and mean arterial pressure. Data was stratified for age, gender and duration of CKD to deal with effect modifiers. Post stratification Karl Pearson correlation coefficient was applied.

**RESULTS**

The mean age of the patients was 52.6±8.33 years. 99 (90%) patients had age 40-60 years, while 11 (10%) patients had age 18-39 years (Table 1). Gender distribution shows that 62 (56.4%) were males while 48 (43.2%) were females (Table 2). The mean duration of chronic kidney disease (CKD) was 8.81 years. The mean calcium phosphorus product and carotid intimal medial thickness (CIMT) was 57.2±7.19 and 0.45±0.09 respectively. There was a positive correlation between calcium phosphorus product and CIMT with a Karl Pearson correlation coefficient of 0.671 with pvalue <0.001 (Table 3). After stratifying the data for gender the correlation coefficient between calcium phosphorus product and CIMT was 0.390 in males and 0.873 in females (Table 4). When stratified with respect to duration of CKD the correlation coefficient between calcium phosphorus product and CIMT was 0.587 in patients having CKD for < 5 years, while the coefficient was 0.988 in patients having CKD for > 5 years (Table 5).

<table>
<thead>
<tr>
<th>Table No.1: Age distribution (n=110)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
</tr>
<tr>
<td>18-39</td>
</tr>
<tr>
<td>40-60</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Mean ± SD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table No.2: Gender distribution (n=110)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table No.3: Correlation between calcium phosphorus product and CIMT (n=110)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation</td>
</tr>
<tr>
<td>Ca x P</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.05 level (2-tailed).**

<table>
<thead>
<tr>
<th>Table No.4: Stratification of correlation between calcium phosphorus product and CIMT with regards to gender (n=110)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>MALE</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Ca x P</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>FEMALE</td>
</tr>
<tr>
<td>N</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.05 level (2-tailed).**
**DISCUSSION**

This cross sectional study was conducted to calculate the correlation between calcium phosphorus product and CIMT in patients with CKD in a tertiary care hospital. Mineral bone disease is a very common problem in patients with CKD. Cardiovascular disease is highly prevalent in patients with CKD. Vascular calcification leading to arterial stiffness and atherosclerosis is the main culprit for cardiovascular disease and mortality in patients with CKD. Carotid intimal medial thickness is non-invasive parameter to judge the amount of atherosclerosis in the vasculature. CIMT is also correlated to cardiovascular health in these patients.

The mean age of the patients was 52.6±8.33 years. 90% (n=99) of the patients had age 40-60 years, while 10% (n=11) of patients had age 18-39 years. This showed that most of the patients were above 40 years of age depicting the burden of disease in old age. In a study reported by Sharma, the mean age of patients was 46.2±15.3 which is comparable with our study. Gender distribution shows that 56.4% (n=62) were males while 43.2% (n=48) were females. In a similar study reported by Sharma, 57 were male and 43 patients were female which is comparable with our study. The patients were thus more or less equally distributed with respect to age. The mean duration of chronic kidney disease (CKD) was 8.81 years.

The mean calcium phosphorus product and carotid intimal medial thickness (CIMT) was 57.2±7.19 and 0.45±0.09 respectively. The recommended calcium phosphorus product in CKD is less than 55. Thus our patients had mean product above the recommended limit. This depicts the unsatisfactory and inadequate control of mineral bone disease in CKD in our part of the world and warrants tight scrutiny by nephrologists in this regard. The mean CIMT was also on the higher side highlighting the increased burden of cardiovascular disease in CKD in our patients.

There was a positive correlation between calcium phosphorus product and CIMT with a Karl Pearson correlation coefficient of 0.671 with p value 0.000. This positive correlation is in concert with previous studies in this regard. After stratifying the data for gender the correlation coefficient between calcium phosphorus product and CIMT was 0.390 in males and 0.873 in females. These figures are very interesting depicting increased correlation in females as compared to males. Although males are at a higher risk of cardiovascular disease than females, this scenario was reversed in our study. The reason could be the loss of cardio-protective factors in females with CKD leading to increased atherosclerosis.

When stratified with respect to duration of CKD the correlation coefficient between calcium phosphorus product and CIMT was 0.587 in patients having CKD for <5 years, while the coefficient was 0.988 in patients having CKD for >5 years. This showed that as the duration of CKD increases, the amount of vascular calcification increases. This culminates into increased atherosclerosis.

**CONCLUSION**

Calcium phosphorus product is positively correlated with carotid intimal medial thickness (CIMT) in patients with chronic kidney disease (CKD).

**REFERENCES**


Correlation Between Vitamin D Levels and Hemoglobin Levels in Patients with End-Stage Renal Disease on Maintenance Hemodialysis

Muhammad Faisal Hashmi, Haroon Ayub, Muhammad Farooq Mehr Ghulam and Salman Rauf

ABSTRACT

Objective: To study the correlation between Vitamin D levels and hemoglobin levels in patients with End-Stage Renal Disease on maintenance hemodialysis.

Study Design: Cross sectional study.

Place and Duration of Study: This study was conducted at the Dialysis Unit, Nephrology Department, Shaikh Zayed Hospital Lahore from 18-06-2017 to 17-01-2018.

Materials and Methods: This cross sectional study was performed from 18-06-2017 to 17-01-2018. A total of 119 patients were selected in Hemodialysis Unit, Shaikh Zayed Hospital Lahore. Participants were selected through non probability consecutive sampling technique. Samples for serum vitamin D and hemoglobin levels were taken immediately before dialysis.

Results: The mean age of the patients was 44.42±11.09 years. 49.6% (n=59) of the patients had age 18-44 years, while 50.4% (n=60) of patients had age 50-70 years. Vitamin D levels were positively correlated with hemoglobin levels with Pearson correlation coefficient of 0.728.

Conclusion: Vitamin D levels are positively correlated with hemoglobin concentrations in ESRD patients on maintenance hemodialysis.

Key Words: Vitamin D, Hemoglobin, ESRD

INTRODUCTION

Anemia is a condition with lower red blood cell mass in the blood. Red blood cells carry oxygen to tissues and organs throughout the body and remove carbon dioxide from the tissues. Anemia is a common clinical condition encountered in medical practice. Chronic kidney disease is defined as kidney damage or glomerular filtration rate less than 60ml/min/1.73m² for greater than 3 months. CKD is a worldwide public health problem. Anemia commonly occurs in patients with CKD. As CKD progresses there is increased prevalence of anemia, with nearly all patients with CKD stage 5 having anemia.

Anemia in CKD is associated with reduced quality of life and increased incidence of cardiovascular disease, hospitalizations and mortality. Anemia in CKD is usually normocytic, normochromic and is thought to be mainly due to deficiency of erythropoietin in the body. Erythropoietin is a hormone which is principal regulator of erythropoiesis. It is normally produced by interstitial fibroblasts in the renal cortex, in close proximity to tubular epithelial cells and peritubular capillaries. Hepatocytes and perisinusoidal stellate cells in the liver can produce erythropoietin.

When measured, erythropoietin levels are inappropriately low or normal in CKD patients with anemia. When measured in patients with anemia without CKD, these levels are 10-100 times higher than the normal levels.

Vitamin D is a lipid soluble vitamin in the body known to have pleiotropic effects on various organs, owing to its receptors on various organs. In addition to its role on calcium and phosphorus levels in the blood and effect on bone metabolism, it has shown protective role in CKD patients. Patients with CKD and reduced vitamin D levels have shown to have increased incidence of anemia. The possible mechanisms are as follows.

1. High local concentrations of 1,25dihydroxyvitamin D in hematopoietic tissues directly activate erythroid
premature cells (BFU-E) in a paracrine fashion. Hence, reduced vitamin D levels lead to anemia (2) Inflammatory cytokines influence erythropoiesis in CKD. Vitamin D inhibits inflammatory cytokines and hepcidin production thus improving iron availability (3) Vitamin D deficiency is associated with secondary hyperparathyroidism, which is known to induce bone marrow fibrosis and suppress erythropoiesis in CKD patients.7

Anemia in CKD is treated with Erythropoiesis Stimulating Agents (ESA). They are given parenteral to achieve hemoglobin levels up to 11mg/dl. Iron supplements are also needed to replenish iron stores in the body.8 Parenteral iron has shown better results than oral iron in End Stage Renal Disease (ESRD) patients undergoing maintenance hemodialysis. Many patients with CKD show hypo-responsiveness to ESA and require higher doses than usual. This hypo-responsiveness has been postulated to decreased levels of vitamin D in the body.9

**MATERIALS AND METHODS**

It is a cross sectional study conducted in Dialysis Unit, Nephrology Department, Shaikh Zayed Hospital Lahore from 18-06-2017 to 17-01-2018 between 18 to 70 years of age. 119 patients were admitted in the Department of Nephrology through OPD & Emergency. 10ml venous sample was taken immediately before dialysis in selected patients. This sample was sent to laboratory to calculate vitamin D and hemoglobin levels. Age, gender and duration of dialysis were recorded. Quantitative variables included age, hemoglobin levels, vitamin D levels, BMI and eGFR and was expressed as mean±standard deviation.15 Qualitative variables included gender, presence of DM and hypertension and were expressed as frequencies and percentages. Data was used to assess the correlation between hemoglobin and vitamin D levels in ESRD patients on maintenance hemodialysis. Karl Pearson correlation coefficient was used to calculate correlation between vitamin D levels and hemoglobin levels. Data was stratified with respect to age, gender, BMI, duration of dialysis, diabetes and hypertension. Post stratification Pearson correlation coefficient was applied with p <0.05 as significant.

**RESULTS**

The mean age of the patients was 44.42±11.09 years. 49.6 % (n=59) of the patients had age 18-44 years, while 50.4% (n=60) of patients had age 50-70 years(Table 1).Gender distribution shows that 62.2% (n=74) were males while 38.7%(n=45) were females (Table 2). The mean duration of dialysis was 3.92 years. The mean hemoglobin and vitamin D levels were 9.94mg/dl and 8.49ng/ml respectively. The mean BMI of patients was 25.54 and mean eGFR was 4.38ml/min (Table 3). 59.7% (n=71) of the patients had diabetes and hypertension (Table 4). There was a positive correlation between hemoglobin and vitamin D levels with Karl Pearson correlation coefficient of 0.728 (Table 5). When data was stratified with respect to age, patients with age 18-44 years had correlation coefficient of 0.945 as compared to a coefficient of 0.500 of patients aged 45-70 years (Table 6).

**Table No.1: Age Distribution (n=119)**

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-44</td>
<td>59</td>
<td>49.6</td>
</tr>
<tr>
<td>45-70</td>
<td>60</td>
<td>50.4</td>
</tr>
<tr>
<td>Mean±SD</td>
<td>44.42±11.09</td>
<td></td>
</tr>
</tbody>
</table>

**Table No.2: Gender Distribution (n=119)**

<table>
<thead>
<tr>
<th>Gender</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>74</td>
<td>62.2</td>
</tr>
<tr>
<td>Female</td>
<td>45</td>
<td>37.8</td>
</tr>
</tbody>
</table>

**Table No.3: Demographic Data of Patients with Mean±SD (n=119)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of Dialysis (Years)</td>
<td>3.92±1.80</td>
</tr>
<tr>
<td>Hemoglobin Levels (mg/dl)</td>
<td>9.94±1.20</td>
</tr>
<tr>
<td>Vitamin D Levels (ng/ml)</td>
<td>8.49±2.12</td>
</tr>
<tr>
<td>Mean BMI</td>
<td>25.54±4.50</td>
</tr>
<tr>
<td>Mean eGFR (ml/min)</td>
<td>4.38±1.62</td>
</tr>
</tbody>
</table>

**Table No.4: Frequency of Diabetes, HTN (n=119)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>71</td>
<td>59.7</td>
</tr>
<tr>
<td>No</td>
<td>48</td>
<td>40.3</td>
</tr>
<tr>
<td>HTN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>71</td>
<td>59.7</td>
</tr>
<tr>
<td>No</td>
<td>48</td>
<td>40.3</td>
</tr>
</tbody>
</table>

**Table No. 5: Correlation between Vitamin D and Hemoglobin Levels (n=119)**

<table>
<thead>
<tr>
<th>Vit. D</th>
<th>Hb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>11</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td></td>
</tr>
<tr>
<td>Pearson correlation</td>
<td>.728*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>119</td>
</tr>
</tbody>
</table>

Data was stratified with respect to gender, males had correlation coefficient of 0.738 as compared to a coefficient of 0.774 in female patients (Table 7). When data was stratified with respect to presence of diabetes, patients with diabetes had correlation coefficient of 0.612 as compared to a coefficient of 0.870 in patients without diabetes. When data was stratified with respect to presence of HTN, patients with HTN had correlation coefficient of 0.910 as compared to a coefficient of 0.489 in patients without HTN (Table 8).
When data was stratified with respect to duration of dialysis, patients with duration of dialysis 1-5 years had correlation coefficient of -0.395 as compared to a coefficient of 0.340 of patients on dialysis for 6-10 years. When data was stratified with respect to eGFR, patients with eGFR 1-5ml/min had correlation coefficient of 0.762 as compared to a coefficient of 0.687 of patients with eGFR 5.1-10 ml/min (Table 9).

**DISCUSSION**

This cross sectional study was carried out to calculate the correlation between hemoglobin and vitamin D levels in ESRD patients on maintenance hemodialysis. Anemia is a major problem in ESRD patients associated with increased cardiovascular disease and mortality.10 The mean age of the patients was 44.42±11.09 years. 49.6% (n=59) of the patients had age 18-44 years, while 50.4% (n=60) of patients had age 50-70 years. In a study reported by Nani et al, the mean age of the patients was 60 years which is slightly high with our study.11 In another similar study the mean age of the patients was 45.20±10.40 which is comparable with our study.11 A study reported by Filipov the mean age of the patients was 60.5 ± 10.9 which is comparable with our study.12 Gender distribution shows that 62.2% (n=74) were males while 37.8% (n=45) were females. (The mean duration of dialysis was 3.92 years. The mean hemoglobin and vitamin D levels were 9.94 mg/dl and 8.49ng/ml respectively. In a study done by Ammara, the Hb level increased significantly from 8.34±0.9 to 9.48±0.9 g/dl (P=0.000) which is comparable with our study.13 In another study reported by Ernst, the mean Hb was 12.5 g/dl which is comparable with this study.15 The mean BMI of patients was 25.54 and mean eGFR was 4.38ml/min. 59.7% (n=71) of the patients had diabetes and hypertension. In a similar study carried out by Ernst, the mean BMI was 30.4±4.4 which is comparable with this study.12 There was a positive correlation between hemoglobin and vitamin D levels with Karl Pearson correlation coefficient of 0.728. This showed that anemia is associated with reduced vitamin D levels in ESRD patients.7 Thus vitamin D deficiency could be a contributing factor in resistant anemia. When data was stratified with respect to age, patients with age 18-44 years had correlation coefficient of 0.945 as compared to a coefficient of 0.500 of patients aged 45-70 years. Younger patients had more strong association between hemoglobin and vitamin D levels. When data was stratified with respect to gender, males had correlation coefficient of 0.738 as compared to a coefficient of 0.774 in female patients. When data was stratified with respect to presence of diabetes, patients with diabetes had correlation coefficient of 0.612 as compared to a coefficient of 0.870 in patients without diabetes. Presence of diabetes was also not a major contributing factor. When

### Table 6: Stratification of Correlation Between Vitamin D and Hemoglobin Levels with Regards to Age (n=119)

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Value</th>
<th>Approx. sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 – 44</td>
<td>Pearson’s R.</td>
<td>.954</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>59</td>
</tr>
<tr>
<td>45 - 70</td>
<td>Pearson’s R.</td>
<td>.576</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>Pearson’s R.</td>
<td>.728</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>119</td>
</tr>
</tbody>
</table>

### Table 7: Stratification of Correlation Between Vitamin D and Hemoglobin Levels with Regards to Gender (n=119)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Value</th>
<th>Approx. sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Pearson’s R.</td>
<td>.738</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>74</td>
</tr>
<tr>
<td>Female</td>
<td>Pearson’s R.</td>
<td>.744</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>45</td>
</tr>
<tr>
<td>Total</td>
<td>Pearson’s R.</td>
<td>.728</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>119</td>
</tr>
</tbody>
</table>

### Table 8: Stratification of Correlation between Vitamin D and Hemoglobin Levels with Regards to HTN (n=119)

<table>
<thead>
<tr>
<th>HTN</th>
<th>Value</th>
<th>Approx. sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Pearson’s R.</td>
<td>.910</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>71</td>
</tr>
<tr>
<td>No</td>
<td>Pearson’s R.</td>
<td>.489</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>Pearson’s R.</td>
<td>.728</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>119</td>
</tr>
</tbody>
</table>

### Table 9: Stratification of Correlation Between Vitamin D and Hemoglobin Levels with Regards to eGFR (n=119)

<table>
<thead>
<tr>
<th>eGFR</th>
<th>Value</th>
<th>Approx. sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>Pearson’s R.</td>
<td>.762</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>94</td>
</tr>
<tr>
<td>5.1-10</td>
<td>Pearson’s R.</td>
<td>.687</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>Pearson’s R.</td>
<td>.728</td>
</tr>
<tr>
<td></td>
<td>No. of valid cases</td>
<td>119</td>
</tr>
</tbody>
</table>
was stratified with respect to presence of HTN, patients with HTN had correlation coefficient of 0.910 as compared to a coefficient of 0.489 in patients without HTN. Patients with hypertension had more strong correlation as compared to patients without hypertension. When data was stratified with respect to duration of dialysis, patients with duration of dialysis 1-5 years had correlation coefficient of 0.762 as compared to a coefficient of 0.687 of patients on dialysis for 6-10 years. Hemoglobin was negatively correlated with vitamin D levels in patients with duration of dialysis 1-5 years. However it was positively correlated once duration increased to 6-10 years. Hemoglobin was negatively correlated with vitamin D levels in patients with duration of dialysis 1-5 years. However it was positively correlated once duration increased to 6-10 years. When data was stratified with respect to BMI, patients with BMI 15-25 had correlation coefficient of 0.784 as compared to a coefficient of 0.801 of patients with BMI. There was no difference in correlation when data was stratified with regards to BMI.

When data was stratified with respect to eGFR, patients with eGFR 1-5ml/min had correlation coefficient of 0.762 as compared to a coefficient of 0.687 of patients with eGFR 5.1-10 ml/min. No major difference was found in correlation after stratifying data with regards to eGFR.

CONCLUSION

Hemoglobin levels are positively correlated with vitamin D levels in ESRD patients on maintenance hemodialysis with Pearson correlation coefficient of 0.728.

Author’s Contribution:
Concept & Design of Study: Muhammad Faisal Hashmi
Drafting: Haroon Ayub
Data Analysis: Muhammad Farooq Mehr Ghulam, Salman Rauf
Revisiting Critically: Muhammad Faisal Hashmi, Haroon Ayub
Final Approval of version: Muhammad Faisal Hashmi

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

REFERENCES

Quality of Sleep Among the Patients of Congestive Cardiac Failure and Factors Associated with Poor Sleep Quality

Syeda Misbah Batool1, Ayesha Shafqat1, Mohammad Fareed Khan2, Usama Bin Zubair4, Syed Azhar Ali3 and Hamza Bin Zubair5

ABSTRACT

Objective: To assess the quality of sleep in patients of congestive cardiac failure (CCF) and analyze the factors which can cause sleep disturbances.

Study Design: Cross sectional (correlational) study

Place and Duration of Study: This study was conducted at the cross sectional research was done at CMH Rawalakot from 1st January to 31st March 2018.

Materials and Methods: The study subjects consisted of CCF patients with New York Heart Association Class III or IV. Sleep disturbance was analysed through Pittsburgh Sleep Quality Index (PSQI). Association of gender, age, smoking, duration of illness and body mass index were assessed with sleep disturbances.

Results: Two hundred and sixty patients of CCF with NYHAC III or IV were included in the final analysis. 145 (55.7%) were male and 115 (44.3%) were female. Out of them, 117 (45%) had healthy sleep while 143(55%) had sleep disturbances at HA. After applying logistic regression we found that high BMI and long duration of illness was significantly associated with poor sleeping routines in patients with CCF.

Conclusion: Sleep disturbances were a commonly found in patients suffering from congestive cardiac failure. Patients with high Body mass index and chronic illness were at higher risk of having sleep problems as compared to other patients.

Key Words: Quality of Sleep, Congestive Cardiac Failure, Sleep Quality.

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INTRODUCTION

Congestive Cardiac Failure (CCF) is characterized by the inability of the heart to pump an adequate amount of blood to achieve the demands of the different organ systems. It is a chronic disease with poor outcome if not treated adequately in time. There is a worldwide rise in the prevalence of CCF in the past few years.1,2 More than five million people are suffering from this condition in the US.3 Situation in our part of the world is not different, rather worse.

Prevalence of CCF in Pakistan is found to be is 14.75% - 22.87% causing dramatic increase in hospitalization and increased stress on the health resources.3 Normal sleep is necessary for the maintenance of homeostasis. All chronic diseases affect the body physiology one way or another, influencing the sleep also.4,5 Previous research highlights both the objective and subjective components of the sleep disturbances among the patients of CCF. 79% of the CCF patients had poor sleep quality in a study done in Iran.6 Another similar study done in Brazil showed that 68.5% of the CCF patients had poor sleep with female predominance.7 Sharma et al. concluded that sleep disorders and sleep disordered breathing is common among the patients of CCF. Patients of CCF have increased peripheral and central chemoresponsiveness which promotes hyperventilation and hypocapnia leading to chronicrespiratory alkalosis. Another important factor contributing to chronichyperventilation is pulmonary vagalirritant receptors stimulation by pulmonary venous congestion. These factors lead to the breathing problems during sleep making the sleep quality poor.8 Sleep canal so be affected by the mental health issues encountered commonly in chronic diseases.9,10 Various local and foreign studies have concluded increased prevalence of anxiety and depression among

1 Department of Physiology, Al Nafees Medical College Islamabad.
2 Department of Cardiology / Psychiatry, Poonch Medical College Rawalakot.
3 Department of Psychiatry, Mater Misericordiae University Hospital Dublin Ireland.
4 Holy family Hospital Rawalpindi.

Correspondence: Syeda Misbah Batool, Senior Lecturer, Physiology, Al Nafees Medical College Islamabad.
Contact No: 03331524917
Email: dr.misbah83@gmail.com

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Accepted: December, 2019
Printed: March, 2020
patients of CCF leading to sleep disturbances. \(^{11,12}\) Sleep patterns if remained disturbed for more than 24 hours can modulate mood and cognition of an individual. \(^{13}\) Improvement in functional performance, mental health and quality of life among patients of CCF has also been associated with good quality of sleep in various studies done in the past. \(^{14,15}\)

A number of recent studies mention effects of factors like Female gender, low socioeconomic status, increasing age, presence of non cardiac co-morbidities, breathing difficulties and nocturia on quality of sleep in patients with CCF. These specific factors effect the sleep by changing mechanical physiological psychological as well as social domains of daily life.

The research rationale examines the general characteristic of sleep in the patients suffering from CCF and its associated factors.

**MATERIALS AND METHODS**

From 1st January to 31st March 2018 after the consent of Ethical Review Committee this cross sectional research was done at CMH Rawalakot. Informed consent acquired from the patients included in the study. Sample size was calculated by applying WHO Calculator by using population prevalence proportion of 79%. \(^6\) All patients more than 18 years of age with diagnosis of CCF by Framingham criteria for CCF and NYHA class III or IV had also been included in the research. And those patients who refused to participate or those with age less than 18 or those with NYHA class I or II were excluded from the study. Patients with psychiatric illness and substance abuse were excluded from the study. Patients with severe debilitating diseases like CRF, CLD or malignancies or those with an invasive procedure done in last six months or those who were failed to comprehend the PSQI had also been excluded. After applying the inclusion and exclusion criterion, 260 patients were assessed.

**Description of Instrument:** Different methods and questionnaires are used for assessment of quality of sleep. To measure the quality of sleep we used questionnaire as well as description of instrument. We used Pittsburgh Sleep Quality Index (PSQI) which is most commonly used. The PSQI is a useful tool to quantify the subjective Validated Urdu version of PSQI was applied. \(^{16}\) Sleep disturbance is showed by the global sum of “5” or more.

**Procedure:** The consenting subjects were provided with a detailed description of the study. Confounding variables were taken care of by detailed history taking about any current or previous physical or psychiatric illness and any current or previous evidence of illicit substance / drug use. Those subjects with confounding variables were excluded from the study. The PSQI questionnaire was administered to the subjects and were asked to answer the questions according to their condition in last one month.

The study parameters included age, gender, smoking, Duration of illness and BMI. 1 exceeding to 60 years was considered as high risk. The history of smoking was acquired people who were found saying “Yes” to the questions like “Do you smoke” or “Have you smoked tobacco products regularly, in other words, daily or nearly daily?” were defined as smokers. Overweight is defined as BMI of 24 or more. Socio demographic details of subjects were obtained through structured Performa. Descriptive statistics applied to obtain analysis of characteristics of subjects and PSQI score distribution. On the basis of results subjects were categorised by comparing good vs poor sleep quality.

**Statistical analysis:** Characteristics of participants and the distribution of the PSQI score were described by using the descriptive statistics. Participants were resulted by categorical compared by good vs poor sleep quality. Group variances in categorical correlates were assessed by Chi-square. Correlated factors were analysed by binary logistic regression. Data was analysed on Statistics Package for Social Sciences Version 20.0. usage of Chi-square was to determine the differences between groups. If \(p\) values were less than are equal to 0.05, differences were considered significant.

**RESULTS**

All the patients who reported with stage III or IV congestive cardiac failure were approached to participate

### Table No.1: Factors associated with sleep disturbance.

<table>
<thead>
<tr>
<th>Sociodemographic factors</th>
<th>Subjects with good sleep quality (PSQI-0-4)</th>
<th>Subjects with poor sleep quality (PSQI-5 or more)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 or less</td>
<td>83(70.9%)</td>
<td>88(61.5%)</td>
<td>0.111</td>
</tr>
<tr>
<td>&gt;60</td>
<td>34(29.1%)</td>
<td>55(38.5%)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>60(51.3%)</td>
<td>85(59.5%)</td>
<td>0.188</td>
</tr>
<tr>
<td>Female</td>
<td>57(48.7%)</td>
<td>58(40.5%)</td>
<td></td>
</tr>
<tr>
<td>Duration of Illness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;12 months</td>
<td>96(82.1%)</td>
<td>94(65.7%)</td>
<td>0.003</td>
</tr>
<tr>
<td>12 or more months</td>
<td>21(17.9%)</td>
<td>49(34.3%)</td>
<td></td>
</tr>
<tr>
<td>Tobacco smoking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoker</td>
<td>68(58.1%)</td>
<td>85(59.5%)</td>
<td>0.830</td>
</tr>
<tr>
<td>Non Smoker</td>
<td>49(41.9%)</td>
<td>58(40.5%)</td>
<td></td>
</tr>
<tr>
<td>BMI&lt;25</td>
<td>67(57.2%)</td>
<td>58(40.5%)</td>
<td>0.007</td>
</tr>
<tr>
<td>25 or more</td>
<td>50(42.8%)</td>
<td>85(59.5%)</td>
<td></td>
</tr>
</tbody>
</table>

---

Note: The table shows the number of patients with good and poor sleep quality categorized by different sociodemographic factors and the p-value indicates the significance of the differences.
in the study but after the application of criteria laid down in the start, 260 participants had completion of the PSQI. Mean age of the study participants was .145 (55.7%) were male and 115 (44.3%) were female. 117 i.e. (45%) of them were found to have healthy sleep while 143 i.e. 55% had been found with sleep disturbances. As shown in table 1 extended period of illness and high BMI had significant association with poor sleep quality when chi-square was applied. Table 2 shows that these parameters of long duration of illness and BMI were strongly associated with sleep disturbances on application of regression analysis while advancing age, smoking and gender had no such association on statistical analysis.

**DISCUSSION**

Psychiatric morbidity and disturbed sleep has been annexed with patients suffering from CCF. In multiple research works 11 Results of PSQI showed that 55% subjects of our sample size had sleep disturbances, which is endorsed by many studies done in different parts of the world.5,11,17,18 Disturbed breathing patterns, nocturia, use of medications and psychological issues are known to influence sleep patterns among CCF patients.19,20 Reason behind these may be related to nocturnal hypoxemia i.e. abnormally low concentration of oxygen in the blood during the night19, 21 or mental health issues as a result chronic nature of disease.10, 11, 12 Psychiatric disorders were found in patients of CCF is supported by local as well as foreign data.11,12 Sleep disturbances and psychiatric problems have a strong correlation.22 The vicious cycle between sleep disturbance and psychiatric manifestations becomes very challenging for the physicians.24,25 Though scope of our study is not to look for any psychiatric illness it is an established fact by now that these patients are at increased risk of mental health problems.11,12 Discussion on this aspect is essential because sleep is very complicated brain function having both neurological, physiological as well as psychological and social domains variantly. Azevedo et al. in 2015 did a study on patients suffering from heart failure to correlate quality of sleep and quality of life. A huge number of participants had poor sleep quality and poor sleep quality had a strong relationship with poor quality of life.15

Our study did not include the ‘overall or health related’ quality of life but our results were similar to their results in terms of more than half of the study population have poor quality of sleep on subjective psychometric tool. Chen et al. in 2209 performed a similar study in Taiwan and came up with the findings that people with heart failure 74% self-reported disturbances in sleep were found. Education, NYHA classification, social functioning, physical symptoms and perceived health were five predictors which were identified by applying hierarchical multiple regression analysis, accounting for 26.9% of variance in sleep disturbance.18 Though less percentage of patients from our sample reported sleep disturbances as compared to participants of Chen et al. but BMI and long duration of illness emerged as strong predictors of poor quality of sleep. Dos Santos et al. in 2012 did a study on patients with heart failure. 17 In current study a non probabilistic sample of 400 patients (mean age 57.8yrs , 64.8% with male gender, avg. education of 6.1 years, 82.5% in functional class II) with CCF are included. Associated main factors with sleep were nocturia, breathing difficulty and interrupted sleep at night. Sleep disturbance in CCF is multifactorial and these problems are linked with sleep disturbance. Nursing interventions are required for most of these disorders. Loetal. did a relevant work with very large sample size and inferred that reduced and unhealthy sleep quality are associated with higher risk of coronary artery disease however the correlation with long sleep was not found to be statistically significant.24 This supports our rationale behind this study that in order to prevent progression of underlying cardiac illness and improve overall quality of life, sleep of individuals should be given appropriate importance suffering from congestive cardiac failure. Patients of CCF with high BMI and longer duration of illness were more at a risk of having sleep problems as compared to the other patients.

**CONCLUSION**

Sleep disturbance with poor quality is a common finding in patients suffering from CCF. High BMI, longer duration of illness were risks of having sleep problems as compared to other patients. Poor subjective sleep quality was a common finding among the patients suffering from congestive cardiac failure. Patients of CCF with high BMI and longer...
duration of illness were more at a risk of having sleep problems as compared to the other patients.

**Author’s Contribution:**

Concept & Design of Study: Syeda Misbah Batool  
Drafting: Ayesha Shafqat, Mohammad Fareed Khan  
Data Analysis: Usama Bin Zubair, Syed Azhar Ali, Hamza Bin Zubair  
Revisiting Critically: Syeda Misbah Batool, Ayesha Shafqat  
Final Approval of version: Syeda Misbah Batool

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

**REFERENCES**

Outcome of Tumor Resection by Endoscopic Binarial Trans-Sphenoidal Approach in Pituitary Adenoma Patients

Muhammad Abubakar Yasin¹, Muhammad Aqeel Natt¹, Muhammad Shakir³ and Saba Akram³

ABSTRACT

Objective: To determine the frequency of complete tumor resection by endoscopic binarial trans-sphenoidal approach in pituitary adenoma patients presenting to a tertiary care hospital.

Study design: Descriptive case series

Place and Duration of Study: This study was conducted at the Department of Neurosurgery Punjab Institute of Neurosciences Lahore from July 2017 to December 2017.

Materials and Methods: Sixty patients with pituitary adenoma and either gender, age 25 to 60 years and diagnosis of pituitary adenoma by magnetic resonance imaging during last one year were included. Patients having previous surgery or intervention for any pituitary problems determined by history, diabetic patients determined by history and random blood sugar and any history of connective tissue disorders e.g. rheumatoid arthritis and SLE were excluded. Patients were followed for 6 week to determine the outcome i.e. no residual tumor left as determined by magnetic resonance imaging. Nasal trumpet maybe placed overnight. All patients were treated according to department protocols under general anesthesia and patients were followed for 6 week to determine the outcome i.e. no residual tumor left as determined by magnetic resonance imaging. Adenoma size was treated as effect modifier and data was stratified subsequently.

Results: The mean age was 50.02±8.2 years. Forty three (71.7%) patients were male and 17 (28.3%) females. Fifty six patients (93.3%) showed complete resection on MRI using endoscopic binarial trans-sphenoidal approach. There was no effect of age and gender of patient on outcome in sampled population. Tumor size significantly affected the outcome i.e. complete resection.

Conclusion: Endoscopic binaliar trans-sphenoidal approach for resection of pituitary adenoma is excellent at current sample size. As in our study, 93.3% patients showed complete resection. There was no effect of age and gender of patient on outcome in sampled population.

Key Words: Endoscopic binaliar trans-sphenoidal approach, Resection, Efficacy, Pituitary adenoma


INTRODUCTION

The transsphenoidal approach to pituitary adenoma resection was first performed by German Schloffer over 100 years ago.¹ Various modifications, such as the transnasal endoscopic approach to the Turkish saddle, have revolutionized tumor resection.² The endoscopic approach to the pituitary gland revised Sella’s visualization.

¹ Department of Neurosurgery, Punjab Institute of Neurosciences, Lahore.
² Department of Radiology, Avicenna Medical and Dental College Lahore.

Correspondence: Dr. Muhammad Aqeel Natt, Senior Registrar, Neurosurgery Unit-III, Punjab Institute of Neurosciences, Lahore.

Contact No: 0321-7769840

Email: aqeelnatt@gmail.com

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Printed: March, 2020

The panoramic view provided by the endoscope has no analogs compared to the traditional conical view of the microscope.³⁴ The integrity of tumor resection is an important part of surgical treatment of the pituitary gland with a macroadenoma, since it allows decompression of the optimal nerve structure.⁵ other methods of tumor resection include the endonasal transphenoidal microscopic approach, the sub-labial transphenoidal microscopic approach. In endoscopic bilateral trans-sphenoidal adenomectomy, a 4 mm or 2.7 mm endoscope is used and, through bilateral sphenoid ostia, the basement floor is open and the strings are exposed to expose adenoma. The tumor is removed in pieces and after removing the tumor, the basement floor is repaired using fascia, fat, bone, cartilage or prostheses.⁶ Different results were reported in different studies as a complete matching of tumors after endoscopic binary trans-spondylitic affection of pituitary adenoma. It can even be used to remove the tumor on the left side. In one study, the overall tumor removal was 78% (95% CI67–89%)⁷ whereas in another Canadian study, for
tumors with supracellular or paracellular extension, and without any science involvement and without intracellular. The degree of removal was 96%. In a study\(^1\) functional pituitary adenomas affection for the lungs using a pure endoscopic transferring technique, complete affection was achieved in 75.6% of all patients.\(^1,8-10\)

**MATERIALS AND METHODS**

This descriptive case series study was conducted on 60 patients with pituitary adenoma. The cases were collected from Outpatient Department of Neurosurgery Punjab Institute of Neurosciences Lahore from July 2017 to December 2017. The patients of either gender, age 25 to 60 years and diagnosis of pituitary adenoma by magnetic resonance imaging during last one year were included. Patients having previous surgery or intervention for any pituitary problems determined by history, diabetic patients determined by history and random blood sugar and any history of connective tissue disorders e.g. rheumatoid arthritis and SLE were excluded. A uniform protocol of surgery i.e. endoscopic binarial trans-sphenoidal approach was adopted for pituitary adenectomy. All patients were treated according to department protocols under general anesthesia and patients were followed for 6 week to determine the outcome i.e. no residual tumor left as determined by magnetic resonance imaging. The tumor was extracted piecemeal. After tumor removal, sellar floor was repaired using fascia, fat, bone, cartilage or prosthesis. Sphenoid sinus was packed with Surgical or fat. Nasal trumpet maybe placed overnight. All patients were treated according to department protocols under general anesthesia and patients were followed for 6 week to determine the outcome i.e. no residual tumor left as determined by magnetic resonance imaging.

**RESULTS**

In our study population 60 patients with mean age of 50.0±8.3 ranged from 25 to 60 years. In our study only 2 (3.3%) patients were 25-30 years in age whereas 25 (41.7%) patients were between 31 to 50 years and rest of 33 (55%) patients were 50 to 60 years. (Table 1)

Forty three (71.7%) patients were male whereas 17 (28.3%) were female. Among 34 patients (56.7%) tumor size was below 1cm, in 11 (18.3%) patients size was 1 to 4 cm however in 15 (25%) patients size was more than 4 cm. (Table 2).

Fifty six (93.3%) patients out of 60 had shown complete resection on MRI. (Table 3)

**DISCUSSION**

The completeness of tumor resection is an important part of the surgical treatment of pituitary macro adenomas because it allows decompression of the optimal neural structure.\(^5\) other techniques for tumor resection include microscopic endonasal trans-sphenoidal Approach, Microscopic sub labial trans-sphenoidal approach. We are currently using endoscopic binarial trans-sphenoidal approach in our hospital. Endoscopy is increasingly used in pituitary adenoma surgery with promising results and lesser complications. Rates of success are different in different populations. In endoscopic binarial trans-sphenoidal adenectomy, a 4mm or 2.7 mm endoscope is used and through bilateral sphenoid ostia, sellar floor is opened and dura is incised to expose the adenoma.

In our study, 56 patients (93.3%) out of 60 had shown complete resection on MRI. This implies that endoscopic binarial trans-sphenoidal approach for resection of pituitary adenoma is successful in our setting. Our study results are comparable with another previous study, which concluded that gross tumor removal was 78% (95% CI 67–89%)\(^6\) while in another Canadian study the degree of gross total removal for tumors with suprasellar or parasellar extension and without cavernous sinus involvement was 96% and for intrasellar lesions was 98%.\(^7\) In another study of functional pituitary adenomas resection by a purely endoscopic trans sphenoidal technique, complete resection was achieved in 75.6% of all patients.\(^1,8-10\)

**CONCLUSION**

Endoscopic binarial trans-sphenoidal approach for resection of pituitary adenoma is excellent at current sample size. As in our study, 93.3% patients showed complete resection. There was no effect of age and gender of patient on outcome in sampled population.

**Author’s Contribution:**

Concept & Design of Study: Muhammad Abubakar Yasin

Drafting: Muhammad Aqeel Natt

Data Analysis: Muhammad Shakir, Saba

---

**Table No.2:** Distribution of patients by Tumor size (n=60)

<table>
<thead>
<tr>
<th>Tumor size</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 cm</td>
<td>34</td>
<td>56.7</td>
</tr>
<tr>
<td>1-4 cm</td>
<td>11</td>
<td>18.3</td>
</tr>
<tr>
<td>&gt; 4 cm</td>
<td>15</td>
<td>25.0</td>
</tr>
</tbody>
</table>

**Table No.3:** Distribution of patients by complete resection (n=60)

<table>
<thead>
<tr>
<th>Complete resection</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>4</td>
<td>6.7</td>
</tr>
<tr>
<td>Yes</td>
<td>56</td>
<td>93.3</td>
</tr>
</tbody>
</table>
REFERENCES


Corrigendum

The institutions of authors of article titled ‘Examine the Incidence of Liver Cancer in Patients Presented with Hepatitis B Virus and Hepatitis C Virus Infection’ published in Med Forum Vol. 31 No.2, February, 2020 at pages 58-61 may be read as under:

Syed Waseem Ahmad Mujtaba¹,
Department of Medicine, Amna Inayat Medical College, Sheikhupura.

Awais Anwar²
Department of Physiology, Shahida Islam Medical & Dental College, Lodhran.

Abdul Matin Qaisar³
Department of Physiology, Niazi Medical & Dental College, Sargodha.
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In Original Article, It should consist of the following seven subheadings: Objective, Study Design, Place and Duration of study, Materials & Methods, Results, Conclusion & Key Words and should not more than 250 Words.

The second part consists of Introduction, Materials and Methods, Results, Discussion, Conclusion and References

References should be entered in text Vancouver Style in ascending order and in shape of numbers & superscript (e.g. 1,2,3,4)

INTRODUCTION
The start of the introduction should be Relevant. Reasons and Importance of the study should be clear. Give only strictly pertinent References and do not include data or conclusions from the work being reported.

MATERIALS & METHODS
The Population taken for the study should be uniform and Sample selection criteria should be reliable. Inclusion & Exclusion criteria should be clearly specified.

RESULTS
Present yours results in a logical sequence in the Text, Tables, Illustrations, figures and Graphs.

DISCUSSION
Emphasize the new and important aspects of the study and conclusions that follow from them.

CONCLUSION
In this link write the goals of the study.

RECOMMENDATIONS
When appropriate, may be included.

ACKNOWLEDGMENTS
List of all contributors who do not meet the criteria for Authorship, such as a person who provided purely technical help, writing assistance or department chair who provided only general support. Financial & Material support should be acknowledged.

REFERENCES
It should be in the Vancouver style. References should be numbered in the order in which they are cited in the text. At the end of the article, the full list of references should give the names and initials of all the authors. (if the authors are more than 6, then et al should be followed after the 6th name). Vancouver Style should be used like’ The healing of tissues by CO2 laser. Br J Surg 1971;58:222-5.

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