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CONTENTS

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Editorial

1. **College Campuses: Drug Abuse Havens** _____ 1
Mohsin Masud Jan

Original Articles

2. **An Audit of Un-booked Obstetric Patients and Their Outcome** _____ 2-5
1. Sadia Zahoor 2. Iffat Yasmin 3. Nadia Zaman
3. **Rheumatic Manifestation in Patients Presenting with Hepatitis C Virus (HCV) in a Tertiary Care Hospital** _____ 6-9
1. Aneeqa Ilyas 2. Umair Ashfaq 3. Sarwat Saif 4. Tooba Fatima
4. **Prevalence of Appendicitis in Patients with Right Iliac Fossa Pain Presented to General Surgery Department of DHQ TEACHING HOSPITAL BANNU KPK, Pakistan** _____ 10-14
1. Ajmal Shah Bukhari 2. Waqas Ahmad Khan 3. Tehmas Ahmad Khan 4. Wasim Ahmad
5. **Association Between Hyperhomocysteinaemia and Cardiovascular Diseases in Type-II Diabetes.** 15-17
1. Muhammad Ali Shakir 2. Syed Inayat Ali 3. Farhat Jafri
6. **Effect of Time Management Skills on Academic Performance of Medical Students** _____ 18-20
1. Shaur Sarfaraz 2. Muhammad Kashif Nisar 3. Erum Afaq
7. **Early Outcome of Hypoxic Ischemic Encephalopathy in Neonates Born at Nazeer Hussain Medical Complex Hyderabad** _____ 21-24
1. Deve Dass 2. Muhammad Nadeem Chohan 3. Jai Parkash
8. **Diagnostic Challenge of Carcinoma Breast on Core Biopsy – Role of p63 and Cytokeratin 8/18** _____ 25-28
1. Rubina Gulzar 2. Ruqaiya Shahid 3. Shazia Mumtaz 4. Yasra Memon 5. Farheen Danish
6. Talat Mirza
9. **Frequency of Various Skin Lesions in Patients Attending Civil Hospital Hyderabad** _____ 29-31
1. Mir Muhammad Sahito 2. Ikram Ahmad Fuh 3. Mushtaq Ahmad 4. Younas
10. **A biochemical and morphological comparison of the role of L- Arginine on the high saturated and unsaturated fat diet induced changes on adrenocortical cells of albino rats** _____ 32-35
1. Iram Qudous 2. Imtiaz Manzoor 3. Aisha Qamar
11. **Role of Micral Test For the Detection of Microalbuminuria** _____ 36-38
1. Amjad Ali 2. Muhammad Syed 3. Usman Ali 4. Muhammad Khalid
12. **To Determine the Effectiveness of Work Motivation, Through Communication Skills Training Program: A study of Medical Universities' Teachers at Karachi** _____ 39-42
1. Ambreen Qamar 2. Syed Inayat Ali 3. Faiza Ghuman 4. Muhammad Owais
13. **Hematological Side Effects of Sofosbuvir and Ribavirin Combination Therapy in Chronic Hepatitis C Patients** _____ 43-46
1. Waseem Sarwar Malghani 2. Farooq Mohyud Din Chaudhary 3. Asma Tameez ud Din
4. Anum Khakwani
14. **Comparison of Primary Success Rate between Pedicled and Propeller Flaps for the Coverage of Tibial Wounds** _____ 47-50
1. Kashif Ali 2. Muhammad Saleem Akhtar
15. **Diagnostic Utility of FNAC and Pathological Profile of Head and Neck Lesions** _____ 51-54
1. Nazar Muhammad Afridi 2. Mohammad Umar Shah 3. Syed Irfan Raza Arif 4. Muhammad Usman Anjum 5. Arshad Wahab Shah
16. **Comparison of Biometry Readings Taken by Intra Ocular Lens (IOL) Master and Sonomed in the Pakistani Population** _____ 55-58
1. Abdul Rasheed Khokar 2. Nargis Nizam Ashraf 3. Mehwish Hussain

17. Comparative Efficacy of Trimetazidine and Ranolazine in Patients with Angina _____	59-62
1. Khalil ur Rehman 2. Muhammad Amer Saeed 3. Tayyaba Gull 4. Muhammad Jahanzeb Khalil	
18. Comparing the Effectiveness of Lisinopril and Losartan Potassium in Treatment of Microalbuminuria in Newly Diagnosed Type II Diabetes Mellitus _____	63-66
1. Shabnam Seher 2. Arooj Iqbal 3. Tayyuba Irum	
19. Frequency of Current Smokers and ex-Smokers Among Patients of Pulmonary Tuberculosis ____	67-70
1. Noor Akbar 2. Sara Saleem 3. Nargis Noor 4. Masood Alam	
20. Association of Vitamin E in Pregnancy Induced Hypertension _____	71-74
1. Uzma Jamil 2. Muhammad Kamran Ali	
21. Comparison of Efficacy of Risperidone and Placebo in the Patients Suffering from Schizophrenia in Punjab, Pakistan _____	75-78
1. Tayyuba Irum 2. Shabnam Seher 3. Arooj Iqbal	
22. Reducing Operative Time in Scaphoid Fractures Reduction _____	79-82
1. Mirza Shehab Afzal Beg 2. Syed Sheeraz ur Rahman 3. Fahad Hanif Khan 4. Obaid-ur-Rehman	
23. Pattern of Hand Injuries in Accidents and Emergency Department of a Tertiary Care Hospital in Karachi _____	83-86
1. Mehtab Ahmed 2. Mirza Shehab Afzal Beg 3. Syed Sheeraz ur Rahman 4. Umer Zafar	
24. Comparison of Effects of 10% Zinger, 10% Fenugreek and 10% Garlic with Atorvastatin in Hypercholesterolemia Induced Rats _____	87-91
1. Jawed Iqbal 2. Farheen Hameed 3. Asad Jiskani 4. Mazhar ul Haque	
25. Association of Serum Adiponectin Levels With the Progression of Coronary Artery Disease ____	92-95
1. Muhammad Kashif Nisar 2. Erum Afaq 3. Riaz Ahmed Shahid	
26. Cytological study of Thyroid lesions by Fine-Needle Aspiration Cytology _____	96-99
1. Inayatullah Memon 2. Muhammad Hanif Memon 3. Aftab Memon	
27. Risk Factors & Outcome in Patients Admitted with Status Epilepticus in Tertiary Care Hospital _____	100-103
1. Dileep Kumar 2. Babar Bashir 3. Suresh Kumar 4. Anirudh Kumar 5. Munir Hussain Siddiqui 6. Shahid Iqbal	
28. Maternal Exposure to Steroid, Unknowing by Taking Medicine from Religious Ammil for Birth of Boy and the Risk of Oral Cleft in Newborn _____	104-107
1. Riasat Ali Nehra 2. Raafia Tafweez 3. Noor ul Mubeen	
29. Comitant Convergent Squint _____	108-110
1. Muhammad Tariq 2. Hira Ali	
30. Dyslipidemia and Resistance in Obese Diabetic and Non-diabetic Subjects _____	111-114
1. Syeda Ijlal Zehra Zaidi 2. Iqbalghmana Lateef 3. Sadia Islam	
Guidelines and Instructions to Authors _____	i-ii

Editorial**College Campuses: Drug Abuse Havens****MohsinMasud Jan**

Editor

There are nine million drug addicts in the country of which nearly two million are believed to be in the age of 15 to 25. Drug abuse is rapidly increasing in Pakistan, especially among youth including those in schools, colleges and universities, resulting in serious social and health implications.

The growing trend of drug abuse in education institutions has posed a serious threat to the lives of students. According to one survey, almost 50 per cent students of different educational institutions in Islamabad and Lahore are addicted to drugs, and majority of those students belong to elite class, having no issue of affordability. Drug abuse jeopardises student's health, both physically and mentally, because of which they cannot concentrate on their studies.

Drug trafficking once viewed largely as a social and criminal problem, has transformed in recent years into a major threat to the health and security of people and regions.

Young people are more susceptible to drug use. Young people often talk about the "highs" but may not be aware of the many "lows". The widespread availability of drugs in Pakistan left the souls of the youth as lifeless as they could be.

Each year the United Nation Office on Drugs and Crime (UNODC) selects theme for this year it is "Listen First". Listening to children and youth is the first step to help them grow healthy and safe. "Listen First" is an initiative to increase support for prevention of drug use that is based on science and is thus an affective investment in the well-being of children and youth, their families and their communities.

Majority of drug addicts usually start with soft drugs like chhaliya, gutka and pan, and then move to hard drugs like heroin, opium and cocaine, etc. The purchase of drugs or alcohol by young people is usually through dealers or 'agents', who are just a phone call away.

The reason why the number of drug addicts is increasing alarmingly is that the drug cartels in Pakistan are fully backed and supported by the powerful and the wealthy that have got ample influence. Apparently, police and drug mafia are colluding. Moreover, illicit drugs are easily, and cheaply available everywhere in Pakistan.

Often drug abuse is linked to factors such as risk taking behaviours that may involve experimenting with narcotics, smoking and alcohol, social isolation, stress, anxiety, depression, peer pressure (bad company), modern life style, hippy culture, unemployment, excessive pocket money by parents and lack of supervision and attention, the desire for social acceptance, boredom, curiosity, just to feel good, weak religious belief and lot of free time at their disposal, easy access to drugs at low prices, existence and presence of drug dens, to heighten sexual pleasure, to overcome frustration and or tragedies, use as pain medication and fashion.

Most of these drug addicts begin by seeking recreation from drugs that are highly addictive and lead to this anti-social habit. Eventually, the body starts to demand frequent use, until a time comes when the person can no longer function normally without the influence of such drugs.

Researches have proved that people who start smoking cigarettes and or drink alcohol at a young age are much more likely to experiment with illegal drugs than people who do not smoke or drink. "Efforts should be made to

control tobacco smoking in the country because it is the gateway to drug abuse."

While some of the physical effects of drugs might sound nice, they do not last long. Many people get depressed and start feeling sick. Physical health and sexual health of addicts weaken so rapidly that a young man of thirties looks like an old man of over-sixties. Drug use in general leads to a number of health problems, such as malnutrition, apathy, menstrual irregularities and irregular heart rhythm.

Here is economic breakdown of family, loss of self-confidence and will to work, loss of job, indulgence in crimes such as theft, and suicidal thoughts. Drug addicts are also more prone to accidents and are at higher risk of HIV/AIDS, hepatitis B and C, tuberculosis, suicide, overdose deaths and cardiovascular diseases. Married drug addicts have high probability of having mentally retarded and physically handicapped children. Young people who use cannabis are doubling their risk of psychotic symptoms like schizophrenia, hallucinations, hearing voices etc, he explained.

Parents can recognize the addict children by noting these symptoms: deep body maceration, strong loss of appetite, difficulty in breathing and fatigue, strong nervous disturbance, long home absences, much money demand, telling lie to get money, isolation, remaining away from others, long sleeping time, laziness, pale face, tremors in fingers, constipation, irregularities in work and studies, no interest in everyday life, red eyes, slurred speech, circles under the eyes, neglect of personal hygiene and marks and traces of abusing on the body.

No one should be stigmatized against because of his dependence on drugs. Law enforcement agencies must treat drug users as victims rather than criminals. Drug dependence is a disease, not a crime. The real criminals are the drug traffickers.

Awareness campaigns through mass media, essay contests, lectures and declamation contest in schools, colleges and universities should be run in order to create awareness about the ill effects of drug addiction.

Provincial education departments should develop a curriculum against drugs for inclusion in textbooks at school, college and university levels. Public awareness campaigns are needed to be run every day on television and radio. All television channels should devote 0.5 per cent of air time to raise awareness on the devastations of drug addiction. More recreational facilities should be created to take the youth off the drugs.

The need of hour is to come up with effective measures to curb this menace. Counsellors should be appointed in education institutions so that students can seek help when needed. Focal persons and vigilance committees should be appointed in education institutions. The anti-narcotics force should play a vigilant and active role and conduct combing operations at education institutions. Installing CCTV cameras at various points in schools, colleges and universities would also help the law-enforcement agencies spotting the group of students involved in the activity. Government agencies should come down hard on drug cartels, which is the only way to reduce the incidence of drug abuse in the country.

Parents should be vigilant and should keep their children busy and motivate them to say their prayers regularly.

An Audit of Un-booked Obstetric Patients and Their Outcome

Un-booked
Obstetric
Patients and
Their Outcome

Sadia Zahoor, Iffat Yasmin and Nadia Zaman

ABSTRACT

Objective: To assess the un-booked obstetric patients and their outcome presenting at Sheikh Zaid Hospital Rahim Yar Khan.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynecology Sheikh Zaid Hospital Rahim Yar Khan from March 2016 to September 2016.

Materials and Methods: Total 182 un-booked obstetric patients having age 18 to 35 years were selected. Patients having age >35 years, patients with any systemic disease like diabetes mellitus and hypertension on previous medical record, patients with ruptured uterus on the basis of history and examination, patients with 2 or more C-sections were excluded from the study. Women who have never attended or attended antenatal clinics only once or twice were considered as un-booked cases.

Results: Mean age of the patients was 26.87 ± 6.49 years. Total cases 82 (45%) were booked and un-booked cases were 100 (55%). Total vaginal deliveries were 71 (39%) and caesarean section was performed in 111 (61%) cases. Family income of 97 (53%) cases was Rs. <15000, family income of 57 (31.3%) cases was Rs. 15001 – 30000 and family income of 28 (15.4%) cases was Rs. >30000. Total 101 (55%) cases were primary para and 81 (45%) cases were multipara, 116 (64%) belonged to rural area and 66 (36%) belonged to urban area.

Conclusion: In present study, high percentage of un-booked obstetric patients was noted and in most of the cases c-section was performed. Insignificant association of mode of delivery with age, income status, area of residence and parity was noted. But significant association between education status and mode of delivery was observed.

Key Words: Un-booked, parity, antenatal care, Booked, Obstetric complications

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INTRODUCTION

Antenatal care is a perfect example of preventive medicine. The aim is to ensure the well-being of mother and child. The basic components of antenatal care have been defined as early and continuous risk management, health promotion, psychosocial intervention and follow-up.¹

Antenatal care is an important determinant of high maternal mortality rate and one of the basic components of maternal care on which life of mothers and babies depends.^{2,3}

Several studies conducted in developing countries on demographic and socio-cultural factors influencing the use of maternal health care services, have shown that factors like maternal age, number of living children, education, place of residence, occupation, religion and

ethnicity are significantly associated with the use of antenatal care.^{4,2}

The other factors like poor state of health services, widespread ignorance, pervading superstitions, traditional beliefs and customs and high hospital bills tend to make traditional medicine and faith based practices arguably more popular than orthodox obstetric practice in our communities. Evidence based medicine indicates that most pregnancy related maternal deaths could be averted with access to professional care during pregnancy and delivery care and puerperium, as well as access to emergency obstetric care in the event of complication.⁵

Conversely, various studies have associated lack of proper antenatal care with adverse maternal outcomes.⁶ Further, a study done in Nigeria has concluded that no antenatal care, parity, level of education, and mode of delivery were significantly associated with maternal mortality. While, Low maternal education, high parity, emergency caesarean delivery, and high risk patients risk independently predict maternal mortality.⁷

There is a high turnover of obstetric patients in south Punjab health care facilities with increasing number of un-booked obstetric cases. This study may help to reduce their morbidity and mortality in prevailing poor socio economic and low literate population of this region. As this aspect is not studied locally.

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MATERIALS AND METHODS

This cross sectional study was conducted at Department of Obstetrics & Gynecology Sheikh Zaid Hospital Rahim Yar Khan from March 2016 to September 2016. Total 182 un-booked obstetric patients having age 18-35 years both primary and multi paras were selected for this study. Patients having age >35 years, patients with any systemic disease like diabetes mellitus and hypertension on previous medical record, patients with ruptured uterus on the basis of history and examination, patients with 2 or more C-sections were excluded from the study.

Women who have never attended or attended antenatal clinics only once or twice were considered as un-booked cases.

An approval was taken from the institutional review committee of the hospital and written informed consent was taken from every patient.

Physical examination of all the patients was done and history was taken. Caesarean section was performed in case of fetal or maternal complication. Mode of delivery was noted on pre-designed proforma as Cesarean Section or vaginal delivery. Demographic profile of all the patients along with booking status, income status, area of residence, education status and parity was noted on proforma.

All the data was entered in SPSS version 18. The quantitative variables of the study i.e. age and gestational age were presented as Mean $\pm$ SD. The qualitative variables like booking status (booked or un-booked) outcome (in term of mode of delivery vaginal or by caesarean section), Income status, education status of the patients (educated or un-educated) and parity (primary para or multi para) were presented as frequency and percentages. Stratification was done for age, income status and residential area, education status and mode of delivery. Post stratification chi-square test was applied. P value ≤ 0.05 was considered as significance.

RESULTS

In present study mean age of the patients was 26.87 ± 6.49 years. Out of 182 cases, booked cases were 82 (45%) and un-booked cases were 100 (55%). (Fig. 1) Total vaginal deliveries were 71 (39%) and caesarean section was performed in 111 (61%) cases. (Fig. 2)

Stratification of mode of delivery in relation to age was done and two groups were made, age group 18-27 years and age group 28-35 years. Total 124 (60.13%) patients were belonged to age group 18-27 years and 58 (31.87%) patients belonged to age group 28-35 years. Vaginal delivery was done in 45 (36.29%) cases and 26 (44.83%) cases of age group of 18-27 years and 28-35 years respectively. Age of the patients was insignificantly ($P = 0.3281$) associated with mode of delivery. (Table 1)

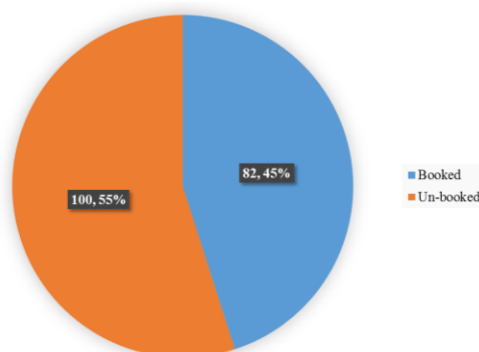


Figure No.1: Frequencies for booking status

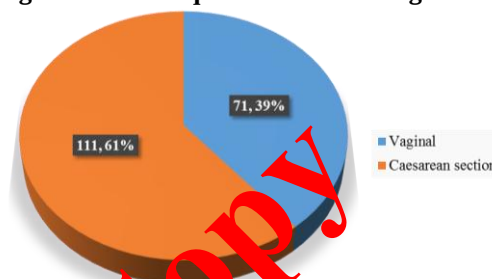


Figure No.2: Frequencies for mode of delivery

Table No.1: Stratification for mode of delivery in relation to age

Age	Mode of delivery		Total	P. value
	Vaginal (%)	caesarean section(%)		
18-27	45(36.29)	79(63.71)	124(60.13)	0.3281
28-35	26(44.83)	32 (55.17)	58(31.87)	
Total	71 (39)	111 (61)	182	

Table No.2: Stratification for mode of delivery in relation to income status

Income status	Mode of delivery		Total	P. value
	Vaginal (%)	caesarean section(%)		
<15000	40(41.24)	57(58.76)	97(53.3)	0.5627
15001-30000	19(33.33)	38(66.67)	57(31.3)	
>30000	12(42.86)	16(57.14)	28(15.4)	
Total	71(39)	111(61)	182	

Table No.3: Stratification for mode of delivery in relation to residential area

Residential area	Mode of delivery		Total	P. value
	Vaginal (%)	caesarean section(%)		
Rural	48 (41.38)	68 (58.62)	116 (63.74)	0.4313
Urban	23 (34.85)	43 (65.15)	66 (36.26)	
Total	71 (39)	111(61)	182	

Table No.4: Stratification for mode of delivery in relation to education status

Education status	Mode of delivery		Total	P. value
	Vaginal (%)	caesarean section (%)		
Un-educated	18 (48.65)	19 (51.35)	37 (20.33)	0.044
Primary	25 (48.08)	27 (51.92)	52 (28.57)	
Middle	12 (36.36)	21 (63.64)	33 (18.13)	
Matric	10 (38.46)	16 (61.54)	26 (14.29)	
Intermediate	2 (9.52)	19 (90.48)	21 (11.54)	
Above Intermediate	4 (30.77)	9 (69.23)	13 (7.14)	
Total	71 (39)	111 (61)	182	

Table No.5: Stratification for mode of delivery in relation to parity

Parity	Mode of delivery		Total	P. value
	Vaginal (%)	caesarean section (%)		
Primary Para	43 (42.57)	58 (57.43)	101 (55.5)	0.2882
Multipara	28 (34.57)	53 (65.43)	81 (44.5)	
Total	71 (39)	111 (61)	182	

Out of 182 patients, 97 (53.3%) patients belonged to Rs. <15000 income group and vaginal delivery was performed in 40 (41.24%) patients. Total 57 (31.3%) patients belonged to income group 15001 to 30000 and vaginal delivery was performed in 19 (33.33%) patients and 28 (15.4%) patients belonged to income group >30000 and vaginal delivery was performed in 12 (42.86%) patients. (Table 4)

Stratification of mode of delivery was done in relation to area of residence. Total 116 (63.74%) patients belonged to rural area and 66 (36.26%) patients belonged to urban area. Vaginal deliveries were done in 48 (41.38%) in patients of rural area and 23 (34.85%) vaginal deliveries were done in patients of urban area. Insignificant ($P = 0.4313$) association between mode of delivery and residential area was observed. (Table 3)

Stratification of mode of delivery in relation to education status was done. Total 37 (20.33%) patients were un-educated followed by primary pass were 52 (28.57%), middle (33 (18.13%), matric 26 (14.29%) intermediate 21 (11.54%) and above intermediate 13 (7.14%). Vaginal deliveries were performed in 18 (48.65%), 25 (48.08%), 12 (36.36%), 10 (38.46%), 2 (9.52%) and 4 (30.77%) in un-educated, primary, middle, matric, intermediate and above intermediate

patients. Significant ($P = 0.044$) association between education status and mode of delivery was noted. (Table 4)

Out of 182 patients, primary para was 101 (55.5%) and multipara was 81 (44.5%). Vaginal deliveries were performed in 43 (42.57%) primary para and 28 (34.57%) patients multipara. Insignificant ($P = 0.2882$) association between mode of delivery and parity was noted (Table 5).

DISCUSSION

The purpose of present study was to assess the un-booked obstetric patients and their outcome. In this study out of 182 cases, booked cases were 45% and un-booked cases were 55%. In one study by Kaur et al,⁹ the frequency of un-booked obstetric cases was 58%. Findings of this study is comparable with our study. Similarly Adelaja et al¹⁰ reported frequency of un-booked cases as 60.3%. Emole-Ohonsi A et al¹¹ reported high percentage (89.1%) of un-booked obstetrics patients.

In present study, most (53.30%) of the women belonged to low socio economic status. Mothers with low socioeconomic scale used to deliver more frequently at home with untrained health attendant in the developing world.¹² On the other side, mothers of high socioeconomic scale had higher number in booked group (26.20%) as compared to their counterpart group (0.63%). It reveals that financial issue which includes cost of antenatal services and transportation might be cited as one of the factor affecting utilization of antenatal care.¹³

In this study 51.49% women were un-booked and 37.04% multipars were un-booked which is comparable with study by Fawcus et al.¹⁴ This shows primiparous mothers are high risk patients. Comprehensive antenatal care should be provided to this group of patients to have better maternal and neonatal outcomes.¹⁵

In present study, total vaginal deliveries were 39% and caesarean section was performed in 61% cases. In one study, Kaur et al⁹ reported caesarean deliveries as 66.67% and vaginal deliveries as 33.34% which is comparable with our findings.

In present study, a higher number of patients belonged to younger age group. Most of the deliveries performed by caesarean section. No association ($P = 0.3281$) was detected between mode of delivery and age of the patients.

In one study the analysis of demographic factors among booked and unbooked mothers showed that young age ($p < 0.001$; 21-25 yrs) of mothers along with lack of awareness regarding importance of antenatal care & lack of education especially health education might have withdrawn them from taking antenatal care at an early gestational age or till the development of obstetric complication which had led them to fall into un-booked group.⁹ This issue is also documented by other studies

which concluded that women who are less than 25yrs old and less educated are more likely to register late.¹⁶⁻¹⁷

CONCLUSION

In present study, high percentage of un-booked obstetrics was noted and in most of the cases c-section was performed. Insignificant association of mode of delivery with age, income status, area of residence and parity was noted. But significant association between education status and mode of delivery was observed.

Author's Contribution:

Concept & Design of Study: Sadia Zahoor
Drafting: Iffat Yasmin
Data Analysis: Nadia Zaman
Revisiting Critically: Iffat Yasmin
Final Approval of version: Sadia Zahoor

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

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Rheumatic Manifestation in Patients Presenting with Hepatitis C Virus (HCV) in a Tertiary Care Hospital

Aneeqa Ilyas¹, Umair Ashfaq¹, Sarwat Saif² and Tooba Fatima²

ABSTRACT

Objective: To determine the frequency of Rheumatic manifestation in hepatitis C virus (HCV) infected patients.

Study Design: Cross sectional study

Place and Duration: This study was conducted at OPD & Indoor patients of Medicine Department, Mayo Hospital, Lahore for a duration of 6 months from 28.05.2015 to 28.11.2015.

Material And Methods: With approval from hospital ethical committee, 240 patients of age 20 to 60 years of either gender presenting with confirmed diagnosis of HCV diagnosed at least 6 months ago were included for the study with 95% confidence level, 6% margin of error and expected percentage of rheumatic manifestation 31% in patients. Data was entered in SPSS version 20 and analyzed through it as well. Quantitative variables like duration of HCV and age were calculated as standard deviation and mean. While qualitative variables like rheumatic manifestations such as arthritis or arthralgia, and gender were calculated as percentage and frequency. Stratification of data was done for gender, age of the patients, HCV duration and treatment taken for HCV. Post stratification, chi-square was applied to compare stratified group. P-value ≤ 0.05 was taken as significant.

Results: The mean age of patients in the study was 40.92 ± 12.20 years. The ratio of female to male patients was 1:2.3. 91.67% of the patients were on treatment for HCV infection and among them rheumatic manifestations were observed in 95 (39.6%) of patients. Statistically, there was significant difference between the rheumatic manifestation and patients' age i.e. p-value = 0.030

Conclusion: The study thus concluded that the prevalence of rheumatic manifestation was 39.6%, arthralgia was 15.4% and arthritis was 10% in patients presenting with HCV.

Keywords: Hepatitis C virus, HCV, Clinical Manifestation, Rheumatic, Arthritis

Citation of articles: Ilyas A, Ashfaq U, Saif S, Fatima T. Rheumatic Manifestation in Patients Presenting with Hepatitis C Virus (HCV) in a Tertiary Care Hospital. Med Forum 2017;28(8):6-9.

INTRODUCTION

Hepatitis C virus (HCV) has association with autoimmune phenomena. Since HCV infection can be accompanied by or be the cause of a number of autoimmune disorders, it is therefore suggested that HCV infection should be considered as one of the possible causes of rheumatological symptoms which remain unexplained in some patients.¹

Comparing to other chronic viral infections, Hepatitis C virus (HCV) infection is associated with various rheumatic manifestations as well as autoimmune investigations, such as sialadenitis, arthritis, arthralgias, vasculitis, fatigue, fibromyalgia, vasculitis, etc.²

Arthropathy is a frequent extrahepatic manifestation associated with HCV infection, accounting up to 20% in HCV-infected individuals.³

One study reported that the frequency of arthralgia / arthritis was 35% (out of 49 cases).⁴

But another study reported Rheumatic manifestations up to 31% (28 of 90) in subjects infected with HCV, of which arthralgias were 9%, arthritis was 4%.⁵

Rationale of this study is to assess the frequency of Rheumatic manifestation in patients presenting with hepatitis C virus (HCV). It has been observed in literature that multiple studies have ambiguous results regarding prevalence of rheumatic manifestation. Not much work has been done on finding the prevalence of rheumatic manifestation in HCV patients. Few studies are available which also contain controversy and there is no local evidence available.

MATERIALS AND METHODS

This cross sectional study was conducted at OPD & Indoor patients of Medicine Department, Mayo Hospital, Lahore.

Inclusion Criteria: Patients of age 20 to 60 years of either gender with confirmed diagnosis of HCV (as per operational definition) diagnosed at least 6 months ago.

Exclusion Criteria: Diabetic patients (BSR > 200 mg/dl), hypertensive cases (BP $\geq 140/60$ mmHg)

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- Patients having rheumatic heart disease (on medical record)
- Patients with other comorbid hepatitis like A, B, D, E, Delta or EB virus, etc. (on medical record)
- Primary autoimmune diseases like SLE, polymyositis, scleroderma, etc.
- Primary vasculitis syndrome: polyarteritis nodosa, microscopic polyangiitis, etc.
- Drug induced autoimmune pneumonia (on medical record)

With approval from hospital ethical committee, 240 patients of age 20 to 60 years of either gender presenting with confirmed diagnosis of HCV (HCV RNA >15 IU/mL positive on PCR) diagnosed at least 6 months ago were included for the study with 95% confidence level, 6% margin of error and expected percentage of rheumatic manifestation 31% in patients. Data was entered in SPSS version 20 and analyzed through it as well. Quantitative variables like duration of HCV and age were calculated as standard deviation and mean. While qualitative variables like rheumatic manifestations (3 or more of these in ≥ 5 joints i.e. joint pain, swollen joints, joint stiffness, redness, warmth, tenderness, and deformity on clinical examination), and gender were calculated as percentage and frequency. Stratification of data was done for gender, age of the patients, HCV duration and treatment taken for HCV. Post-stratification, chi-square was applied to compare stratified group. P-value ≤ 0.05 was taken as significant.

RESULTS

In the study, a total 240 cases were enrolled. The mean age of the patients was 40.92 ± 12.20 years with maximum and minimum ages of 60 and 20 years, respectively. Table#1

The study results showed that the mean duration of HCV of patients was 3.77 ± 2.24 years with maximum and minimum duration of 9 and 1 years, respectively. Table#1

In our study, male patients were 70.42% while female patients were 29.58%. The ratio of female patients to male patients was 1:2.3. Fig#1

In our study, 91.67% of the patients were with treatment while without treatment patients were 8.33%. Fig#2

In the study, 95 (39.6%) patients showed the rheumatic manifestation while it was not shown by 145 (60.4%) patients. Table#2

In this study, 91 patients of age < 35 years, rheumatic manifestation was found in 44 cases while 47 cases were normal. Similarly, in 149 patients of ≥ 35 years, rheumatic manifestation was observed in 51 cases while 98 cases were normal. Statistically there was significant difference in the age of patients and rheumatic manifestation i.e. p-value = 0.030 Table#3

The study also showed that the male patients were 169 in which rheumatic manifestation was found in 69 cases and it was not found 100 cases, similarly female

patients were 71 in which rheumatic manifestation was observed in 26 cases and it was not observed in 45 cases. Therefore, there was insignificant difference statistically between the sex and rheumatic manifestation i.e. p-value = 0.54 Table#3

In this study, patients with less than 5 years HCV duration patients were 191 in which rheumatic manifestation was found in 71 cases and it was not found 120 cases, similarly above 5 years HCV duration patients were 49 in which rheumatic manifestation was observed in 24 cases and it was not observed in 25 cases. There was significant difference statistically between the HCV duration and rheumatic manifestation i.e. p-value = 0.13 Table#4.

Table No.1: Descriptive statistics of Age (years) & Duration of HCV

Age (years)	N	240	HCV duration (years)	N	240
	Mean	40.92		Mean	3.77
	SD	12.20		SD	2.24
	Minimum	20.00		Minimum	1.00
	Maximum	60.00		Maximum	9.00

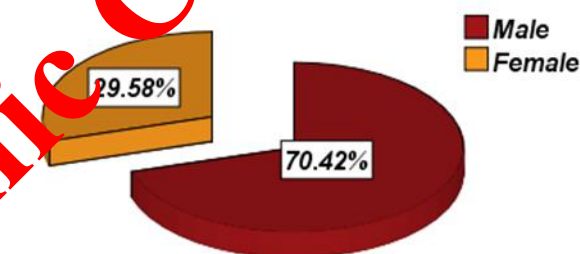


Figure No.1: Frequency distribution of gender

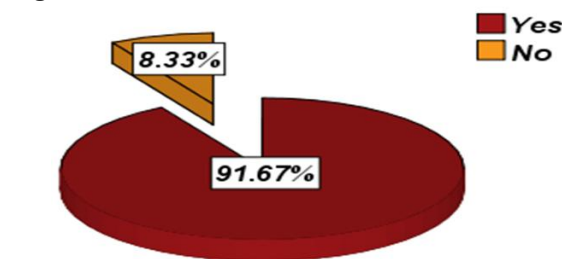


Figure No.2: Frequency distribution of treatment

Table No.2: Frequency distribution of rheumatic manifestation

Rheumatic manifestation	Frequency		Percent
	Yes	No	
	95	145	100.0

The study results showed that the patients with treatment were 220 in which rheumatic manifestation was found in 87 cases and it was not found 133 cases, similarly the patients without treatment were 20 in which rheumatic manifestation was observed in 8 cases and it was not observed in 12 cases. There was

insignificant difference statistically between the treatment of the HCV and rheumatic manifestation i.e., p-value=0.96 Table#4.

Table No.3: Comparison of rheumatic manifestation in different age groups& both genders

		Rheumatic manifestation		Total
		Yes	No	
Age (years)	Below 35	44	47	91
	Above 35	51	98	149
Total		95	145	240
Sex	Male	69	100	169
	Female	26	45	71
Total		95	145	240

Different Age Groups: Chi value=4.71&P-value=0.030 (Significant)

Both Genders: Chi value=0.37&P-value=0.54 (Insignificant)

Table No.4: Comparison of rheumatic manifestation according to HCV duration& Treatment

		Rheumatic manifestation		Total
		Yes	No	
HCV duration	Below 5	71	120	191
	Above 5	24	25	49
Total		95	145	240
Treatment	Yes	87	133	220
	No	8	12	20
Total		95	145	240

For HCV Duration: Chi value=2.27&P-value=0.13 (Insignificant)

For Treatment: Chi value=0.00&P-value=0.96 (Insignificant)

DISCUSSION

Hepatitis C virus infection is an important public health issue all over the globe. Around 170 million people worldwide have been infected with it since it was discovered (1989). In most of the developed countries, it has the prevalence of under 3%, but in Pakistan it ranges between 4-7%.^{6,7} The treatment of HCV-related arthritis is challenging. Arthralgia is a frequent symptom in HCV infection.⁸

In this study the patients with treatment were 91.67%. The rheumatic manifestations were observed in 95(39.6%) patients. Statistically there was significant difference between patients' age and rheumatic manifestation i.e. p-value=0.030.

A study by Sabiha Anis et al⁹ showed that the arthritis was in negative HCV patients was 3(30%) patients and in positive HCV patients the arthritis was found in 9(53%) patients. But, insignificant difference was seen

statistically between the arthritis of the patients and the study groups, in this study. i.e., p-value=0.177

A prospective study has shown that 20% of patients infected with HCV suffer from arthralgia during a 1-year follow-up period.¹⁰

RF positivity is approximately 70% to 80% in RA patients, but in HCV-associated arthritis, this positivity is between 54% and 82%.¹¹

Lovy MR et al¹² reported hepatitis C infection related rheumatic manifestations carry a close impression of rheumatoid arthritis. They concluded that the rheumatic manifestations of Hepatitis C infection can be difficult to distinguish from that of RA.

One study reported that the frequency of arthralgia / arthritis was 35% (out of 49 cases).⁴

But another study reported Rheumatic manifestations up to 31% (28 of 90) in subjects infected with HCV, of which arthralgias were 9%, arthritis was 4%.⁵

One study showed that different rheumatologic manifestations, such as sicca syndrome, vasculitis, arthritis and arthralgia are associated with the HCV infection.¹³

Many studies have reported that rheumatoid arthritis (which is a signature mark for rheumatic diseases) affected patients have high HCV infection prevalence.

In one study HCV antibodies were found in 23 (7.6%) of patients with RA, and among these, active infection with HCV was seen in 7 (2.3%) patients.⁸ But, contradictory results were also described.¹⁴

To note, arthritis is less frequently associated with HCV infection as compared to arthralgia,^{15,16} but different studies have reported patients with long standing polyarthritis, who meet American College of Rheumatology (ACR) criteria for RA were affected with HCV infection.^{12,17}

Cacoub et al.¹⁸ reported a 19% prevalence in a large population of patients with HCV infection. A frequent manifestation of rheumatism in long standing HCV infected patients is arthralgia.

CONCLUSION

Our study results concluded that the prevalence of rheumatic manifestation was 39.6%, in patients presenting with HCV. Now it has been proved that the frequency of rheumatic manifestations is high among HCV patients in local population. As well as, we have got local evidence which we will apply in local setting now.

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Author's Contribution:

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Data Analysis:	Umair Ashfaq

Revisiting Critically: Sarwat Saif, Tooba Fatima
Final Approval of version: Aneeqa Ilyas

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

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Prevalence of Appendicitis in Patients with Right Iliac Fossa Pain Presented to General Surgery Department of DHQ Teaching Hospital Bannu KPK, Pakistan

Ajmal Shah Bukhari¹, Waqas Ahmad Khan¹, Tehmas Ahmad Khan¹ and Wasim Ahmad²

ABSTRACT

Objective: The objective of the study was to know the number of cases of RIF pain presentation to General Surgery Department and the number of cases of appendicitis out of presented RIF pain Cases.

Study Design: Case series study

Place and Duration of Study: This study was conducted at the Department of General Surgery, Bannu Medical College Bannu from December 2016 to May 2017.

Materials and Methods: Records of patients aged 5-60+ years from surgical unit and Operation theater of DHQ teaching hospital were reviewed.

Results: Total number of cases presented with right iliac fossa pain along with nausea vomiting were 220 containing 57.7% Males and 42.3% females. Out of those 194 were diagnosed as Acute appendicitis of which 108(55.6%) and 86(44.3%) were male and female cases respectively. Acute appendicitis was mostly seen in teenagers with percentage of 49.9% collectively. Perforated cases recorded were 30% and rate of negative appendectomy was 16.6% overall. During study period not a single mortality associated with appendicitis was seen.

Conclusion: Acute appendicitis was mostly seen in Teenage Group i.e. 11-19 years old. Delay in diagnosis lead to perforated appendicitis leading to emergency and increase in complications. Most of the cases belonged to low socioeconomic class.

Key Words: right iliac fossa pain, acute appendicitis, negative appendectomy.

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INTRODUCTION

In any hospital setting functional emergency department is necessary and a backbone to provide initial management to patients who require acute management. Right Iliac fossa pain is a chief complaint among many chief complaints presented to Emergency Departments in various Hospitals.¹ Among many differentials of Right Iliac Fossa Pain, Acute Appendicitis is the major one and requires prompt management.

Appendix, a small tube, about 4 inches long, is often present at the junction of the small intestine and cecum (Larger intestine).¹ Till date the exact function of appendix is a big mystery.

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Often theorized are the beliefs that it may be a storehouse for good bacteria that may act as storehouse for spores that may replenish the intestinal normal flora. Others consider that appendix may be a useless leftover from evolutionary process. Often, the surgical removal of the appendix causes no health problems.¹

Acute Appendicitis is the inflammation of appendix. For unclear reasons, the appendix often becomes inflamed and infected.¹ Inflammation leads to severe pain in the right lower part of the belly along with nausea and vomiting. Acute Appendicitis is a surgical emergency that almost always requires prompt surgery to remove the appendix. Left untreated, an inflamed appendix will finally rupture, or perforate, leaking infective materials into the abdominal cavity. This can lead to peritonitis, defined as inflammation of the abdominal cavity's lining (the peritoneum) that can be fatal unless it is treated quickly with strong antibiotics.¹

The definitive symptoms of appendicitis include:

- 1) Dull pain near the navel or the upper abdomen that becomes sharp as it moves to the lower right abdomen. This is usually the first sign.
- 2) Loss of appetite
- 3) Nausea and/or vomiting soon after abdominal pain begins

- 4) Abdominal swelling.
- 5) Fever of 99-102 degrees Fahrenheit
- 6) Inability to pass gas

Almost half the time, other symptoms of appendicitis appear, including:

- 1) Dull or sharp pain anywhere in the upper or lower abdomen, back, or rectum
- 2) Painful urination and difficulty passing urine
- 3) Vomiting that precedes the abdominal pain
- 4) Severe cramps
- 5) Constipation or diarrhea with gas

The incidence of appendicitis is due to regional and racial difference². In United States there has been an increase in number of cases from 7.6% to 9.3%⁽²⁾ with a peak in teenagers³ however in Pakistan, epidemiological data is very scarce⁽³⁾ as most of studies have been on western population⁴⁻⁹, association of factors like eating habits, hygiene conditions have been suggested but are not widely accepted¹⁰

Obstruction is most common cause of appendicitis with fecolith or lymphoid aggregation being usual causes, gut organism invade appendix after lumen obstruction by lymphoid hyperplasia or fecolith leading to appendicitis.

The objective of the study was to evaluate

- 1) Number of cases presenting with Right Iliac Fossa Pain to DHQ Hospital Bannu.
- 2) Prevalence of Acute appendicitis among the presented cases of Right iliac Fossa pain.

Complications developed after patients underwent appendectomy.

MATERIALS AND METHODS

It was a case series study design was selected that was conducted from Dec, 2016 to May 2017. During these days, following work has been done i.e. data collection, analysis, and making interpretation about the result and to provide recommendations based on this study findings.

Sample Technique: Convenience sampling technique

Sample Size: Patients who were admitted in General Surgery ward of DHQ Hospital, Bannu during the period of Dec 2017 to May 2017.

Data Collection: Data records of the Patients was taken from the record room of DHQ Hospital Bannu for the aforementioned period and analysis was carried out by the researchers.

Inclusion/Exclusion Criteria: Patients with complaint of Pain in Right Iliac Fossa of Abdomen, nausea, vomiting, aged 5 to 60+, who were admitted in General Surgery Department of DHQ Hospital Bannu were included in our study and other admissions during the study period with other complaints were excluded.

Data Entry/Analysis: Data analysis was done using SPSS 20.0 and for the graphical presentation MS Excel version 2013 was used.

Scale used for diagnosis of Appendicitis: The Alvarado Scoring scale was used for diagnosis of acute appendicitis.

RESULTS

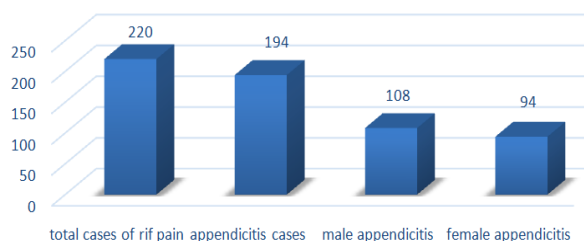
Table No.1: Alvarado Scoring scale

Characteristics	Points Given
Migration of Pain to Right Iliac Fossa	1
Anorexia	1
Nausea and Vomiting	1
Tenderness in Right Iliac Fossa	2
Rebound Tenderness	1
Elevated Temperature	1
Leukocytosis	2
Shift of White Blood Cell Count to Left	1
Total	10

Table No.2: Diagnostic Criteria

Total Score based on Alvarado scoring system	Diagnosis
Score <5	Appendicitis Unlikely
Score 5-6	Appendicitis Possible
Score 7-8	Appendicitis Likely
Score 9-10	Appendicitis Highly Likely

A total of 220 patients were presented to DHQ Hospital, Bannu with right iliac fossa pain and other symptoms mimicking acute appendicitis in time period ranging from Dec 2016 to 30 May 2017. Out of 220 patients 194 patients were diagnosed to be having acute appendicitis. Out of those 108 patients were male and 86 females comprising 55.67% and 44.32% respectively.



Graph No.1: Percentage ratio of Male and Females diagnoses with Acute Appendicitis

As the graph shows that total number of cases with right iliac fossa pain were 220 out of which 194 had inflamed appendix containing 108 male patients and 86 female patients.

Out of the included patients the age range was from 5 years old to more than 60 year old, the most patients belonged to the age group of 5 to 20 year group with almost 50% patients (n=96, 49.48%) followed by 21 to 30 years age group (n=54, 27.83%). The rate was lowest

in >50years age group and is (n=16,8.22%) collectively.

For both female and male groups appendicitis is most prevalent in the 11 to 20 years age group with rates of (n=50, 46.29% and (n=46, 53.48%) respectively and least prevalent in age > 50 years. Appendicitis was more common in males (n=108,55.67%) than females (n=86, 44.32%) and ratio among above is 1.255.

During our Study, We found that 29.89% cases were perforated appendicitis citing males (n=32,29.6%) and females (n=30.2%).while 32.989% cases got Post-OP wound infection with ratio of 33% males and 28% females.

Table No.3: Ratio of Male and Female Patients diagnosed with acute appendicitis in DHQ Hospital Bannu.

Age Group	Male Cases	Female Cases	Total
5-20	50(46.29%)	46(53.48%)	96(49.48%)
21-30	38(35.18%)	16(18.6%)	54(27.83%)
31-40	4(3.7%)	10(11.62%)	14(7.21%)
41-50	10(9.2%)	4(4.65%)	14(7.21%)
51-60+	6(5.55%)	10(11.6%)	16(8.24%)
total	108(55.67%)	86(44.32%)	194(100%)



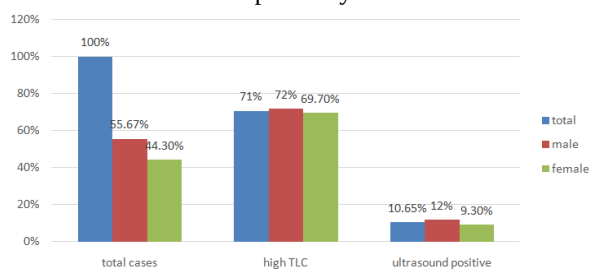
Graph No.2: Patient cases with post op wound infection or Perforation

Negative appendectomy, i.e patient with no inflamed appendix, were 34 cases about 17.25%, out of which male patients were 18 (16.6%) and female patients were 16(18.6%). Among all cases (220), 26 cases (11.81%) were having symptoms mimicking appendicitis but were other pathologies found during Surgery . Other pathologies in male were(n=18,14.2%) mostly seen in early age group, and female cases were (n=8,8.51%).

The socioeconomic status of our patients in study was of Average to Poor in 70-80% of cases.

High wbc count was seen in 70% of cases of male and 69.767% in female as noted from our record books.

And positive ultrasound finding were 12% in male and 9.3% in female cases respectively from available data.



Graph No.3: Investigative Finding in Patients

DISCUSSION

In our study there were total 220 cases with Right Iliac Fossa pain out of which 194 were diagnosed to be Acute Appendicitis. 108 male cases and 86 female case accounting for 55.6% and 44.3% respectively, which shows ratio of 1.12 indicating male preponderance also quoted in other studies¹¹. In our study, Appendicitis was mostly seen in patient with age group of 5-20 years with study giving result of 49%, (n=50,46.29%) and (n=46,53.48%) in males and females respectively. Studies from different part of world support these observation. Aslam MN et al observed similar results in Lahore Pakistan¹² while Noudeh YJ et also showed highest appendicitis incidence in males aged 20-29 and male aged 10-19 years in their study conducted in Tehran.¹³ Sulu B et al from turkey and I-omranet al from Canada also support these figures.^{14, 15}

In our study, rate of perforated appendix at time of presentation was 30% which may be due to delayed presentation at hospital level. Results were not much different from a similar study conducted by Omar sallaudinin, POF hospital wah cantt; Pakistan that revealed 33.3% perforated cases in their study.¹⁷

In our study, 32.94% cases had suffered from post operated wound infection where mostly seen in patients having perforated appendix. this high rate of wound infection was due to perforation and long stay of patients in hospital..

Negative appendectomy was 17.6% of the total cases, containing 16.6% male of all male cases and 18.6% females of all female cases that had undergone appendectomy. Our result was much lower from a similar study by Okobia et al. in Benin City, Nigeria who reported an incidence of 32.2% with representation of both males and females¹⁸. Similarly, Ogbonna et al. reported a negative appendectomy rate of 29.7% in males and 47% in females over a five year period in Nigeria¹⁹. Kakande and colleagues in Uganda reported a negative appendectomy rate of 29.5%²⁰. Gilmore in England reported a negative appendectomy rate of 22.5%²¹. In contrast with all these studies our study showed better results which is due to good clinical assessment better diagnostic sense.

70% of cases showed leukocytosis and only 10% showed positive ultrasound finding. Ultrasound is mostly used to exclude other pathologies otherwise the results don't show any convincing figure regarding ultrasound in appendicitis. A white cell count greater than $10,000/pL$ was observed in 82% cases of appendicitis by SudhaElangovan²². A study by Lau and colleagues showed 42 % increase in WBC count.²³

Other pathologies mostly seen in patients were mesenteric lymphadenitis and ascariasis in teenagers. In females ovarian endometriosis was seen after negative appendectomy. Few cases of intestinal TB were seen particularly ileo-cecal.

CONCLUSION

Quite a large number of Patients with acute abdomen have been diagnosed with Acute appendicitis. Our findings of the study are as under:

- 1) Appendicitis was most commonly seen in teenager i.e patients of age 11-20.
- 2) Delay in diagnosis lead to perforated appendicitis leading to emergency and increase in mortality
- 3) Majority of patients with acute appendicitis were of poor to average socioeconomic status
- 4) Mortality rate during our study was none indicating better and prompt diagnosis and treatment.

Recommendations: On basis of our study we recommend the following:

- 1) Awareness regarding abdominal pain and appendicitis may be provided to community to prevent complications due to acute appendicitis.
- 2) Prompt provision of necessary investigations and ease of access to health centers may lead to better treatment of Acute Appendicitis.
- 3) People with poor socioeconomic status visit hospital on prompt to prevent complications.
- 4) And Specialist/ Consultant Surgeon opinion may be taken on the suspected Appendicitis cases that are presenting to emergency department.
- 5) Alvarado Scoring Charts may be displayed in Emergency department leading to Prompt diagnosis of Acute appendicitis and prevention of complications

Author's Contribution:

Concept & Design of Study:	Ajmal Shah Bukhari
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Data Analysis:	Waqas Ahmad Khan
Revisiting Critically:	Tehmas Ahmad Khan, Wasim Ahmad
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Association Between Hyperhomocysteinaemia and Cardiovascular Diseases In Type-II Diabetes

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ABSTRACT

Objective: To study the relationship between cardiovascular diseases and increased level of homocysteine in Type II diabetes. Our study was aimed to find out the Hyperhomocystenemia as a marker for early prediction of Cardiovascular (CVD) diseases in patients suffering from Type II diabetes mellitus.

Study Design: Prospective study.

Place and Duration of Study: This study was conducted at Baqai Institute of Diabetology & Endocrinology (BIDE) and Agha Khan University (AKU), Karachi, Pakistan from July 2016 to Oct. 2016.

Materials and Methods: The study included a total of eighty (80) Type II diabetes (40 Males and 40 Females) and forty (40) healthy subjects were selected as Control. All biophysical parameters and biochemical tests were done using standard procedures.

Results: Body weight, body mass index (BMI) and waist circumference were found to be significantly ($p < 0.01$) increased when compared with control values. The triglyceride, total homocysteine and fasting plasma glucose (FPG) were markedly high in diabetes as compared to control. The Vitamin B12 and Folic acid levels were significantly ($p < 0.05$) decreased in diabetes as compared to control values.

Conclusion: The outcome of this study reveals that high homocysteine level, high triglyceride level and decreased Vitamin B12 and Folic acid levels can be categorized as strong risk factor for early cardiovascular diseases.

Key Words: Homocystein, glucose, Type-II diabetes, triglycerides, vitamin B12, cardiovascular disease.

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INTRODUCTION

Diabetes Mellitus (DM) is a disease of long term duration due to deficiency of insulin or its function¹. Common complications which usually occur due to increase blood glucose level are microvascular and macrovascular complication of cardiovascular diseases, diabetic nephropathy, diabetic neuropathy and diabetic retinopathy^{2,3}. It has been observed that even mild impairment of glucose tolerance causes atherosclerosis⁴. In diabetic patients homocysteine level is usually found to be high^{5,6} and this elevated homocysteine level is considered as strong risk factor for cardiovascular events^{7,8}.

The aim or target of our study was to find out the relationship between Homocysteine, Vitamin B12 and Folic acid levels for predicting as risk factor for early cardiovascular diseases or whether there is any link

between hyperhomocysteinemia and cardiovascular diseases in Type II diabetes.

MATERIALS AND METHODS

We randomly selected eighty (80) patients (40 Males and 40 Females) Type II diabetes for this Prospective study. The patients were given a set of questionnaire to obtain information on demographic characteristics. We included strictly obese Type II diabetes with age >40 years. Exclusion criteria included those patients suffering from liver, kidney, cerebrovascular diseases and patient suffering from Type I diabetes mellitus were excluded. Forty (40) volunteers consists of twenty (20) males and twenty (20) females, age ranges between 40-70 years were randomly selected and included as Control.

The study was approved by Ethic Review Committee of Baqai Medical University.

Blood samples were collected and centrifuged. Plasma total cholesterol, triglyceride, high density lipoprotein cholesterol (HDL) were estimated enzymatically. Plasma low density lipoprotein cholesterol (LDL) was also calculated. Plasma glucose levels were determined by autochemical analyzer. HPLC was used for estimation of plasma Vitamin B12 and Folic acid.

Statistical Analysis: Statistical analysis was performed using SPSS (version 19) for all results. Biochemical parameters were calculated as mean $\pm$ SD. Student t-

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test was performed to determine difference between means. In all statistical analyses performed, p-value <0.05 were considered statistically significant (S), while p>0.05 statistically insignificant. P value <0.01 was considered highly significant (HS).

RESULTS

Eighty (80) subjects were included in our study. The mean age of the study participants was 54±11.52 years. When compared to control significant increase in body weight and body mass index (BMI) (p<0.001) were found. There was also significant increase in waist circumference (WC) (p<0.012) in Type II diabetes. (Table 1).

Table No.1: Characteristics of cases and control

Characteristics	Diabetics	Control subjects	p-Value
	n = 80	n = 40	
Body Weight (kg)	69 ±10.4	59±8.3	p<0.01
Height (m)	1.18±5.0	1.49±3.90	p<0.02
BMI (kg/m ²)	29±3.6	22±2.9	p<0.01
WC (cm)	80.2±7.5	71.5±3.5	p<0.05

BMI= Body Mass Index; Kg= kilogram; m= metre; Kg/m²=kilogram/ metre²;

WC= waist circumference; Cm= centimetre

Table No. 2: Biochemical Parameters of the Subjects

Parameters	Diabetic subjects	Control Subjects	p-Value
	n = 80	n = 40	
FPG (mmol/L)	6.98±3.9	3.98±0.7	p<0.01
tHcy (mmol/L)	9.92±2.4	7.01±1.9	p<0.02
TC (mmol/L)	4.58±1.19	4.11±1.68	p>0.05
TG (mmol/L)	1.70±0.5	1.02±0.3	p<0.03
HDLC(mmol/L)	0.96±0.1	0.96±0.20	p>0.05
LDLC (mmol/L)	3.10±1.06	2.80±0.01	p>0.05
HDLC/ TC	0.21±0.01	0.30±0.1	p>0.05
LDLC/ TC	0.45±0.12	0.54±1.09	p>0.05
Folic acid(µg/L)	51.23±1.78	58±1.08	P<0.001
Vitamin B12 (µg/L)	46.43±0.61	57±0.90	P<0.01

FPG = Fasting Plasma Glucose; tHcy= Total Homocysteine; TC= Total Cholesterol; TG= Triglyceride; HDLC= High Density Lipoprotein Cholesterol; LDLC= Low density Lipoprotein Cholesterol; mmol/L= millimol per litre; µmol/L= micromol per litre; µg/L= microgram per litre

Total homocysteine (p<0.01), fasting plasma glucose (p<0.002) and triglyceride (p<0.02) were significantly higher , while plasma folic acid and vitamin B12 (p<0.01) were significantly decreased in the Diabetes mellitus group as compared to control values (Table 2). Table 3 outlined total homocysteine, plasma glucose, lipids, lipoproteins, folic acid and vitamin B12 in male

and female diabetes patients. In male the plasma total homocysteine (p<0.001) and folic acid (p<0.02) were high significantly when compared with female values. Plasma triglyceride (p<0.002) and Vitamin B12 (p<0.03) in male patients were significantly decreased when compared with female patients.

Table No. 3: Biochemical Parameters in Diabetic Patients With Gender

Parameters	Diabetics patients		p-Value
	Males	Females	
	n = 40	n = 40	
FPG (mmol/L)	7.98±3.6	6.9±2.3	p>0.05
tHcy (mmol/L)	12.01±1.6	8.9±1.2	P<0.01
TC(mmol/L)	5.48±0.07	5.98±0.2	p>0.05
TG (mmol/L)	2.08±0.9	2.98±0.1	P<0.02
HDLC (mmol/L)	3.01±0.12	2.98±0.1	P>0.05
LDLC (mmol/L)	3.47±0.1	3.94±0.2	p>0.05
BMI (kg/m ²)	27.01±0.9	29.01±0.4	p>0.05
HDLC/ TC	0.29±0.02	0.21±0.07	p>0.05
LDLC/ TC	0.51±0.09	0.50±0.11	p>0.05
Folic acid (µg/L)	51.50±1.01	50.72±1.01	P<0.05
Vitamin B12 (µg/L)	45.62±1.11	47.09±0.84	P<0.05

FPG= Fasting Plasma Glucose; tHcy=Total Homocysteine; TC= Total Cholesterol; TG=Triglyceride; BMI=Body Mass Index; HDLC=High Density Lipoprotein Cholesterol; LDLC= Low density Lipoprotein Cholesterol; µg/L = microgram per litre

DISCUSSION

Most common cause of mortality in long term diabetes is cardiovascular disease^{8,9}. The participant patients in this study was determined for plasma homocysteine, folic acid, lipids, Vitamin B12 and lipoproteins levels. In this study we included mainly obese diabetic patients. Literatures reviewed elaborated that both, atherogenic and thrombogenic effects are associated with high level of plasma homocysteine level^{10,11} as well as hyperhomocystenemia causes endothelial dysfunction, decreases the release of nitric oxide and causes impaired casodilation¹¹. Our study also showed and support the hypothesis that impaired metabolism of homocysteine contributes to development of cardiovascular diseases.

There is no correlation between other measured parameters and plasma total homocysteine level supporting earlier studies^{12,13}, reporting that plasma total homocysteine level is an independent risk factor for early cardiovascular diseases mortality^{14,15}. Our study also correlate that female patients have decreased level of total homocysteine level than men.

CONCLUSION

From our study we have come to the conclusion that increased total homocysteine, triglyceride level and

decreased Vitamin B12 and Folic acid levels along with increased waist circumference are strong risk factor for development of cardiovascular diseases in Type II diabetic mellitus subjects.

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Author's Contribution:

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Effect of Time Management Skills on Academic Performance of Medical Students

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Time
Management
Skills on
Academic
Performance

ABSTRACT

Objective: To assess time management skills with respect to effect on academic performance of medical students.

Study Design: Descriptive / cross-sectional study

Place and Duration of Study: This study was at the Department of Medical Education, Dow University of Health Sciences, Karachi from 1st January 2015 to 31st December 2015.

Materials and Methods: The sample of the study consists of 652 medical college students. Academic performance has been checked by student affairs and examination department of college.

Results: The relationship between medical students' time management scores and academic performance ratings is measured. A positive and significant relationship was discovered between time management score and performance rating ($r = 0.584$, $p = <0.001$). Correlation is significant at the 0.01 level (2-tailed). Male students have better time management scores.

Conclusion: This research work underlines the crucial need of understanding the part of "time management in academic performance."

Key Words: Time management skills, Academic performance, Medical students

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INTRODUCTION

A time management skill is not just skill to know or to learn, it is a pathway.¹ Time management "is a set of principles, practices, skills, tools, and systems that work together to help you get more value out of your time with the aim of improving the quality of your life." Awareness of time management skills is crucial for every student in their college/university life to organize, plan, concentrate and study effectively for quality output. This will give an efficient control on the work and health status and task related stress can also be managed in a better way.³ Ezeala and Awanga⁴ reported a huge proportion of undergraduate students of health sciences have unawareness and no understanding of study skills and time management habits. Medical students in the study period are entailed to understand and make concepts of a huge range of medical and scientific subjects. It is clear that unprofessional and improper way of studying integrated subjects will lead them to have failure in getting good grades that results in demotivation, loss of passion to learn.⁵

Personality, IQ, family background, gender and age, as well as various factors such as learning styles and methods of study would have the effect on learning and academic performance.⁶ It is more obvious for medical students to understand the value of time management when dealing with excessive academic curriculum.⁷ Students from developing countries have lots of problems and difficulties during their academic time period, researchers are engaged to find out and discover factors affecting student's performance. One of the factors identified is that students do not give that much importance to the time management while they know it is affecting their academic performance.⁸

Time management is an asset that is having its own value, it is one of the fact that the need is increasing day by day but due to lack of awareness, Pakistani researchers are bit lacking behind regarding time management and its effect on performance of students in all aspects evaluated in medical students.⁹ However, efficient group of researchers suggest time management is affecting academic performance and are working on it.¹⁰ Time management skills help them prioritize, stay realistic, they can manage good timetabling that will make them aware how to work along a path and solve problems, and students can plan long term goals and can be focused person for getting "best results".¹¹

MATERIALS AND METHODS

This is a cross-sectional study in which descriptive survey was carried out at Dow University of Health Sciences, Karachi from 1st January 2015 to 31st December 2015. The sample of the study consists of 652 medical college students. Student's cumulative grade point average (GPA) is a grading criteria of

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measuring performance related to academics, was secured by an open ended question asking to write the most recent cGPA Scale ranging from 1-4 that they have obtained in their last university exam. The self-reported cGPA was later validated by the student affairs department and examination branch (Departments that have information regarding results and evaluation of each student). The questionnaire used in this study was acquired and modified questionnaire developed by Britton and Tesser¹⁹⁹¹ and John W. Olmstead MBA, Ph.D.^{2005^{12,13}}, regarding time management skills. These two Questionnaires had taken in consideration and modified according to our study design and has been checked by Cronbach's alpha for the reliability. A self-administered also called drop-off and pick procedure was employed to distribute the questionnaire and gathered information from the respondents who are students from medical colleges of Karachi.

The study consists of 652 medical students. The data is then gathered and transferred into SPSS 21 (Statistical Packet for Social Sciences) program. The descriptive statistics such as frequency (f), percentage (%), arithmetical mean ($\bar{x}$), range, standard deviation (S), Pearson correlation coefficient (r) and one sample T-test analysis (t) were used in the data analysis.

RESULTS

Out of 652 medical students (471) 72.2% were females and (181) 27.8% were males students (Table 1). Mean age of the students was 19.43 ± 1.352 with the range of 18-23 years. Figure 1 represents the ages of the sample students that were 18 year old students 235 (35.9%), 19 year old students were 115 (17.6%), 20 year old students that are 156 (23.9%), 21 year old students were 89 (13.7%), 22 year old students were 52 (8%) and 23 year old student is were only 6 (0.9%). This explains that the majority of the students were of 18 years and 20 years.

Table 2 shows the time management scores and cGPA along with mean age of medical students. Mean of time management scores of medical students was (2.41 ± 0.545) which describes that medical students have good time management skills as time management scores are coded as 1-4 that is ranging from low (1-1.9), moderate (2-2.9) and (high 3-4). Furthermore the relationship of the time management scores is more evident by the cumulative grade point average cGPA (1-4) that is plotted on a conventional scale ranging from average (1-1.9), good (2-2.9), excellent (3-4). The mean of cGPA of medical students was (2.55 ± 0.446) which proves that better time management skills can lead to good cGPA.

There is (471) 72.2% female students and (181) 27.8% male students enrolled. In this study, Male students seem to have slightly better time management skills than the female students as mean of time management score is 2.56 ± 0.519 as compared with the mean of time management scores of female students that is 2.35 ± 0.54 with statistically highly significant P value of <0.001 . This is more evident by the cGPA calculated, as male

students have mean of 2.65 ± 0.371 which was higher than the mean of female students 2.51 ± 0.466 with statistically highly significant P value of <0.001 . (Table 3)

Table No.1: Frequency and percentage of genders

Gender	No.	%
Male	471	72.2
Female	181	27.8

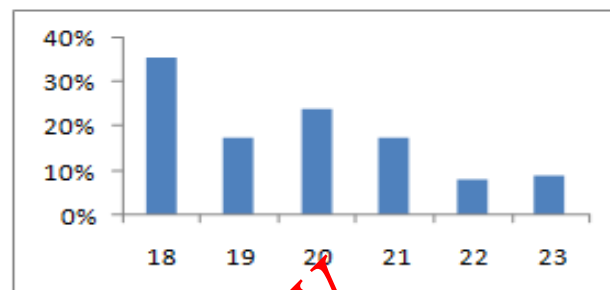


Figure No. 1: The graph representing the ages of the sample students

Table No.2: Baseline characteristics of study participants with their Academic Performance (n= 652)

Variable	Medical Students Mean $\pm$ SD
Age (yrs)	19.43 ± 1.352
Time management Scores	2.41 ± 0.545
cumulative grade point average	2.55 ± 0.446

Table No.3: Comparison of time management scores and its effect on GPA between male and female students

Variable	Males (n=181, 27.8%)	Females (n=471, 72.2%)	P value
Time Mx Scores	2.56 ± 0.519	2.35 ± 0.541	<0.001
cGPA	2.65 ± 0.371	2.51 ± 0.466	<0.001

Table No.4: Correlation between TMx Scores and Academic Performance of student

Variable	Total TMX scores	cGPA	P Value
Total TMx scores	1	.584**	<0.001
cGPA	.584**	1	<0.001

TMx Scores: time management scores, cGPA: cumulative grade point average

** Correlation is significant at the 0.01 level (2-tailed)

When the relationship between medical students time management scores and academic performance is measured by Pearson correlation coefficient, a positive strong correlation and significant relationship was observed between time management score and academic performance ($r=0.584$, $p=<0.001$) correlation is significant at the level of 0.01 (2-tailed) that denotes that more the time management skills, better the academic performance of the students. (Table 4)

DISCUSSION

Many factors such as student's motivation, stress, and socioeconomic status influence the student's academic performance. One of the most important determinants of student's academic profile is time management skill which has a positive effect on their academic achievement.^{14,15} Studies on this issue reports that students utilizing their time effectively have been shown to have high academic achievement.^{9,12,14} Androniceanu et al¹⁶ reported a positive relationship between students' time management skills and academic achievement and the same is also reported in several other studies.¹⁷ Findings of our study are also consistent with these studies. We also concluded that the students having good time management scores (2.41 ± 0.545) have an excellent cumulative GPA rating (2.55 ± 0.446). According to Karakose et al female students were found to be more successful than male students. In one more study conducted by Trueman and Hartley¹⁸, on university students female students were found considerably better than male students in time management skills.¹⁹ On contrast to this we found exactly opposite results of these studies that is in our research male students have good time management scores (2.56 ± 0.519) than female students (2.35 ± 0.541) and these good time management skills are reflected in their academic performance in terms of c GPA rating which is (2.65 ± 0.371) for males and (2.51 ± 0.466) for females and these findings are highly significant at the p value of <0.001 . To the best of our knowledge these finding are being reported for the first time and we consider these results unique in comparison to previous studies. As a result of the present research, a significant positive correlation of time management scores with the GPA was established between time management score and academic performance rating ($r = 0.514$, $p = 0.000$) correlation is significant at the level of 0.01.

CONCLUSION

Medical students who were good in time management and time planning scored good on likert scale of time management questionnaire and their high scores are reflected in their academic performance as they obtained excellent rating of their GPA.

Author's Contribution:

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

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Early Outcome of Hypoxic Ischemic Encephalopathy in Neonates Born at Nazeer Hussain Medical Complex Hyderabad

Deve Dass¹, Muhammad Nadeem Chohan¹ and Jai Parkas²

ABSTRACT

Objective: To assess the early outcome of Hypoxic Ischemic Encephalopathy in neonates born at Nazeer Hussain Medical Complex Hyderabad

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Neonatal Ward of Nazeer Hussain Medical Complex, Hyderabad from January to December 2016.

Materials and Methods: This study was conducted to know the early outcome of birth asphyxia in neonates born at this hospital. Inclusion criteria of our study were all newborn (term, preterm or post-term) with history of perinatal asphyxia or APGAR score at 5 minutes, < 7, or delayed crying after birth or > 10 minutes resuscitation soon after birth. Neonates having lethal anomalies like hydrops fetalis, cyanotic heart defects and congenital malformations were excluded from study. Severity of Asphyxia was assessed by the grading of Hypoxic Ischemic Encephalopathy. APGAR score 5-7 was labeled as mild asphyxia, 3-5 as moderate asphyxia and < 3 as severe Asphyxia.

Results. In this study mostly male neonates were there 92.2% (Table 1). Most neonates on admission was ≤ 2 days 51.2% (Table 1). Most of the neonates were ≥ 37 weeks gestational age 48.8% (Table 1). Grade 1 Hypoxic Ischemic Encephalopathy was most common 41.5% (Table 2). Most of the mothers had age between 25 to 35 years 90.2% (Table 2). Most mothers had the history of multigravida 53.7% (Table 2). Most common fetal presentation was cephalic 80.5% (Table 2). 56.1% neonates born by C-section (Table 2). Only 7.3% mothers had history of prolonged labor (Table 2). 33% neonates died due to Hypoxic Ischemic Encephalopathy (Table 3).

Conclusion: In this study most common type was grade 1 Hypoxic Ischemic Encephalopathy 37.1%. Grade 3 HIE was least common but death rate was more in it 21.9%. Death was least common in grade 1 HIE 4.26%.

Key Words: Birth Asphyxia, Hypoxic Ischemic Encephalopathy, APGAR Score

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INTRODUCTION

Birth asphyxia may cause death or Hypoxic Ischemic Encephalopathy when there is an asphyxia to newborn, during intrauterine life, during birth process or soon after birth. It is due to failure to initiate or inadequate breathing, leading to decreased oxygenation to various organs¹. Hypoxic Ischemic Encephalopathy occurs when there is hypoxemia (lack of oxygen) and hypercapnia (accumulation of carbon dioxide), combination of this decrease in oxygen supply (hypoxia) and blood supply (ischemia) results in neuronal cell death and brain damage².

Birth asphyxia is defined as, Umbilical cord arterial pH<7 or Apgar score of 0 to 3 for longer than 5 minutes

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after birth or Neurological manifestations like seizures, coma, or hypotonia after birth or Multisystem organ dysfunction like cardiovascular, gastrointestinal, hematological, pulmonary, or renal system after birth (American Academy of Pediatrics)⁶.

Of the estimated 130 million infants born each year worldwide³, 4 million die in the first 28 days of life. Neonatal deaths account for 40% of deaths under the age of 5 years worldwide. Two-thirds of the world's neonatal deaths occur in just 10 countries, mostly in Asia. Pakistan is number three among these countries. With an estimated 298 000 neonatal deaths annually and a reported neonatal mortality rate of 49 per 1000 live births, Pakistan accounts for 7% of global neonatal deaths⁴. Infection (36%), preterm birth (28%) and birth asphyxia (23%) account for 87% of neonatal deaths worldwide⁵. Acute neurologic injury due to birth asphyxia is less common in developed countries (2 to 3 cases per 1000 term live births) while it is higher in developing countries⁷.

MATERIALS AND METHODS

A descriptive cross sectional study was conducted from January to December 2016 at the Neonatal Ward of

Nazeer Hussain Medical Complex to know the early outcome of birth asphyxia in neonates born at this hospital. The Obstetric unit of this hospital receives pregnant women from city and beyond. Neonates are resuscitated by nursing staff, trained in neonatal resuscitation. In case of high risk deliveries, consultant Pediatrics receives and resuscitates the newborn.

Inclusion criteria of our study were all newborn (term, preterm or post-term) with history of perinatal asphyxia or APGAR score at 5 minutes, < 7, or delayed crying after birth or > 10 minutes resuscitation soon after birth. Neonates having lethal anomalies like hydrops fetalis, cyanotic heart defects and congenital malformations were excluded from study. Severity of Asphyxia was assessed by the grading of Hypoxic Ischemic Encephalopathy. APGAR score 5-7 was labeled as mild asphyxia, 3-5 as moderate asphyxia and <3 as severe Asphyxia¹⁰.

For the Nazeer Hussain Medical Complex born babies we have a nursery and Neonatal Intensive Care Unit. All delivered babies were received by senior nursing staff trained in the neonatal resuscitation. Resuscitation was given to neonates who failed to develop spontaneous breathing. Soon after delivery stop watch switched on to note the duration of resuscitation until the infant had good respiratory efforts along with a heart rate >100 beats. If there was no spontaneous breathing 20 minutes after birth then no more efforts taken and resuscitation stopped (American Heart Association).¹¹ At 5 minutes after birth if babies had APGAR score >7 then they were transferred to postnatal ward for observation for 12 hours and then discharged. Newborns whose Apgar score remained < 7 at 5 minutes after birth were transferred to neonatal ward for further management.

Admitted babies were examined by doctor at 6, 24 and 48 hours of age. Babies' length, weight and POC were taken and temperature was recorded. Presence of pallor and cyanosis was also noted. Respiratory rate counted in one minutes and examination done for subcostal recessions. Neonates who were irritable hyper alert, mild hypotonic, and sucking poorly were graded as HIE grade 1 (mild); neonates who were lethargic, had seizures, marked abnormalities of tone, and had requirement of tube feeding were graded as HIE grade II (moderate) and neonates who were in coma, had prolonged seizures, severe hypotonic, failed to maintain spontaneous respiration were classified as HIE grade III (severe) (Sarnat 8).¹² At 72 hours of admission early outcome was recorded and was measured as clinical improvement or presence of Hypoxic Ischemic Encephalopathy or death. Data was analyzed by using SPSS version 22. Frequency of birth asphyxia was measured as percentage.

RESULTS

In this study mostly male neonates were there 92.2% (Table 1). Most common of admission was ≤ 2 days 51.2% (Table 1). Most of the neonates were ≥ 37 weeks gestational age 48.8% (Table 1). Grade 1 Hypoxic Ischemic Encephalopathy was most common 41.5% (Table 2). Most of the mothers had age between 25 to 35 years 90.2% (Table 2). Most mothers had the history of multigravida 53.7% (Table 2). Most common fetal presentation was cephalic 80.5% (Table 2). 56.1% neonates born by C-section (Table 2). Only 7.3% mothers had history of prolonged labor (Table 2). 33% neonates died due to Hypoxic Ischemic Encephalopathy (Table 3).

Table No.1: Characteristics of Newborn N=164

Characteristics	No of Patients	%
Gender		
Male	148	90.2%
Female	16	9.8%
Age		
≤ 2 days	84	51.2%
3-5 days	72	43.9%
> 5 days	8	4.9%
Gestational Age		
≥ 37 weeks	80	48.8%
34-36 weeks	44	26.8%
< 34 weeks	40	24.4%

Table No. 2: HIE Staging and Risk factors

	No.of Patients	%
HIE Staging		
Grade I	68	41.5%
Grade II	56	34.1%
Grade III	40	24.4%
Maternal Age		
< 25 years	12	7.3%
25- 35 years	148	90.2%
>35 years	4	2.5%
Anesthesia		
Spinal	64	69.6%
General	28	30.4%
Gravida		
Multi	88	53.7%
Primary	76	46.3%
Fetal Presentation		
Cephalic	132	80.5%
Breach	32	19.5%
Mode of Delivery		
C-Sect	92	56.1%
NVD	72	43.9%
Prolong Labor		
Yes	12	7.3%
No	152	92.7%

Table No. 3: Outcome

	HIE staging		
	I	II	III
Outcome			
Improved	60 (37.1%)	44 (26.8%)	4 (2.43%)
Death	7 (4.26%)	12 (7.31%)	36 (21.9%)
Anesthesia			
General	16(9.7%)	8(4.8%)	4(2.4%)
Spinal	28(17%)	24(14.6%)	12(7.3%)
No	24(14.6%)	24(14.6%)	20(12.1%)
Presentation of fetus			
breech	20(12.1%)	8(4.8%)	4(2.4%)
cephalic	48(29.2%)	48(29.2%)	36(21.9%)
Mode of delivery			
C-Section	48(29.2%)	28(17%)	16(9.7%)
Normal Delivery	20(12.1%)	28(17%)	24(14.6%)
History of prolonged labor			
Yes	8(4.8%)	0	4(2.4%)
No	60(37.1%)	56(31.7%)	36(21.9%)
Prolapsed umbilical cord			
Yes	0	4(2.4%)	0
No	68 (41.6%)	52 (31.7%)	40(24.3%)
Cephalopelvic disproportion			
Yes	0	4 (2.4%)	0
No	68(41.6%)	52(31.7%)	40(24.3%)
Maternal hypotension			
Yes	0	4 (2.4%)	0
No	68(41.6%)	52(31.7%)	40(24.3%)
	HIE staging		
	I	II	III
Premature rupture of membranes (PROM)			
Yes	36 (21.9%)	16 (9.7%)	12 (7.3%)
No	32 (19.5%)	40 (24.3%)	28 (17.4%)
Maternal Fever			
Yes	8 (4.8%)	12 (7.3%)	20 (12.1%)
No	60 (37.1%)	44 (26.8%)	20 (12.1%)
Multiple births			
Yes	8 (4.8%)	8 (4.8%)	4 (2.4%)
No	60 (37.1%)	48 (29.2%)	36 (21.9%)
Polyhydramnios			
Yes	0	4 (2.4%)	4 (2.4%)
No	68 (41.6%)	52 (31.7%)	36 (21.9%)
Oligohydramnios			
Yes	4 (2.4%)	4 (2.4%)	4 (2.4%)
No	64 (39%)	52 (31.7%)	36 (21.9%)
Meconium-stained amniotic fluid			
Yes			4 (2.4%)
No	68 (41.6%)	56 (31.7%)	36 (21.9%)
Abnormal fetal heart rate or rhythm			
Yes	12 (7.3%)	12 (7.3%)	12 (7.3%)
No	56 (31.7%)	52 (31.7%)	28 (17%)
Premature delivery			
Yes	12 (7.3%)	16 (9.7%)	8 (4.8%)
No	56 (31.7%)	40 (24.3%)	32 (19.5%)

DISCUSSION

Our study showed 21.9% neonates died due to HIE grade 3 and it was present in 24.4% neonates while, only 2.4% expired due to HIE grade 1 and its frequency

was 41.5%. Over all death rate was 33%. A different local study from Rawalpindi showed Stage II HIE, was most frequent i.e. 55.6% while stage III cases were 26.1% and stage I was least frequent 18.3%. 40.8% neonates expired⁸. There was no effect of parity on Asphyxia. A death rate was high in this study because in this study neonates were both, hospital and home born, while in our study all neonates were hospital born. Another local study from Lahore showed, Hypoxic ischemic encephalopathy stage I (39.3%), II (40%) and III (11.5%). 78.7% babies were discharged and 21.3% died⁹. The death rate was lower in this study as compare to our study (33%), and this may be due to decreased number of Grade 3 HIE neonates in this study.

Another similar local study from Lahore done over asphyxiated newborns showed Grade 1 HIE in 36.8%, stage 2 in 32.0% and stage 3 in 20.8%. 59.7% of the babies were discharged successfully and 40.3% died. 64.6% weighed >2.5 kg and 35.4% 1.5-2.5 kg¹⁰.

In an different international study done on birth asphyxia neonates showed overall survival rate 86.7%. Mean gestational age was 39 weeks¹¹. The good survival rate in this study may be due more mature neonates, while in our 52% neonates were premature.

A study done in India on Birth Asphyxia newborns having 52.6% stage I HIE, 31.5% had stage 2 HIE and 15.9% developed stage III HIE. All HIE stage III babies expired. The mortality was 8%. Of these, 60% were those diagnosed with HIE stage III and the remaining 40% died of MAS with early onset sepsis¹². Although mortality rate was lower in this study but there was no survival in Grade 3 HIE and this may be due to associated Sepsis and Meconium aspiration. While in our study death was in 24.9% neonates having grade 3 HIE and this difference may be due to no associated sepsis or meconium aspiration in these neonates.

CONCLUSION

In this study most common type was grade 1 Hypoxic Ischemic Encephalopathy 37.1%. Grade 3 HIE was least common but death rate was more in it 21.9%. Death was least common in grade 1 HIE 4.26%.

Author's Contribution:

Concept & Design of Study: Deve Dass
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 Data Analysis: Muhammad Nadeem Chohan
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Diagnostic Challenge of Carcinoma Breast on Core Biopsy - Role of p63 and Cytokeratin 8/18

Rubina Gulzar, Ruqaiya Shahid, Shazia Mumtaz, Yusra Memon, Farheen Danish and Talat Mirza

ABSTRACT

Objective: The goal of this study was primarily to test the diagnostic utility of immunohistochemical stains p63 and cytokeratin 8/18 in the differentiation of malignant and non malignant lesions to prevent unnecessarily surgical intervention.

Study Design: Comparative / cross sectional study.

Place and Duration of Study: This study was conducted at the Department of Pathology, Dow University of Health Sciences, Karachi from 1 January 2015 to 31 January 2016.

Materials and Methods: Immunohistochemical stains p63 and cytokeratin 8/18 were performed on 182 cases on needle core breast biopsies. Patients' name, age, histology numbers, diagnosis, type of tumor, grade of tumor, and expression of p63 and cytokeratin 8/18 were recorded with special emphasis on myoepithelial layer integrity and foci of invasion.

Results: Total number of cases were 182. Mean age was 42 years (27-70). Malignant lesions 113 (62.1%), Benign lesions 18 (9.8%), Fibroepithelial lesion 10 (5.5%), Papillary lesions 4 (2.2%), Benign breast tissue 37 (20.3%). Most common malignant lesion was infiltrating ductal carcinoma 98 (53.8%) followed by infiltrating lobular carcinoma 3 (1.6%), mucinous carcinoma 2 (1.1%) & ductal carcinoma in situ were 10 (5.5%). Benign lesions were peri ductal mastitis/chronic granulomatous mastitis 10 (5.5%), sclerosing adenosis 3 (1.6%) and ductal hyperplasia 5 (2.7%).

Conclusion: The responsibility of the pathologist is to provide accurate diagnosis thus placing the patient in the appropriate therapeutic algorithm.

Key Words: Carcinoma breast, Core biopsy, p63 & cytokeratin 8/18 expression.

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INTRODUCTION

Breast cancer is the most common cancer in females with a reported incidence of 1.67 million in 2012.¹

Breast cancer is the most frequent cancer in women in Karachi, accounting for one-third of the cancers in the females and its incidence is second highest in Asia after Israel. According to a recent study in Pakistan (Ahmed S et al. 2013), breast cancer is one of the top malignancies (19.7%) in females.^{2,3}

Previously Fine needle aspiration Cytology (FNAC) was the established cell collection technique for the diagnosis of breast cancer. However, for the last two decades it is largely replaced by core needle biopsy (CNB).⁴

Core biopsy provides an accurate pre-operative diagnosis and is a successful method of choice with

96% sensitivity and 99% specificity.⁵

CNB is certainly more reliable than cytology and is less invasive than surgical biopsy, and allows the best therapeutic treatment options. However in everyday diagnostics, pathologist encounters cases in which the distinction between benign and malignant cases is challenging. This is because the morphologic features become more challenging due to limited available material, in such type of cases definitely requiring ancillary studies, to reach an accurate diagnosis.⁶

The Breast ducts and acini contain two types of epithelial cells, inner luminal and outer basal/myoepithelial cells. These cells can be distinguished by their immunophenotype. Cytokeratin (CK) 8/18 is expressed in the luminal layer, whereas CK5/14 and the transcription factor p63 characterizes the basal epithelial layer.⁷

The fundamental step for carcinogenesis is the loss of myoepithelial layer and loss of architecture which can easily be demonstrated by the use of immunohistochemistry.⁶

There is no study to date that compares the utility of p63 and cytokeratin 8/18 immunostains in the workup of clinically challenging core biopsy cases. Therefore, the goal of the present study is to assess the diagnostic

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utility of p63 and cytokeratin 8/18 in the distinction of benign, insitu and invasive malignant cases.

MATERIALS AND METHODS

Case Selection: It is a comparative, cross sectional, prospective study performed at Dow Diagnostic Research and Reference Laboratory, Dow University of Health Sciences, Karachi, from 1st Jan 2016 to 31 Jan 2017. This includes 182 cases of core breast biopsies in which there was high clinical suspicion of breast carcinoma but these were not conclusive on H & E and required further IHC stains. IHC CK 8/18 and p63 were applied. All other type of biopsies including mastectomy cases, lumpectomies, excision and wedge biopsies were excluded.

Immuno-histochemistry: Four millimeter thick sections were deparaffinized in xylene and dehydrated. Antigen retrieval was done by boiling target DAKO Envision retrieval solution (high PH 505) for 40mins at 96-99°C. Endogenous peroxidase activity was blocked by treatment with DAKO Envision flex peroxidase blocking reagent. The slides were incubated for 20-30mins at room temperature in humidity chamber with appropriate dilutions of primary antibodies along with their positive and negative controls. The slides were then incubated with secondary antibody (Envision horse reddish peroxidase) for coupling reaction for 20-30mins

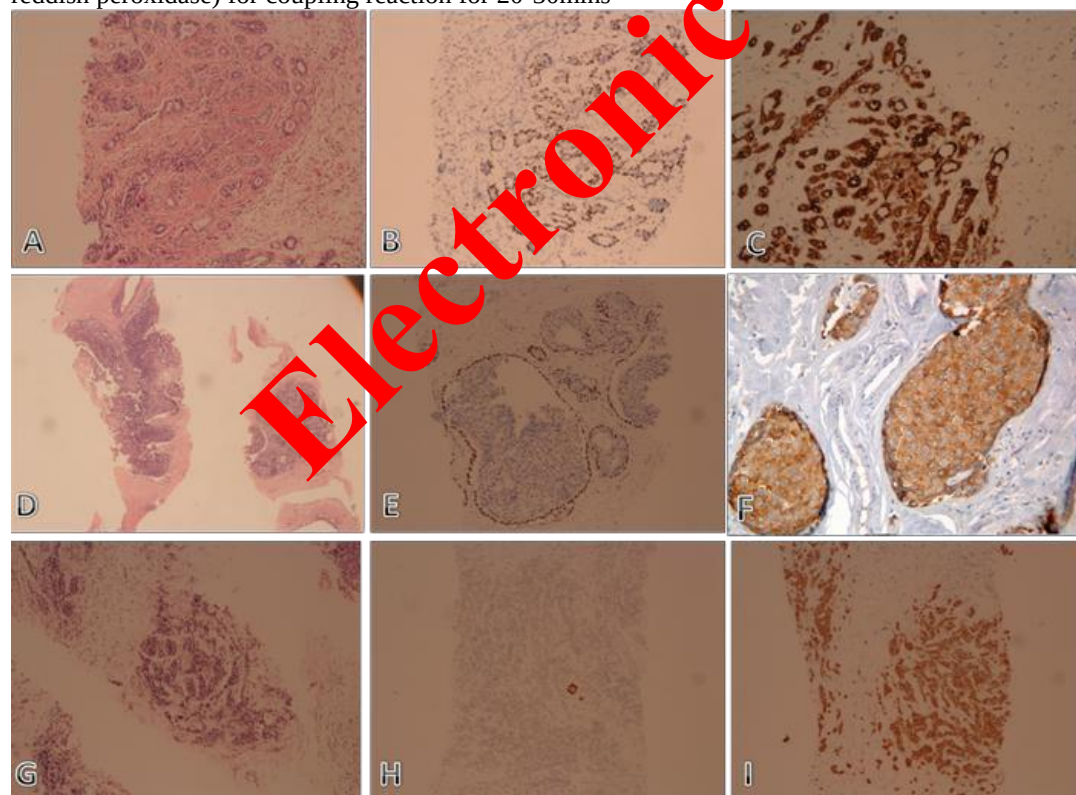
at room temperature. The substrate (Diamino benzidine +Chromogen) was used to produce crisp brown color at the site of target antigen. Hematoxylin (1-2 dips) was used as a counter stain. Controls of p63 and cytokeratin 8/18 positive stains were applied on the same slides.

Evaluation of immunohistochemistry: In the majority of benign breast glands, p63 antibodies demonstrated intense basal cell-specific nuclear immunostaining. In questionable foci, positive staining was taken as an evidence of benignity and deeper levels of H&E were examined. Negative staining of an entire suspicious focus was taken as presumptive evidence of malignant process; as long as the morphology was in agreement with the diagnosis. CK8/18 scored positive if any cytoplasmic and/or membranous tumor cell staining was observed

Statistical Analysis: Data was analyzed using SPSS version 20, and descriptive statistics were calculated as mean and median for age of patients and frequency and percentages for different type of breast lesions.

RESULTS

Total number of selected cases was 182. On all these cases IHC stains CK8/18 and p63 were applied for diagnosis. Mean age of the patients was 42 years (27-70).



A: H&E of sclerosing adenosis. (original magnification,X100). B: Strong p63 immunoreactivity in the peripheral rim of myoepithelial cells.(original magnification,X200) C: Cytokeratin 8/18 in the epithelial cells. (original magnification,x200). D: H&E of Ductal Carcinoma Insitu solid type. (original magnification,X100). E: P63 stain myoepithelial cells. (original magnification,x200). F: Cytokeratin 8/18 stain epithelial cells. original magnification,x200). G: H&E of Invasive ductal carcinoma (IDC NOS). (original magnification,X100). H: Complete loss of p63 stain in myoepithelial cells. (original magnification,X200). I: Strong positive staining for CK8/18 in malignant sheets.(original magnification,X200)

Of these cases lesions were diagnosed as malignant 113(62.1%), 18(9.8%) were diagnosed as benign, 10(5.5%) were fibro epithelial lesions, 4(2.2%) were papillary lesions and 37(20.3%) were ultimately diagnosed as benign breast tissue.

Most common malignant lesion was Infiltrating Ductal Carcinoma 98(53.8%) followed by Infiltrating lobular Carcinoma 3(1.6%), Mucinous Carcinoma 2 (1.1%) & Ductal Carcinoma in Situ were 10(5.5%).

Benign lesions were peri-ductal mastitis/chronic granulomatous mastitis 10(5.5%), sclerosing adenosis 3(1.6%) and ductal hyperplasia 5(2.7%).

DISCUSSION

Breast lesions have diverse morphological appearances. The differential diagnosis of breast carcinoma in needle biopsy includes an array of possibilities, from normal structures such as small benign ducts, acini or sclerosing adenosis to atypical ductal hyperplasia and Ductal Carcinoma in situ.

Reis-Filho JS et al(2002) for the first time, evaluated the diagnostic utility of p63 staining in differentiating in situ and invasive malignancies on fine needle aspiration.⁷

In malignant tumors the immunohistochemical stain p63 showed complete loss of myoepithelial layer and Cytokeratin 8/18 highlighted foci of invasion. Our study highlights the usefulness of combination of these two stains in differentiating benign from malignant and in situ from invasive carcinomas.

In year 2007, Shamloula MM and colleagues observed similar finding in the excision biopsy specimens with high sensitivity of p63 and Cytokeratin 8/18.⁸

According to authors' knowledge no prior study has evaluated the utility of p63 and Cytokeratin 8/18 immunohistochemical staining in benign and malignant breast lesions on core needle biopsy.

Total ten cases of carcinoma in situ were identified that included solid, comedo and cribriform type all shows intact myoepithelial highlighted on immunohistochemical stain p63 and show no foci of invasion on cytokeratin 8/18 many articles support our findings.^{8,9} However as our specifically emphasis on core biopsy which mostly have small amount of biopsy material and p63 have patchy nuclear positivity to exclude the invasion between these patchy areas cytokeratin 8/18 is extremely helpful.(Figure D,E &F). Because it highlighted small minor foci of invasion and two of the cases which were reported as carcinoma in situ with minor foci of invasion subsequently on excisional biopsies showed invasive ductal carcinoma with in situ component.

Fibroepithelial breast lesions include fibroadenoma and Phyllodes tumors, which are further characterized into benign, borderline and malignant. Role of core needle biopsy role in correctly differentiating these fibro epithelial lesions is limited and is solely based on

assessment of stromal cellularity of these lesions. Recent studies have shown that the proliferative indices ki-67 and p 53 may have a role for more accurate preoperative diagnosis.^{10,11} Role of p63 and Cytokeratin 8/18 is not established to distinguish fibro adenoma and Phyllodes tumors.

IHC marker p63 was helpful in differentiating the spectrum of papillary lesions in our study. Four cases of papillary lesions were identified and p63 highlighted fibro vascular cores in three cases; whereas, one case showed patchy loss in cores. In all cases excision of the lesion was recommended. Liberman et al reviewed in his research 35 patients who were diagnosed as papilloma on core needle biopsy, but turned out to be malignant on excision so instead statement on papiloma with atypical hyperplasia we simple recommended excision biopsy.¹²

We found that 9.9% of benign breast lesions comprised of chronic granulomatous mastitis, sclerosing adenosis & usual ductal hyperplasia. All of these are mimickers of breast carcinoma clinically and radiologically. Mammographic presentation of the chronic granulomatous mastitis and adenosis were suspicious of carcinoma but low power appearance of intact lobular architecture, lack of cytological atypia and intact myoepithelial layer and support from the IHC combination helped in establishing the correct diagnosis.

Previous studies have reported that sclerosing adenosis was associated with invasive carcinoma on excision biopsy in 28-30% of cases.^{13,14} Reaching the correct diagnosis on core needle biopsy is important for appropriate management of the patient.¹⁴

CONCLUSION

We recommend an immunohistochemical panel approach based on the differential diagnostic scenario as the best practice for distinguishing breast cancer and its mimickers on needle core biopsies to avoid unnecessary mastectomies and surgeries. The availability of myoepithelial markers, p63 and cytokeratin 8/18 provide significant role in such type of cases. We also recommend that intermediate level sections be prospectively obtained on charged (gelatinized) slides for potential immunohistochemistry and additional morphologic evaluation.

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

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Frequency of Various Skin Lesions in Patients Attending Civil Hospital Hyderabad

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ABSTRACT

Objective: The study is planned to find out the frequency of various skin lesions in OPD of a district level hospital.

Study Design: Retrospective / Descriptive study.

Place and duration of study: The study was conducted in OPD of Department of Dermatology, Civil Hospital, Hyderabad from 1st January to 31st December, 2016.

Material & Method: The study included 801 cases attending the Dermatology OPD of Civil Hospital, Hyderabad. The cases were divided into A, B & C Groups; Group A comprised of children, Group B adults and group C old age patients. Each group comprised 267 patients. This study was mainly based on clinical examination but in some cases laboratory help from LUMHS research laboratory was taken.

Results: In Children Infestations were highest (37.45%), next were cases of bacterial infections (24.34%), Fungal infections (19.10%), viral (11.23%) and atopic (7.86%). In Adults viral infections were highest (29.96%), next were cases of infestations (22.47%), fungal (20.22%), atopic (17.97%) & bacterial infection (9.36%). In old age patients Fungal infections (48.69%) were highest, next were cases of viral (17.60%), bacterial infections (14.98%), infestations (11.23%) and atopic (7.49%).

Conclusion: The skin lesions are very common in our practice. To reduce the spread of all sorts of infections and infestations among the population it is necessary to follow preventive measures. Public at large must be made aware of simple measures like avoidance of sharing of clothing, sports items, towels or bed sheet. Washing of clothes should be done with hot water. Fungicidal soap should be used in suspected exposure to ring worms. Barefoot walk should be avoided.

Key Words: Bacterial skin infections, skin infestations, viral skin infections, atopy

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INTRODUCTION

The skin disorders are very common in our community. There are varieties of lesions and some of them can be prevented by improving self-hygiene or other simple measures. The skin is a vital and largest organ of the human body, which shows / reflects not only external signs and symptoms but also internal pathology. In skin lesions the most common complaint is the itching/pruritis along with other complaints. The itch / pruritis is an unpleasant sensation that leads to the desire to scratch.¹ It has many similarities to pain and both are unpleasant sensory experience but their behavioral response pattern are different, pain creates a reflex withdrawal while itch lead to a scratch reflex.²

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The nerve fibers for itch and pain lie in skin but information /signals for them are sent centrally in two distinct systems but both use the same nerve fiber and spino-thalamic tract.³

Historically the sensations of itch and pain have not been considered to be independent of each other until recently where it was found that itch has several features in common with pain but has important differences.⁴ The feeling of itching can be caused by movement of hair or release of chemical mediators like histamine released from cells under the skin, itchiness is regarded as protective and it helps the creatures to remove the irritant/ parasite that landed on the skin.

The global prevalence of itching / pruritis is approximately 280 million peoples (4% of population) have difficulty with itchiness and it is comparable to the 2-3% of population suffering from psoriasis. There are so many cases of itching globally, as are the health and social problems in human community.⁵

There are various causes of itchy skin. It may be an allergic reaction to certain chemicals, cutaneous larva migrans, insect bites, herpes, photo dermatitis, head lice, pubic lice, body louse, dandruff, scabies, varicella, urticarial, psoriasis, eczema, drug reactions, fungal infection & cellulitis. Certain medical conditions like Diabetes mellitus, Hyperparathyroidism, Jaundice also cause itchiness. Psychogenic pruritis is a condition produced due to psychological factors.⁶

MATERIALS AND METHODS

The study included 801 cases attending the Dermatology OPD of Civil Hospital, Hyderabad from 1st January to 31st December, 2016. The cases were divided into A, B & C Groups; Group A comprised of children, Group B adults and group C old age patients. Each group comprised 267 patients. This study was mainly based on clinical examination but in some cases laboratory help from LUMHS research laboratory was taken.

RESULTS

In Group A (Children) Infestations were highest (37.45%), next were cases of bacterial infections (24.34%), Fungal infections (19.10%), viral infections (11.23%) and atopic (7.86%). (Table No. 1)

In Group B (Adults) viral infections were highest (29.96%), next were cases of infestations (22.47%), fungal infections (20.22%), atopic (17.97%) & bacterial infections (9.36%). (Table No. 2)

In Group C (Old age) Fungal infections (48.69%) were highest, next were cases of viral infections (17.60%), bacterial infections (14.98%), infestations (11.23%) and atopic (7.49%). (Table No. 3)

The distribution of various lesions in different groups is given in Table No. 4.

Table No. 1: Distribution of skin lesion in group A (n=267)

S. No.	No. of Patients	Name of disease	Clinical diagnosis	Laboratory diagnosis	Lesions %
1	Bacterial n=65	Impetigo, folliculitis, erythema	Crusted sore +ve on skin	Culture +ve	24.34%
2	Infestations n=100	Scabies and louse	Bite like sore with itching, with grayish skin	Not done	37.45%
3	Fungal infection n=51	Tinea corpus and other sides	Lesions are annular, marginated with scale & clear center	KOH & Direct Microscopy	19.10%
4	Viral infection n=30	Chickenpox, measles	Blister with fever, cough sore throat	Not done	11.23%
5	Atopic n=21	Disease	Irregular raised red sores	Not done	7.86%

Table No. 2: Distribution of skin lesion in group B (n=267)

S. No.	No. of Patients	Name of disease	Clinical diagnosis	Laboratory diagnosis	Lesions %
1	Bacterial n=25	Furuncle, cellulitis	Red, tender and swollen area seen	Gr. staining +ve	9.36%
2	Infestations n=60	Scabies and urticaria	H/o severe itchiness and pimple like skin rash, sometime grayish lesion on skin along with burrow	Not done	22.47%
3	Fungal infection n=54	Tinea corpus, versicolor and other sides	Lesions are annular, marginated with plaque, scale & clear center	KOH & Direct Microscopy	20.22%
4	Viral infection n=80	H. simplex, H. zoster, P. rosea		Not done	29.96%
5	Atopic n=48			Not done	17.97%

Table No. 3: Distribution of skin lesion in group C (n=267)

S. No.	No. of Patients	Name of disease	Clinical diagnosis	Laboratory diagnosis	Lesions %
1	Bacterial n=40	Furuncle, cellulitis	Red, tender and swollen area seen	Gr. staining +ve	14.98%
2	Infestations n=30	Scabies and urticaria	H/o severe itchiness and pimple like skin rash, sometime grayish lesion on skin along with burrow	Not done	11.23%
3	Fungal infection n=130	Tinea corpus, versicolor and other sides	Lesions are annular, marginated with plaque, scale & clear center	KOH & Direct Microscopy	48.69%
4	Viral infection n= 47	H. simplex, H. zoster, P. rosea		Not done	17.60%
5	Atopic n=20			Not done	7.49%

Table No. 4: Group wise Distribution of skin lesion (age-wise distribution).

S. No.	No. of skin Lesion	Group A(children)	Group B(Adults)	Group C(Oldage)
1	Bacterial	24.34%	9.36%	14.98%
2	Infestations	37.45%	22.47%	11.23%
3	Fungal infection	19.10%	20.22%	48.69%
4	Viral infection	11.23%	29.96%	17.60%
5	Atopic/ Miscellaneous	7.86%	17.97%	7.49%

DISCUSSION

The bacterial skin infections affected about 155 million people and cellulitis occurred in about 37 million people in 2013.⁷ Our study also reveal that the bacterial infections are very common in children (24.34%), higher as compared to other age groups (Table No. 4). It is in accord with other international studies. Infestation lesions are contaminated with bacteria as secondary infection.

Fungal skin infections may present as either superficial or deep infection of the skin, hair and nails. According to study of 2010 they affect about one million people globally.⁵ In our study the highest incidence is in old age (48.69%).

Parasitic infestations, stings and bite in humans are caused by several groups of organisms belonging to the various species like Arthropoda, Chordata, Helminthes and Protozoa. The WHO reports also probe the prevalence of skin infestation lesions. Scabies is more often seen in crowded places with poor hygienic conditions.⁸ Globally as of 2009 about 300 million cases of scabies occur each year.⁹⁻¹⁰ The scabies is one of three most common skin disorders in children, along with ring worm and bacterial skin infections.¹¹ As per study of 2010 it affects approximate 100 million people (1.5% of the world population) and is equally common in both sex.¹² It is more common in young and old age and also more common in developing world and in tropical climate.¹³ In our study infestations were 37.45% in children, 22.47% in adult and 11.23% in old age. (Table No. 4)

CONCLUSION

The skin lesions are very common in our practice. To reduce the spread of all sorts of infections and infestations among the population it is necessary to follow preventive measures. Public at large must be made aware of simple measures like avoidance of sharing of clothing, sports items, towels or bed sheet. Washing of clothes should be done with hot water. Fungicidal soap should be used in suspected exposure to ring worms. Barefoot walk should be avoided.

Author's Contribution:

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Final Approval of version:

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

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A Biochemical and Morphological Comparison of the Role of L-Arginine on the High Saturated and Unsaturated Fat Diet Induced Changes on Adrenocortical Cells of Albino Rats

Iram Qudous¹, Imtiaz Manzoor² and Aisha Qamar³

ABSTRACT

Objective: Fatty diet produces both biochemical and histological changes in the adrenal cortex of albino rats. Present study objectives were to see if L-Arginine ameliorates the affects produced by both saturated and unsaturated fat equally.

Study Design: A prospective experimental study

Place and Duration of Study: This study was conducted at the Department of Anatomy, BMSI, JPMC, Karachi from August to October 2008.

Materials and Methods: A total of 50 Albino rats weighing 200-240gms, aged 190days were divided into 5 groups. Group A received standard laboratory diet .Group B received 20% saturated added fat as unsalted butter in diet .Group C received 20% unsaturated added fat as corn oil in diet .Group D received saturated fat with L-Arginine 300mg /kg body weight /day orally. Group E received unsaturated fat along with L-Arginine 300mg/kg body weight/day orally. After 8 weeks study period, animals were weighed and sacrificed and blood was drawn for hormonal assays. Adrenal glands were removed and fixed in buffered neutral formalin. They were then sectioned with cryostat in 10µm sections and stained with Oil red O to visualize fat in cells.

Results: Highly significant decrease observed in both ACTH and Corticosterone levels in Group D and E when compared to B and C respectively, but insignificant difference was found between D&E. Oil red O stained sections showed less densely packed fat globules in group D and E compared to B and C respectively. The results when compared between D and E were not significant.

Conclusion: L-Arginine lowers down the level of stress hormones in body and amount of fat in cortical cells in both groups receiving saturated and unsaturated fat diet with L-Arginine but their comparison didn't show significant difference statistically.

Key Word: Saturated fat, Unsaturated fat, Adrenal gland, L-Arginine.

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INTRODUCTION

Quality and quantity of diet influence organismal homeostasis adversely in different ways; one of the most important among them is activation of stress system with chronic elevation of stress mediators¹. Several studies investigated role of nutrients in the regulation of HPA(Hypothalamo-Pituitary - Adrenal) axis and stress responsiveness, studies in genetically obese (Zucker) rats have shown activation of HPA axis by them and hyper reactivity to stressful experimental conditions due to their consumption². Other studies shows high fat feeding alters both basal and stress induced increased HPA activity in rats^{3,4}.

It has been shown that high fat diet augment ACTH (Adrenocorticotrophic hormone) and Corticosterone hormone, therefore in terms of HPA axis stimulation, increased fat consumption functions as chronic stressor⁵. In animals lipid infusion induces increased levels of both hormones⁶. Type of fatty acid and therefore type of fat have different effects on HPA axis activation⁷.

Modern life style is characterized by diet high in fat, predominantly saturated, contributing to high prevalence of obesity and metabolic syndrome⁸.

Both psychological and fatty diet induced stress manifest their deleterious effects by stimulating the HPA axis chronically leading to abnormal secretion of stress hormones⁹. Agents which can prevent the excessive release of these stress hormones could prevent their hazardous contribution to disease phenomenon¹⁰. Among the agents used to decrease psychological stress L-Arginine is one of the semi-essential Amino acid which by means of Nitric oxide production down regulate excessive production of steroids from adrenal cortex¹¹. Present study was done to observe and compare the ameliorating effect of L

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Arginine on the morphological and functional changes produced by two different types of fatty diet.

MATERIALS AND METHODS

In this study 50 male adult Albino rats aged 190 days weighing 200-240gm were selected and kept on normal diet for a week under observation with 12 hours dark and light cycle, before commencement of study period. Animals were divided into groups A, B, C, D and E according to the diet they received, each comprising of 10 animals. Group A received normal laboratory diet. Group B received high saturated fat, 20gm unsalted dairy butter in 100gm of diet. Group C received high unsaturated fat, 20 ml corn oil in 100 gm of diet. Group D received high saturated fat along with 300mg L-Arginine /kg body weight/day orally (General Nutrition Corporation, Pittsburg, USA). Group E received high unsaturated fat along with 300mg L-Arginine /kg body weighed. Animals were housed in cages under, standard laboratory conditions of 12 hours day and night. After completion of study period animals were dissected after ether anesthesia. Blood sample were taken at the time of dissection through intra-cardiac puncture and shifted to lavender tubes containing EDTA and centrifuged for 15 minutes at 3500 Hz to get plasma, which was stored at -20°C for analysis. Plasma ACTH levels were determined by Elisa kit (Biomerica) and Corticosterone levels also by Elisa method (Neogen Corporation). Adrenals were removed and fixed in 10% buffered neutral formalin and sectioned by cryostat to $10\mu\text{m}$ sized sections which were stained with Oil Red O to demonstrate lipids. Statistical analysis was done by students 't' test and P value less than 0.05 was considered as significant. Calculations were done by utilizing computer software SPSS version 13.

RESULTS

The results of hormonal assays showed that highly significant decrease in plasma ACTH levels (Graph-1) was observed in butter with L-Arginine and corn oil with L-Arginine receiving groups, when compared to only butter and corn oil receiving groups respectively. Plasma Corticosterone levels (Graph-2) in butter with L-Arginine and corn oil with L-Arginine receiving groups when compared with butter and corn oil alone showed moderately significant decrease. When ACTH and Corticosterone levels were compared in butter with L-Arginine and corn oil with L-Arginine receiving groups there was no statistically significant difference.

Microscopic study of sections stained with Oil Red O, of adrenal cortex of butter receiving animals showed more densely packed fat globules (Fig-1), while corn oil receiving group showed densely packed fat globules (Fig-2). Both butter with L-Arginine and corn oil with L-Arginine showed less densely packed fat globules (Fig 3&4) and there was not much difference among the two.



Figure No.1: Oil Red O & Haematoxylin stained, $10\mu\text{m}$ thick frozen section of rat adrenal cortex showing more densely packed fat globules (FA) in zona glomerulosa (ZG) and zona fasciculata (ZF) after 8 weeks treatment with Butter. Photomicrograph X400



Figure No.2: Oil Red O & Haematoxylin stained, $10\mu\text{m}$ thick frozen section of rat adrenal cortex showing densely packed fat globules (FA) in zona glomerulosa (ZG) and zona fasciculata (ZF) after 8 weeks treatment with Corn oil. Photomicrograph X400

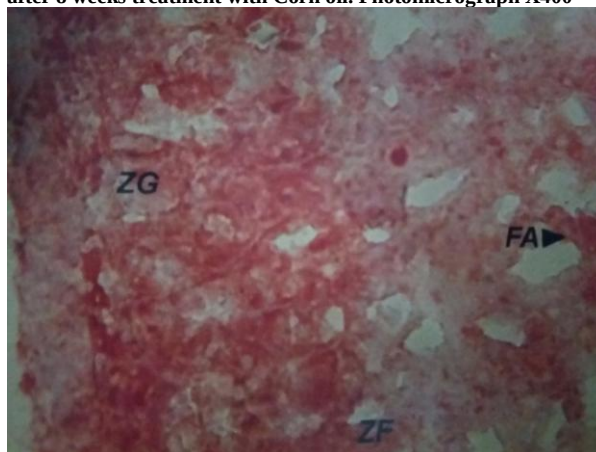
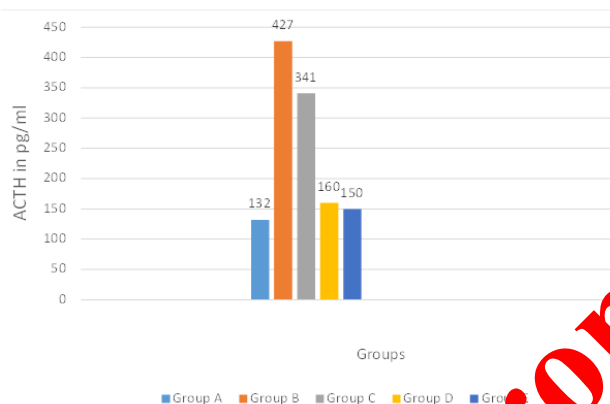


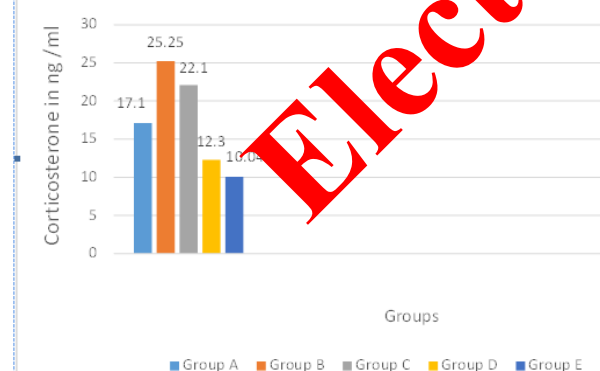
Figure No.3: Oil Red O & Haematoxylin stained, $10\mu\text{m}$ thick frozen section of rat adrenal cortex showing less densely packed fat globules (FA) in zona glomerulosa (ZG) and zona fasciculata (ZF) after 8 weeks treatment with Butter & L-Arginine. Photomicrograph X400



Figure No.4: Oil Red O & Haematoxylin stained ,10 µm thick frozen section of rat adrenal cortex showing less densely packed distribution of fat globules(FA) in zona glomerulosa(ZG) and zona fasciculata(ZF) after 8 weeks treatment with Corn oil & L-Arginine. Photomicrograph X400



Graph No.1: Mean Plasma ACTH Hormone in different groups of Albino rats



Graph No.2: Mean plasma Corticosterone in different groups of Albino rats

DISCUSSION

In modern society we are facing stress in two ways psychological stress and consumption of fatty diet which appeared to have synergistic affect^{1,12}. High fat diet is associated with high HPA axis responsiveness which leads to obesity and metabolic syndrome¹³. In present study fat was given in two forms Butter

(saturated) and corn oil (unsaturated), 20% of total calories. Both ACTH and Corticosteroid levels were found to be high in animals receiving saturated and unsaturated fat. Tannenbaum et al³, used corn oil and Wood et al¹⁴ used butter in the same amount alone, while Legender and Harris² used a mixture of corn and coconut oil and observe the hormonal levels after mild stress. Widmaier⁶ and his colleagues observed that infusions of fatty acid in rats increased stress hormone level indiscriminately but when fatty acids were introduced to cultured adrenal cortical cells there was no stimulatory affect when saturated fatty acids were used. Hisanao et al⁷ on the other hand found in their study that olive oil compared to corn oil and safflower oil when fed to rats and exposed to repeated stress result in higher levels of corticosterone.

L-Arginine seems to decrease the levels of both hormones when used with the two types of fat, there was no statistically significant difference in levels of both hormones in the two fat groups. Michalska et al¹⁵ observed the effect of L-arginine in decreasing the level of stress hormones induced by nicotine and found a significant decrease in levels, while Smriga et al¹⁶ used L-Arginine to reduce corticosterone levels and anxiety. Castas et al¹⁷ used L-Arginine to decrease stress hormone levels in turbot after repeated handling.

Oil red O stained sections of saturated and unsaturated fat groups showed increased amount of fat globules in the three zones particularly zona fasciculata and zona glomerulosa (Fig-1&2). Comparison of the stained section showed that fat globules are more in saturated fat diet group. D-Souza¹⁸ and his fellows in their study induced metabolic syndrome by giving high fat and carbohydrate diet similar to junk food consumed nowadays having lard in it, their finding showed fat accumulation in adrenal cortex similar to us.

Oil red O stained sections of Saturated and unsaturated fat with L-Arginine showed decreased amount of fat globules in the cortical zones when compared with only fat consuming group (Fig -3&4). Comparison of protection provided by L-Arginine among the 2 type of fat is not markedly different. L-Arginine possibly prevent fat accumulation and decreased steroidogenesis by decreasing amount of lipid in blood¹⁹ which could decrease influx in adrenal gland and by acting through NO(nitric oxide) production decrease steroidogenesis as observed by Repetto et al²⁰.

Diaz et al in their study used a mixture of saturated fatty acids and unsaturated fatty acid and observed the protection provided by vitamin C. Vitamin C could inhibit fatty diet induced excessive steroidogenesis from adrenal gland but that is because of down regulation of steroidogenic acute regulatory protein and hydroxysteroid 11 beta dehydrogenase 2 genes as observed by Diaz et al⁶. They didn't compare the types of fat.

CONCLUSION

Despite of well documented superiority of unsaturated fats in terms of health benefits present study results does not show marked difference regarding fat accumulation in adrenal cortex and increased steroidogenesis .Use of L- Arginine along the two type of fatty diets does not show much difference in its affects which is promising in case of saturated fat.

Author's Contribution:

Concept & Design of Study: Iram Qudous
 Drafting: Iram Qudous
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 Revisiting Critically: Aisha Qamar
 Final Approval of version: Iram Qudous

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

REFERENCES

- ## CONCLUSION
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- ### Conflict of Interest:
- The study has no conflict of interest to declare by any author.
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Role of Micral Test For the Detection of Microalbuminurea

Amjad Ali¹, Muhammad Siyar², Usman Ali³ and Muhammad Khalid⁴

ABSTRACT

Objective: The object of this study is to assess the sensitivity of micral test for detection of microalbuminurea.

Study Design: Cross sectional study.

Place and duration of study: This study was conducted at the Department of Medicine, Mardan Medical Complex Mardan from 01 June to 31st May 2017.

Materials and Methods: A total of 100 adult type 2 diabetic patients were selected. Stable adult diabetic patients with no sign of complications on clinical examination were selected randomly in medical outdoor patient department irrespective of duration or control of diabetes. Spot urine samples were tested for albumin with Micral strip and then albuminuria was confirmed by 24 hour urinary albumin quantification.

Results: In this study 40% patients were in age range 40-50 years, were in age range 50-60 years and 28% were in age group 60-70 years. Fifty six percent patient were males and 44% patients were females. Eighty one patients showed proteinurea on micral strip method 81% that was confirmed by 24 hour urinary albumin quantification. Eleven patients were showing no proteinuria both on micral strip method and 24 hour urinary quantification 14%. False negative and false positive results were obtained in 4.3% and 13% patients respectively. Sensitivity and specificity was calculated 93% and 89% percent with 94% positive predictive value and 79% negative predictive value.

Conclusion: Micral spot test is a very sensitive and reliable test for detection of microalbuminurea.

Key Words: Sensitivity, Micral Test, Microalbuminurea, Diabetes Mellitus

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INTRODUCTION

Microalbuminuria is one of serious complication of Type 2 diabetes that ends up with end stage renal disease (ESRD). Medical interventions at early diagnosis of microalbuminurea reduces the adverse outcome in diabetic patients. Diabetes mellitus accounts for majority of patients of end stage renal disease (ESRD)¹. Those receiving renal replacement therapy were diabetics in (40%) United States, Canada (24%), Australia (14%), Europe (17%) and Japan (28%)^{2,3}. Nephropathy passes through well defined stages of microalbuminurea, microalbuminurea, impaired eGFR and ESRD in insulin dependent diabetes mellitus (IDDM) but this is less well defined in Non Insulin Dependent Diabetes Mellitus NIDDM⁴⁻⁶. NIDDM also has non diabetic kidney disease in 30% in proteinuric patients^{7,8}. However for all patients detection of microalbuminurea warns us to take measures to prevent ESRD⁷⁻⁹. It should be done at diagnosis and yearly in NIDDM¹⁰.

In IDDM, at an average it takes 3 years for earliest change of glomerulous basment membrane thickening and it takes 15 years after onset of diabetes to develop microalbuminurea. Tests for microalbuminurea have inconvenience in standardization of urine samples. Gold standard is 24 hours sample of urine. Others are albumin excretion rate per second or minute. Spot urine sample that may be early morning or collection at time of visit^{11,12}. All specimens can be standardized by adjusting for urine creatinin. By ease of convenience spot specimens are ideal¹³. In this study spot specimen was tested for albumin with micral strip followed by 24 hour urinary quantification of albumin. Value from 20mg/dl to 300mg/dl was defined as microalbuminurea¹⁴. Value greater than this is considered as overt albuminurea and lower than this is normal.

MATERIALS AND METHODS

This study was conducted at Mardan Medical Complex, Mardan in which a total of 100 stable adult NIDDM patents were selected randomly. All the patients are similar (Asians) or closely related by race and religion. During routine consultation, micral test was performed and patient received written instructions for collection of 24 hour urine. When patients returned with 24 hour urine sample, urine albumin was quantified. Urine creatinine was also measured. History was taken and examination was performed for selection of patients in

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study. Data was analyzed with SPSS version 22.0.0.0 and is presented in tables and charts.

RESULTS

This was a cross sectional study conducted at Mardan Medical Complex, Mardan in which a total of 100 stable adult NIDDM patents were included. Age distribution among these patients was analyzed as 40 patients were in age range 40-50 years, 32 were in age range 50-60 years and 28 were in age group 60-70 years (Table No:1). Fifty six percent patients were males and 44% patients were females. Eighty one patients showed proteinurea on micral strip method 81% that was confirmed by 24 hour urinary albumin quantification. Eleven patients were showing no proteinuria both on micral strip method and 24 hour urinary quantification 14%. False negative and false positive results were obtained in 05(4.3%) and 03(03%) patients respectively. Sensitivity and specificity was calculated 93% and 89% percent with 94% positive predictive value and 79% negative predictive value (Table No:2).

Table No 1: Age Distribution (n:100)

Age	Number of patients	Percentage
40-50	40	40 %
50-60	32	32%
60-70	28	28%

Table No 2: Validity of Micral Strip Test to 24 hour Urinary Protiens Quantification

24 Hour Urinary Protiens(mg/dl) (n:100)		Micral Strip Test(n:100)	
≥20	86	81	05
≤20	14	11	03
Sensitivity: 93%		Specificity: 89%	

Table No 3: Proteinurea in age distribution (n=86)

Proteinurea	2-5 years	8-10 years
< 1.5 gm	21	0
>1.5 gm	0	62

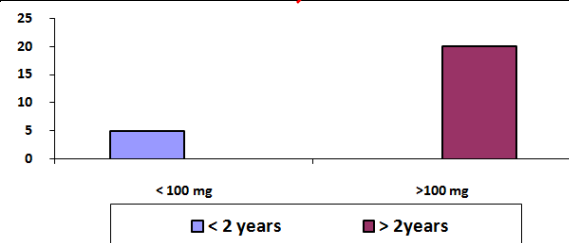


Figure No 1. Proteinurea in history of disease (n=86)

Proteinurea is amount directly related to duration of diabetes in 86%, (figure 1). In disease of less than two years history it is present in lesser amount less than 100mg. In 3-5 years it was less than 1.5 gm while in 8-10 years it is present in proteinuric range greater than 1.5 gm. (Table No: 3) In only one case it is still in micro

albuminuric stage at 12th years. In two cases it was below microalbuminuric range at 3rd and 5th years (Normal).

DISCUSSION

Etiology of diabetic nephropathy includes (a) Genetic factors), (b) Sustained hyperglycemia, (c) Sustained hypertension, (d) glomerular hyperfiltration, (e) smoking, (f) dyslipidemia. It is more common in African, americans and Asians than Caucasians¹⁵. Pima Indians a native American tribe is the best study model as they develop NIDDM at much earlier age^{3,8,13}. All stages can be observed without non diabetic proteinuric effect related to old age it is less in those with good glycemic control (Hb A1c 7%) (In the DCCT trial intensive treatment of hyperglycemia reduced the incidence of microalbuminurea by 39% and in UKPDS trial 30% reduction¹⁶. Kumamoto study also support this fact. Microalbuminurea is observed after 5-15 yrs of IDDM³. In Type 1 Diabetic patients 80% of microalbuminuric patients have progressed to albuminurea in 6-10 years¹⁷. There are different methods to quantitatively measure urine. Difficulties include sample variation, standardization, inconvenience and effect of posture. Various methods include 24 hr urine for protein rate per minute, Spot specimen, early morning and sample at time of visit¹⁴. Further refining is to divide this by creatinine excretion rate. In this study spot sample at visit time was tested via micral test and urinary creatinine measured. Just in one case it changed group of one patient from microalbuminurea to normal range. In most cases just albumin essay is sufficient and without additional time and cost. This method is sensitive, accurate and convenient in respect of time and sample collection and much easy for repetition as follow up will also be required. However this is relatively expensive. ACE inhibition by rennin angiotensin system and selective blockade of angiotensin 1 receptor by ARB's lowers microaluminurea¹⁸. A target BP below 130/80mmhg and statin drugs are recommended in all NIDDM.

CONCLUSION

Spot urine sample just for albumin at clinic/OPD visit time by Micral test is a useful test for early detection of Microalbumiurea to prevent ESRD.

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

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To Determine the Effectiveness of Work Motivation, Through Communication Skills Training Program: A study of Medical Universities' Teachers at Karachi

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ABSTRACT

Objective: The purpose of this study was to determine the effectiveness of the teachers training program at Medical University of Karachi. The study also aims to identify the requirements of Medical teachers in attending the training program.

Study Design: Case control study

Place and Duration of Study: This study was conducted at the Department of Physiology, Baqai Medical University, Karachi from November 2015 to March 2015.

Materials and method: Data accumulated through a set of questionnaire to that amount consists concerning twenty nine items. Sixty Medical instructors whoever attended the training program had been topics concerning the research.

Results: The responses had been analyzed by way of using the "Statistical Package for Social Science" (SPSS) 16.0. Statistical evaluation used to be ancient to analyze the responses. The Overall effectiveness was 0.001, Building Teacher Confidence <0.001 and improving teacher motivation was 0.030. Further, rests of the factors were found insignificant response.

Conclusion: This component becomes the necessary needs over teachers because obeying the subsequent training program as observed by using the advantage about instructors that they want simple competencies have to stand addicted before long of the education program. The instructors additionally claimed they require the training program must stay longer (long term training) in light of the fact that it has demonstrated that the preparation was successful.

Key Words: Effectiveness, Communication Skills, Work Motivation

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INTRODUCTION

Karachi is the largest city and former capital city of Pakistan. It is Pakistan's transportation chief, industrial center, seaport, financial and commercial hub. The six (06) medical universities are serving in private and public sector in Karachi.

Teachers, especially medical teachers are leaders who teach and guide medical students, help them to understand different medical and non-medical subjects

and critical thinking skills, so they can develop a healthy and disease free community. Educational requirements for teachers depend on their chosen specialty and their training should be the essential component. Unfortunately, there is no guarantee that the training they are getting will improve them as a medical teachers.

The significance of Communication abilities is to advance more compelling business practices and permit people inside the association to feel good speaking with others and to feel educated with the data they are getting. The vital components of the communication are; Listen, Send Clear Messages, Respect and Non-verbal behavior.

Maybe in acknowledgment of the quality issue, there is growing mindfulness that Medical educators should be fittingly prepared as instructors¹. Their preparation program focused on the instructing of restorative at authentication, certificate, Masters or Doctoral levels. Be that as it may, the dominant part of educators won't not be satisfactorily arranged to instruct²; enhancing their Communication abilities capability and showing aptitudes have therefore turned into a matter of concern.

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That's why power and length of the program are essential figures taking into account when outlining an expert advancement program.

Training program can give real effect in instructor's change in his exploration finding expressed that instructor preparing is a sort of grown-up discovering that necessities individual process³. It implies that the preparation must give the setting shape what the educators needs and needs to learn and, to some degree lesser degree, when and where learning happens. The members must include themselves in issue of information exchange. There are many confirmations to recommend certainty to show topic will impact instructing results.

We can classify different types of communications as follows: Intra-personal Communication skills: This proposes specific reflection, examination and thought. As per specialists this sort of Correspondence wraps conversing with the stunning and with spirits as supplications and traditions and capacities. Interpersonal Communication skills: This is quick, eye to eye Correspondence that occurs between two individuals. It is near and dear, arrange, and furthermore private and gives most outrageous correspondence through words and flags. Focused Interactions: This mainly occurs in light of a genuine affair between two individuals. This proposes the two individuals included are absolutely aware of the Correspondence happening between them. Unfocused Interactions: This happens when one just watches and tunes into people with whom one is not talking. This for the most part happens at public places around us. Nonverbal Communication skills: This consolidates perspectives, for instance, non-verbal correspondence, signals, outward appearances, eye to eye connection, which in like manner transform into a bit of the bestowing methodology. The impacts of Communication skills are: Non-verbal communication, listening mindfully, Communicating your musings, Certainty and lucid Correspondence botches, Thought of others.

Multiple surveys have been conducted to evaluate the issue of administration quality and understudy satisfaction. Fitri et al. evaluated advantage quality estimation i.e. substance, responsiveness, resolute quality, attestation, and sensitivity as positive benefactors towards understudy satisfaction. Ham and Hayduk uncovered that clear administration quality is an essential for satisfaction⁴. Medical Educators keep on being the most basic effect on understudy comprehension and fulfillment in colleges¹⁰.

Student evaluation of teaching (SET) is one of the most affective and time utilized instruments operated by advanced education foundations over the world^{5,6}. It was control gadget to quantify the showing execution/ viability of resources at a medical college⁷.

According to Kirkpatrick, assessment or the level at which assessment happens is dependent on four level stages⁸. In this four level models, each progressive assessment level is based on data given by the lower level. As indicated by this model, assessment ought to dependably start with level one, and after that, as time and spending plan permits, should move consecutively to every next level. Data from each earlier level fills in as a base for the following level's assessment⁹. In this manner, each progressive level speaks to a more exact measure of the viability of the preparation program, yet in the meantime requires a more thorough and tedious investigation¹⁵.

The medical teacher should direct development or sponsor sessions following a preparation program. Coaches ought to keep up their contribution in the preparation and exchange handle by leading field visits to watch learners' utilization of prepared aptitudes, give and request input and go proceeded with help and help to students¹⁰.

MATERIALS AND METHODS

The strategy of research was to collect the data through questionnaire after training. The population of the study was composed of teachers at Medical Universities of Karachi. It was about data collection through prescribed questionnaire after training received by the Medical teachers. The content related to training program specially with respect to our topic and data collection available at Universities and some other relevant sources was also studied. The population was limited to the Medical Universities. Therefore stratified selected sampling design was adopted. The overall sample size of 60 teachers belonging to Medical Universities were selected as a part of sample the principle of stratification was gender and age. A questionnaire comprising of 34 items was designed, selected from literature review and in consultation with research supervisor. This procedure ensured the content validity of this questionnaire. The data were collected through questionnaire after the training. the reliability of the instrument was ensured through pilot testing. Two sorts of systematic methods were utilized. To begin with, quantitative which included elucidating measurable methods. Tables with rate were utilized for portrayal of information. The second kind of procedure utilized was subjective examination of the certainties was made insect the outcomes were depicted in the story.

RESULTS

From demographic data, the sample size was n=40 in which male and female were, n=16(40%) and n=24(60%) respectively, as well as the respondents have more than two year teaching experience as a teacher in the medical university. The lecturer were n=34 (85%) and n=6 (15%) were professorial staff from the various medical courses. All respondents stated that

they teach their respective subject at least twice in a week.

Simple statistical analysis was applied to the questionnaire data gathered which contains five sections A,B, C, D and E. The sample was comprises on 40% male and 60% female.

Table No.1: Descriptive Comparison

N	Minimum	Maximum	Mean $\pm$ SD
Overall effectiveness			
40	1.27	3.00	1.92 $\pm$ 0.31
Effectiveness in building teachers' confidence			
40	1.17	3.33	2.11 $\pm$ 0.49
Effectiveness In Improving Teachers' Motivation			
40	1.20	2.80	1.84 $\pm$ 0.42
Effectiveness in fulfill teachers' needs			
40	1.14	2.71	1.96 $\pm$ 0.45

The mean score and standard deviation was 1.92 and 0.31 respectively of this section. From the mean score it can be classified future needs of teachers as the attending training program is low. The mean score and standard deviation was 2.11 and 0.49 respectively of this section. From the mean score it can be classified that the effectiveness of the training program in building teachers' confidence level was low. The mean score for the section was 1.84 and standard deviation was 0.42. From the mean score it can be classified the motivation in teaching and has changed after attending the training program is low. The mean score for the section was 1.96 and standard deviation was 0.45. From the mean score it can be classified Teachers Future Needs in Attending the Training Program is low. The analysis is based on according to respondents' designation or their job responsibility. We have analyzed all the aspects to keep in mind the status of job. Which have been asked to the respondents and found that, the overall effectiveness of the training has significance as p-value 0.001, Effectiveness of Training in Building Teachers' Confidence is highly significant as the p-value is <0.001, the effectiveness of the training program in improving teachers' Motivation is significant and Teachers Future Needs in Attending the Training Program is not significant.

The majority of the medical teachers responded that the overall training program they had attended was low effective (mean score was 1.93) of the teachers attended the training was successful in passing on new knowledge about methodologies to teaching their respective subject, the program increased teachers' understanding of how teaching was 92.50% (n=37) acquired, teaching environment was 90% (n=36) applicable of this training program, it was a suitable forum for exchanging the ideas 85% (n=34), and it was successful in introducing to developing ideas for teaching in classroom, the overall effectiveness of training improve communication skills 90% (n=36), skills acquired was 95% (n=38) for the career advancement.

Table No.2: Comparison of Communication Skills Training Program

A. Designation Wise				
Category	N	Mean $\pm$ SD	S.E	p-value
Overall Effectiveness				
Lecturer	34	21.85 $\pm$ 3.02	0.51	.001
Prof. /Assist Prof./ Assoc. Prof.	6	17.00 $\pm$ 3.28	1.34	
Building Teacher Confidence				
Lecturer	34	13.05 $\pm$ 3.07	0.53	< 0 .001
Prof. /Assist Prof./ Assoc. Prof.	6	10.50 $\pm$ 0.83	0.34	
Improving Teacher Motivation				
Lecturer	34	9.50 $\pm$ 1.94	0.33	0.030
Prof. /Assist Prof./ Assoc. Prof.	6	7.50 $\pm$ 2.34	0.96	
Teachers Future Needs And Over All Effectiveness Of The Training				
Lecturer	34	14.11 $\pm$ 3.07	0.53	NS
Prof. /Assist Prof./ Assoc. Prof.	6	11.8333 $\pm$ 3.12	1.27	
B. Between Public And Private Sector				
Over All Effectiveness				
Public	30	20.66 $\pm$ 3.85	0.70	NS
Private	10	22.50 $\pm$ 1.50	0.48	
Building Teacher Confidence				
Public	30	12.43 $\pm$ 3.16	0.58	NS
Private	10	13.40 $\pm$ 2.36	0.75	
Improving Teacher Motivation				
Public	30	8.90 $\pm$ 2.15	0.39	NS
Private	10	10.10 $\pm$ 1.72	0.55	
Teachers Future Needs And Over All Effectiveness Of The Training				
Public	30	13.50 $\pm$ 3.23	0.59	NS
Private	10	14.60 $\pm$ 2.87	0.91	
C. Gender Wise				
Over All Effectiveness				
Male	16	21.12 $\pm$ 4.34	1.09	NS
Female	24	21.12 $\pm$ 2.89	0.59	
Building Teacher Confidence				
Male	16	12.37 $\pm$ 2.62	0.66	NS
Female	24	12.87 $\pm$ 3.24	0.66	
Improving Teacher Motivation				
Male	16	9.43 $\pm$ 2.47	0.62	NS
Female	24	9.04 $\pm$ 1.85	0.38	
Teachers Future Needs And Over All Effectiveness Of The Training				
Male	16	14.25 $\pm$ 2.90	0.73	NS
Female	24	13.45 $\pm$ 3.32	0.68	

Use independent sample t-test

P < 0.05 consider the statistically significance

NS: Not statistically significance

DISCUSSION

The outcomes uncovered that the educators in this investigation recognized the preparation program similar to a wellspring of impact for their instructing. This consider which was found that in benefit preparing program were accounted for by the educators to be by a wide margin the greatest wellspring of impact on their choice in instructing, rousing them to change their instructing and convictions. It implies that the instructor in this examination had remarked that they found the experience of going to the preparation program is valuable and enlightening. By and large, the preparation program was low powerful for the educators for being compelling instructors. As indicated by Guskey, the viability of the preparation program should be assessed at five distinct levels¹¹: members' responses, members' learning, authoritative help and change, members' utilization of new information and aptitudes, and understudy accomplishment. The consequence of the program assessment survey demonstrated that educators responded positively to the preparation program, highlighting numerous positive elements of the encounters. Most of the educators additionally showed (in the assessment of survey and meeting) that they had increased new abilities and information because of taking an interest in the expert advancement. In the xterm of the initial two of Guskey's level along these lines, the program seemed to have been sure¹². The fourth level of assessment identified with the instructors' utilization of learning and aptitudes achieved from the expert advancement the detectable changes made to educators' classroom rehearses. As effectively noted, it was over 80% (n=32 of 40 instructors) demonstrated the level of attractive. It can be finished up then that the educators have more positive recognitions towards the viability of the preparation program regarding fulfillment. The general adequacy of the preparation program was low successful¹³. It implies that the preparation program might be proceeded with on the grounds that the preparation program was low compelling for the educators gaining the aptitudes for being a successful instructor¹³. The further preparing project can gain from the preparation that the educators had gone to¹⁵.

CONCLUSION

Medical universities should invest lot of money to induct new recruit - Induction program. Training, communication skills knowledge and work motivation in medical teaching is therefore seen as an effective strategy to improve the quality of medical education and clinical supervision, which is also necessary to develop a healthy community.

Recommendations: It is recommended that that kind of training must be conducted in the teaching organization biannually to improve the work motivation amongst the teachers.

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Hematological Side Effects of Sofosbuvir and Ribavirin Combination Therapy in Chronic Hepatitis C patients

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ABSTRACT

Objective: This study aimed to observe the hematological side effects of sofosbuvir and ribavirin therapy in treatment of chronic hepatitis C (CHC) patients.

Study Design: Descriptive study

Place and Duration of Study: This study was conducted at the Outpatient Department of Gastroenterology, Nishtar Hospital Multan from October 2016 to March 2017.

Materials and Methods: It included 117 treatment naive patients with CHC who were given combination therapy of Sofosbuvir and ribavirin. Patients complete blood picture was sent at the baseline and then repeated at 1 month and at 3 months. Drop in mean of all blood parameters was calculated. Cut-off for Significant Side effects were set as follows: Anemia (Hb<10gm/dL), Leukopenia (<4000 WBCs/mm³), Thrombocytopenia (<100,000 platelets/mm³). Data was analyzed using the SPSS version 17.

Results: Out of 117 patients, 64 (54.7%) were females and 53 (45.3%) were males. Mean age of patients was 39.28 ± 11.23 years. Mean hemoglobin (Hb), total leukocyte count (TLC) and platelets (PLT) before treatment were 12.51 g/dL, 8.53 x10³ /mcL and 273 x10³ /mcL, respectively. Mean Hb and TLC kept on decreasing as the treatment progressed. The decrease in mean of WBC was statistically significant (p<0.001). Mean platelet count increased at 1 month and decreased at 3 months. Significant side effects were observed as follows: anemia was seen in only 3.4% patients, leukopenia in 2.6% patients and thrombocytopenia in 1.8% patients.

Conclusion: Hematological abnormalities are uncommon in sofosbuvir and ribavirin therapy

Key Words: Hematological side effects, sofosbuvir, ribavirin, chronic hepatitis C, pegylated interferon

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INTRODUCTION

Due to high sustained virological response (SVR) rates, sofosbuvir-based regimens are currently a mainstay for hepatitis C virus (HCV) therapies. Chronic hepatitis C virus (HCV) infection affects 3% of the world's population and 1.3% of the United States' population.^{1,2} Approximately 130–150 million people globally have chronic hepatitis C infection (CHC).³ Prevalence in Pakistan is approximately 4.8% and it is among the highest in the world³ with approximately 10 million people infected with HCV.^{4,5} It is a leading cause of chronic liver disease, cirrhosis, and hepatocellular carcinoma (HCC), and is one of the most common causes of liver transplants in the United States.²

Treatment of CHC has undergone a revolution. Historically, the only therapy available for almost 25 years was interferon in combination with ribavirin, which yielded inconsistent results and serious side effects.⁶ The discovery and subsequent development of direct-acting anti-virals (DAAs) heralded a marked improvement in rates of sustained virological response as well as quality of life.^{7–12} There has been much research on new anti-virals as add-on therapies to either pegylated interferon (pegIFN) and ribavirin or, more recently, as all oral DAA combination regimes. While interferon-based therapy is now largely being eliminated from the armamentarium of HCV management.¹³

Hematological abnormalities¹⁴ such as anemia, neutropenia and thrombocytopenia are common during combination therapy with pegIFN and ribavirin.⁵ The side effect profile of sofosbuvir plus ribavirin combination is much better. This study aims to look at the hematological side effects of sofosbuvir plus ribavirin combination in treatment of CHC patients.

MATERIALS AND METHODS

This is a retrospective descriptive study carried out at Nishtar Hospital Multan (NHM). Data was collected

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from the Hepatitis Clinic, Outpatient Department of Gastroenterology, NHM from October 2016 to March 2017. The inclusion criteria was all treatment naive patients who had CHC. Patients with Cirrhosis, HCC and those who had both hepatitis B & C were excluded from the study.

Patients were given sofosbuvir plus ribavirin combination. Sofosbuvir was administered orally at a dose of 400 mg once daily along with ribavirin, which was administered orally as a divided dose according to body weight (1000 mg daily in patients with a body weight of <75 kg and 1200 mg daily in patients with a body weight of ≥ 75 kg).

Patients complete blood picture was sent at the baseline, before the start of treatment and then repeated at 1 month and at 3 months. Mean of the different hematological parameters was calculated. A paired samples t-test was done to compare the differences in mean. A p value <0.05 was considered statistically significant. In our study cut-off values for Significant Side effects were set as follows: Anemia (Hb<10gm/dL), Leukopenia (<4000 WBCs/mm³), Thrombocytopenia (<100,000 platelets/mm³). Data was analyzed using the SPSS version 17.

RESULTS

A total of 117 patients, 64 (54.7%) female and 53 (45.3%) male, with chronic HCV infection were included in the study. The mean age of patients was 39.28 ± 11.23 years with range of 17 to 69 years. Table 1 shows the baseline demographic and clinical characteristic of study population. Mean Hb, TLC and PLT before start of treatment was 12.51 ± 1.68 g/dL, $8.53 \pm 2.27 \times 10^3$ /mcL and $275 \pm 80.0 \times 10^3$ /mcL, respectively.

Table II shows the change in means of Hb, TLC and PLT before starting sofosbuvir and ribavirin combination therapy, and then at 1 month and 3 months of treatment. The mean Hb and TLC decreased as the treatment progressed. Hb decreased from 12.5 g/dL at baseline to 12.4 g/dL at 1 month and then 12.3 g/dL at 3 months after starting treatment. TLC decreased from 8.53×10^3 /mcL at baseline to 8.33×10^3 /mcL at 1 month and then 7.31×10^3 /mcL at 3 months of therapy. The mean of PLT showed a small increase at 1 month and then dropped to 273×10^3 /mcL at 3 months. A paired-samples T-test was done to compare the difference in means. There was a statistically significant difference between mean of TLC before starting treatment and at 1 month and 3 months ($p < 0.001$). The difference in means of Hb and PLT, before and after starting treatment, were not statistically significant ($p > 0.1$).

Our study showed anemia in 4(3.4%) patients, leukopenia in 3 (2.6%) patients and thrombocytopenia in 1 (0.8%) patient (Table 3).

Table No.I: Baseline demographic and clinical characteristic of patients (n=117)

Characteristic	n (%)
Age (years)	
Mean $\pm$ SD	39.28 ± 11.23
Range	17 to 69
Gender	
Male	53 (45.3)
Female	64 (54.7)
Mean Baseline Hb (g/dL)	12.51 ± 1.68
Male	13.4
Female	11.8
Previous Treatment Status	
Treatment naive	117 (100)
Relapse	0
Non responder	0
Partial responders	0

Table No.2: Mean of blood counts before and after starting sofosbuvir ribavirin therapy

Variable	Mean $\pm$ SD
Hemoglobin g/dL	
Baseline	12.51 ± 1.68
At 1 month	12.41 ± 1.62
At 3 months	12.3 ± 1.62
P value*	>0.1
Total Leukocyte Count $\times 10^3$/mcL	
Baseline	8.53 ± 2.27
At 1 month	8.33 ± 2.46
At 3 months	7.31 ± 2.38
P value*	<0.001
Platelet Count $\times 10^3$/mcL	
Baseline	275 ± 80.0
At 1 month	276 ± 83.6
At 3 months	273 ± 85.1
P value*	>0.1

*Paired samples t-test done to compare the difference in means before and after starting treatment.

Table No.3: Treatment discontinuation and Significant Side Effects reported during the study period.

Variable	n (%)
Discontinuation of treatment due to side effects	0
Significant Side Effects	
Anemia (Hb<10gm/dL)	4(3.4)
Leukopenia (<4000 WBCs/mm ³)	3 (2.6)
Thrombocytopenia (<100,000 platelets/mm ³)	1 (0.8)

DISCUSSION

In this descriptive study the mean Hb and TLC continued to fall through the course of treatment. The mean decrease in TLC before and after treatment was statistically significant ($P < 0.001$). Our study showed that the mean Hb dropped 0.2g/dL (from 12.5g/dL to

12.3g/dL) among patients receiving sofosbuvir and ribavirin. While Foster et al found that the median reduction in Hb level at the end of treatment was 2.0 g/dL and 1.8 g/dL, respectively, among patients receiving sofosbuvir and ribavirin for 16 and 24 weeks.¹⁵

Pontali et al found anemia (Hb<10g/dL) in 12.9%, neutropenia (<1000 neutrophils/mm³) in 42.8% and thrombocytopenia (<100,000 platelets/mm³) in 39.1% of HIV-HCV co-infected patients undergoing pegylated interferon and ribavirin treatment.¹⁶ Our study showed anemia in only 4(3.4%) patients, leukopenia in 3 (2.6%) patients and thrombocytopenia in 1 (0.8%) patient. The severe side effect profile of the above mentioned study was not only due to interferon based therapy but also due to the fact that the sample was co-infected with HIV as well. A local study at Rawalakot on hematological side effects of pegIFN and ribavirin found that the mean Hb and TLC kept on decreasing until 3 months and PLT until 4 months and then improved.¹⁹

Discontinuation of treatment in CHC patients due to severe adverse effects in clinical trials was 1 % in sofosbuvir plus RBV groups and 2% in sofosbuvir plus pegIFN and RBV groups.¹⁷ In our study there was not a single patient who discontinued treatment due to severe side effects. This clearly shows the safety profile of sofosbuvir and ribavirin combination as compared to pegylated interferon and ribavirin treatment.

In our study 4 (3.4%) patients had a drop in hemoglobin to less than 10 g/dL, but none had hemoglobin less than 8.5 g/dL. This was similar to another study where four patients, all in the 24-week sofosbuvir plus RBV group, had at least one hemoglobin level of <10g/dL but none had hemoglobin <8.5g/dL.¹⁸

The above discussion clearly depicts that sofosbuvir and ribavirin combination is much safer than the pegIFN plus ribavirin or sofosbuvir plus pegIFN and ribavirin combination. Our study had few limitations. We had a small sample size and our sampling method was non-probability sampling.

CONCLUSION

Hematological abnormalities such as a decrease in hemoglobin, leukocytes and platelets are quite uncommon and mild in sofosbuvir and ribavirin therapy, as compared to Interferon based combination therapies.

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Comparison of Primary Success Rate between Pedicled and Propeller Flaps for the Coverage of Tibial Wounds

Kashif Ali¹ and Muhammad Saleem Akhtar²

ABSTRACT

Objective: To compare the primary success rate (flap survival) of pedicled versus propeller flaps for coverage of tibial wounds.

Study Design: Randomized controlled trial study.

Place and Duration of Study: This study was conducted at the Department of Plastic Surgery Sheikh Zaid Hospital, Rahim Yar Khan and Department of Orthopedic Surgery, Quaid-e-Azam Medical College, Bahawalpur from June 2016 to December 2016.

Materials and Methods: A total of 60 patients with tibial wounds ($\leq 50\text{cm}^2$) of ≤ 1 month duration, 15-60 years of age of both genders were included in the study. Patients with chronic osteomyelitis, polytrauma, peripheral vascular disease and ischemic heart disease were excluded. Then selected patients were placed randomly into two groups i.e. Group A (pedicled flap) & Group B (propeller flap). Primary success rate (flap survival) was compared between the both groups.

Results: The mean age of patients in group A was 32.48 ± 10.84 years and in group B was 33.56 ± 10.13 years. Out of 60 patients, 42 (70.0%) were males and 18 (30.0%) were females with male to female ratio of 2.3:1. The mean size of wound in group A was $24.80 \pm 10.33\text{ cm}^2$ and in group B was $26.48 \pm 12.10\text{ cm}^2$. The mean duration of wound in group A was 11.88 ± 5.27 days and in group B was 12.72 ± 6.02 days. Primary success rate of Group A (pedicled flap) was 27 (90.0%) while in Group B (propeller flap) was 15 (83.33%) with p-value = 0.013.

Conclusion: This study concluded that primary success rate (flap survival upto 2 months) of pedicled flaps is higher compared to propeller flaps in tibial wounds coverage and should be used routinely in our general practice in order to reduce the morbidity of these particular patients.

Key Words: Tibial, wounds, coverage, flaps, survival

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INTRODUCTION

The purpose of lower extremity re-construction is coverage of open wounds of leg to give individuals a healed wound and to let them resume to their routine life. Open wounds and defects of the lower extremity results from tumor resection, trauma, diabetes and peripheral vascular disease. Because of many reasons, these wounds needs re-construction. Firstly, any exposed bone which is not surrounded by vascularized soft tissue is at higher risk of bone necrosis, sepsis and osteomyelitis.¹⁻³

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Due to defects of tissue, poor circulation and inadequate and tight local tissues, management of soft tissue around the lower 3rd of the leg and foot poses a considerable challenge to the re-constructive surgeon.^{4,5} A durable flap having very good texture of skin, good arc rotation arc, reliable vascularity, ease of dissection and minimum morbidity of donor site is the is most desired option for the coverage of these defects.⁶

In routine practice, there is a variety of pedicled or muscular flaps for the re-construction of defects of soft tissues of lower limb. These techniques are not used commonly by orthopedic surgeons because of lack of familiarization with these techniques and problems occurred from the donor site.¹⁻² Conventional reconstructive options include split skin grafting, local random fasciocutaneous flaps, Ponten's super flap, cross leg fasciocutaneous flap, pedicled muscular or musculocutaneous flaps, microvascular free tissue transfer or perforator flaps.⁷

After the introduction of microsurgery, transfer of tissue becomes one of the acceptable re-constructive option for the lower limb in the areas where local flaps are not available.⁸ With the development of perforator flaps, newer and more reliable flaps have become available for the re-construction of lower limb.⁹

Although, perforator propeller flaps are safe, effective and simple, post-operative engorgement does not occur, attractive in shape, and particularly suitable for soft tissue coverage of lower leg and foot defects but pedicled perforator flaps have several obvious advantages over propeller flaps.¹⁰ Additionally, there is no need for special instrumentation and no requirement for transfer of patients to specialist centers.¹¹

As there was very scarce literature available regarding comparison of primary success rate of tibial wounds coverage by pedicled versus propeller flaps, so the rationale of this study was to compare the primary success rate (in terms of flap survival) of pedicled versus propeller flaps for tibial wounds coverage. Moreover, the results of this study provide us with a better technique for tibial wounds coverage, so that particular technique can be recommended and routinely applied in our clinical practice to attain the better results and reduce patient's morbidity.

MATERIALS AND METHODS

This randomized controlled trial was conducted at Department of Plastic Surgery Sheikh Zaid Hospital, Rahim Yar Khan and Department of Orthopedic Surgery, Quaid-e-Azam Medical College, Bahawalpur from June 2016 to December 2016 after approval by the institutional review committee and taking written informed consent from every patient.

Total 60 patients with wounds ($\leq 50\text{cm}^2$) exclusively involving tibia of ≤ 1 month duration, having age from 15-60 years either male or female were selected. Patients with chronic osteomyelitis, fractures with segmental bone loss, mal-aligned bone fixation, patients with polytrauma, patients with peripheral vascular disease and patients of ischemic heart disease were excluded.

All the selected patients were randomly divided into two groups A & B. After adequate debridement, soft tissue coverage was provided by distally based pedicled flap followed by split thickness skin graft in group A patients while with propeller flaps in group B patients. Post operatively, operated leg was elevated to reduce edema and pain. Flap monitoring was done 2 hourly for the first 24-48 hrs for colour, temperature, turgor and capillary refill and if remained uneventful, patients were discharged on 7th post-operative day. All patients were then followed after one week of discharge and then fortnightly for at least 2 months at which final outcome was recorded. Final success rate in terms of flap survival was noted at the end of 2nd month. Flap survival was deemed as yes if covering flap had survived as a whole without necrosis (wound having dead, discolored and soft tissue with a very foul odor) or dehiscence (opening of wound along surgical site) upto 2 months and deemed as no if there was complete or partial flap necrosis or dehiscence upto 2 months. All the collected data was entered in pre-designed proforma.

Statistical analysis was performed by using SPSS version 20.0. Mean and standard deviation was calculated for age, size of wound and duration of wound. Frequency and percentage was calculated for gender and primary success rate (yes/no). The primary success rate of the two study groups was compared for difference. Chi Square test was applied to compare the primary success rate. P value ≤ 0.05 was considered as significant. Confounders like age, gender, size of wound, duration of wound were controlled through stratifications and post-stratification chi square was applied to see their effect on outcome. P-value ≤ 0.05 was taken as significant.

RESULTS

Age range in this study was from 15-60 years with mean age of 33.12 ± 10.39 years. The mean age of patients in group A was 32.48 ± 10.84 years and in group B was 33.56 ± 10.12 years.

Mean size of wound was $25.64 \pm 11.16\text{ cm}^2$. The mean size of wound in group A was $24.80 \pm 10.33\text{ cm}^2$ and in group B was $26.48 \pm 12.10\text{ cm}^2$. Mean duration of wound was 12.33 ± 5.61 days. The mean duration of wound in group A was 11.88 ± 5.27 days and in group B was 12.72 ± 6.02 days.

Primary success rate of Group A (pedicled flap) was 27 (90.0%) while in Group B (propeller flap) was 19 (63.33%). Statistically significant difference of success rate between the both groups was noted with p-value = 0.013. (Table 1)

Patients of both groups were divided into to three age groups i.e. age group 15-30 years, age group 31-45 years and age group 46-60 years. In age group 15-30 years, primary success rate was noted in 14 (93.33%) patients and 08 (61.54%) patients of study group A & B respectively. Statistically significant difference of primary success rate between group A and B was noted with p value 0.041. In age group 31-45 years, primary success rate was noted in 10 (90.91%) patients and 08 (66.67%) patients of study group A & B respectively. Statistically insignificant difference of primary success rate between group A and B was noted with p value 0.159. In age group 46-60 years, primary success rate was noted in 03 (75.0%) patients and 03 (60.0%) patients of study group A & B respectively. Statistically insignificant difference of primary success rate between group A and B was noted with p value 0.635. (Table 2)

Primary success rate was noted in 20 (90.91%) male patients of group A and 13 (65.0%) male patients of group B. Difference of success rate between the male patients of both study groups was statistically significant with p value 0.041. In female patients of group A, primary success rate was 07 (87.50%) in female patients of group B, primary success rate was 06 (60.0%) but the difference was statistically insignificant with p value 0.196. (Table 3)

Distribution of patients according to their wound size was done and two groups was made i.e. wound size ≤ 25 cm² and wound size $>25\text{--}\leq 50$ cm². In patients with wound size ≤ 25 cm², primary success rate was noted in 17 (89.47%) patients of group A and 14 (73.33%) patients of group B but the difference was statistically insignificant with p value 0.335. In patients with wound size $>25\text{--}\leq 50$ cm², primary success rate was noted in 10 (90.91%) patients of group A and 05 (41.67%) patients of group B and the difference was statistically significant with p value 0.013. (Table 4)

Division of patients according to duration of wound was done and two groups was made i.e. ≤ 15 days group $>15\text{--}\leq 30$ days group. In ≤ 15 days group, primary success rate was noted in 19 (95.0%) patients of group A and 18 (81.82%) patients of group B. Statistically

insignificant difference of primary success rate between the both groups was noted with p value 0.124.

$>15\text{--}\leq 30$ days group, primary success rate was noted in 08 (80.0%) patients of group A and 01 (12.50%) patients of group B. Statistically significant difference of primary success rate between the both groups was noted with p value 0.036. (Table 5)

Table No.1: Comparison of success rate between both groups

Study Group	Primary success rate		P value
	Yes	No	
A	27 (90)	03 (10)	0.015
B	19 (63.33)	11 (36.67)	

Table No.2: Age distribution

Age groups	Group A		Group B		P-value
	Primary success rate		Primary success rate		
	Yes	No	Yes	No	
15-30	14 (93.33%)	01 (6.67%)	08 (61.54%)	05 (38.45%)	0.041
31-45	10 (90.91%)	01 (9.09%)	08 (66.67%)	04 (33.33%)	0.159
46-60	03 (75.0%)	01 (25.0%)	03 (60.0%)	02 (40.0%)	0.635

Table No.3: Gender distribution

Gender	Group A		Group B		P-value
	Primary success rate		Primary success rate		
	Yes	No	Yes	No	
Male	20 (90.91%)	02 (9.09%)	03 (65.0%)	07 (35.0%)	0.041
Female	07 (87.50%)	01 (12.50%)	06 (60.0%)	04 (40.0%)	0.196

Table No.4: Distribution according to wound size

Size of wound	Group A		Group B		P-value
	Primary success rate		Primary success rate		
	Yes	No	Yes	No	
≤25 cm ²	17 (89.47%)	02 (10.53%)	14 (73.33%)	04 (26.67%)	0.335
>25-≤50 cm ²	10 (90.91%)	01 (9.09%)	05 (41.67%)	07 (58.33%)	0.013

Table No.5: Distribution according to duration of wound.

Duration of wound	Group A		Group B		P-value
	Primary success rate		Primary success rate		
	Yes	No	Yes	No	
≤15 days	19 (95.0%)	01 (5.0%)	18 (81.82%)	04 (18.18%)	0.124
>15-≤30 days	08 (80.0%)	02 (20.0%)	01 (12.50%)	07 (87.50%)	0.036

DISCUSSION

There are a number of methods for achieving closure of open tibial fractures, including direct suturing, split-thickness skin-graft, local muscle flap, local fasciocutaneous flap or free vascularized tissue transfer. So, we have conducted this study to compare the primary success rate (flap survival upto 2 months) of pedicled versus propeller flaps for coverage of tibial wounds.

In our study, primary success rate (covering flap had survived as a whole without necrosis (wound having dead, discolored and soft tissue with a very foul odor) or dehiscence (opening of wound along surgical site)

upto 2 months) of Group A (pedicled flap) was 27 (90.0%) while in Group B (propeller flap) was 19 (63.33%). Georgescu AV et al¹² has shown success rate of propeller flaps in terms of flap survival as 72% while Tintle SM et al¹³ in their study has shown the success rate of pedicled flaps as 97% in soft tissue coverage of distal tibial wounds. In a study done by Zayakova YK et al¹⁴ on 11 pedicled flaps patients, successful results were observed in 10 (83.33%) cases.

In a meta analysis of 50 articles documented success rate of sural flaps as 82%.¹⁵ Similarly in an retrospective analysis of sural flap, the rate of complication was 59%(41/70 flaps), partial and complete necrosis in 17% 19% flaps.¹⁶

In another study, Akhtar S et al¹⁷ reported flap survival rate in 78.5% patients, partial and complete necrosis in 16.5% patients and 9.5% patients.

Ashfaq F et al¹⁸ in their study had used distally based pedicled flap to cover defects of ankle and foot in five cases and a total complication rate of 60% was observed. There was one (20%) total flap loss and two partial flap necrosis (40%). Complication rate is similar to Baumeister, SP et al¹⁹ who critically examined complications of sural flap in 70 consecutive cases and found 59% complication rate with 19 % rate of total flap necrosis and 17% partial flap necrosis. One study from Rawalpindi, Pakistan has compared medial plantar artery flap to sural flap for coverage of heel defects and found former to be better in terms of weight bearing, early mobilization and less complications.²⁰ So, on the whole it is concluded that primary success rate (flap survival) of pedicled flaps is higher compared to propeller flaps in tibial wounds coverage and should be used routinely in our general practice in order to reduce the morbidity of these particular patients.

CONCLUSION

This study concluded that primary success rate (flap survival upto 2 months) of pedicled flaps is higher compared to propeller flaps for the coverage of tibial wounds. So, we recommend that pedicled flaps should be used routinely in our general practice for coverage of tibial wounds instead of propeller flaps in order to reduce the morbidity of these particular patients.

Author's Contribution:

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 Revisiting Critically: Muhammad Saleem Akhtar
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Diagnostic Utility of FNAC and Pathological Profile of Head and Neck Lesions

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ABSTRACT

Objective: To study the diagnostic yield of FNAC when compared with histopathology and to determine the pathological spectrum of head and neck lesions in our region.

Study Design: Cross-sectional study

Place and Duration of study: This study was conducted at the Department of Pathology, Frontier Medical & Dental College, Abbottabad from January 2016 to April 2017,

Materials and Methods: A total of 150 patients with superficial and palpable head & neck swelling underwent fine needle aspiration and cytology using standard protocol.

Results: Out of 150 patients, there were 84 males and 66 females with male to female ratio of 1.27:1. Mean age was 35±17.42 years. Most of the patients, 77.33%, were between the ages of 21-60 years. As per the site of involvement, most of the lesions, 40%, occurred in lymph nodes followed by salivary glands, 30% cases, and cystic, soft and other tissues, 30% cases. The most common benign lesion involving lymph nodes was tuberculosis while most common malignant lesion involving lymph nodes was metastatic deposits to lymph nodes. In case of salivary glands, the most common benign lesion was pleomorphic adenoma while most common malignant lesion was mucoepidermoid carcinoma. Among benign lesions, lipoma was observed in majority of cases involving cystic, soft and other tissues while among malignant lesions, metastatic squamous cell carcinoma was most common. When compared to histopathology, the overall sensitivity and specificity of FNAC was 73% and 93% in the diagnosis of head and neck lesions. In case of salivary gland lesions, sensitivity and specificity of FNAC was 65% and 89% while it was 72% and 95% in case of lymph node lesions and 84% and 100% respectively in case of cystic, soft tissue and other tissue lesions.

Conclusion: Head and neck region encompasses a diversified range of diseases ranging from inflammatory to malignant ones. Accurate diagnosis of these lesions is very important for their successful treatment. FNAC is a safe, reliable, convenient and minimally invasive procedure which can be done on out-patient basis. It provides accurate information in most cases which in turn helps in making treatment decisions as it ascertains the type of lesion.

Key Words: Salivary gland, Head and neck, FNAC

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INTRODUCTION

Head and neck lesions are quite common in clinical practice. These lesions include both benign and malignant conditions. Benign conditions include infections, reactive lymph node hyperplasia, etc while malignant lesions could be primary and secondary.¹ Primary malignant lesions are the ones which develop primarily in this area while secondary malignant lesions

are the ones which usually metastasize to this area. Malignant head and neck lesions are rated 10th most common cancers globally.² Definitive management of these lesions depends upon accurate diagnosis of these lesions. Diagnosis is usually made on clinical grounds and confirmed through laboratory investigations. Most appropriate laboratory investigation for such lesion should be the one which is cost-effective, easy to perform, can be done on out-patient basis and minimally invasive. Fine needle aspiration and cytology (FNAC) is one of such laboratory investigations which fulfill these criteria. It is simple, yet cheap, can be done on out-patient basis and minimally invasive.^{3, 4} It provides an additional advantage as to avoid surgery in inflammatory and non-malignant lesions.¹ FNAC is specifically important in clinical settings where facilities or expertise for histopathological examination are either not available or lacking.⁵

We have conducted this clinical study to determine the pathological profile of head and neck lesions as well as

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determine the diagnostic yield of FNAC when compared with histopathology.

MATERIALS AND METHODS

This cross-sectional study was conducted in the Department of Pathology, Frontier Medical & Dental College, Abbottabad, from January 2016 to April 2017. This was a convenience non-probability sampling. All those patients who had a superficial and clinically palpable swelling in head and neck area, of both genders and all ages were included in the study. Patients with thyroid lesions, or those with history of bleeding disorders, or who had been diagnosed with a malignancy in head and neck region or those who were unwilling for FNAC and biopsy were excluded from the study. Informed consent was taken. A structured performa was used to record history, especially related to the swelling and history of tuberculosis in family, systemic and local examination findings. FNAC was done using 22 to 23 gauge needle attached to a 10 ml syringe under strict aseptic conditions. The material was aspirated under negative pressure and then smeared on atleast two slides which were later air-dried or wet fixed and then, stained with Giemsa and Papanicolaou stains. Zeihl Neelsen stain was used when tuberculosis was suspected or lymph node aspirate was purulent or cheesy. Biopsy specimens from these patients for histopathological examination were processed after fixing them in 10% formalin. They were stained using Haematoxylin and Eosin stain. Special stains were used as and when required. Data was recorded, managed and analyzed using Statistical package for social sciences (SPSS, version 21).

RESULTS

There were 150 patients in this study. There were 84, (56%) males and 66, (44%) females with male to female ratio of 1.27:1. Mean age was 35 ± 17.42 years. Age-wise stratification of study population is given in Table 1. Most of the patients, 77.33%, were between the ages of 21-60 years, showing higher predilection for this age group.

Table No.1. Age-wise stratification of study group, (n =150)

Age group	Number	Percentage
Less than 20 years	24	16%
21 – 40 years	68	45.33%
41 – 60 years	48	32%
> 60 years	10	6.67%
Total	150	100%

As per the site of involvement, most of the lesions, 40%, occurred in lymph nodes followed by salivary glands, 30% cases, and cystic, soft and other tissues, 30% cases, as shown in Table 2.

The most common benign lesion involving lymph nodes was tuberculosis, (29 cases), while most common malignant lesion was metastatic deposits in lymph nodes, (16 cases), followed by Hodgkin and non-Hodgkin lymphoma in 08 and 04 cases respectively.

Table No.2: Stratification of cases according to their site and malignant potential, (n=150)

Site	Malignant Lesions (n, %age)	Non malignant lesions (n, %age)	No, %age
Lymph node lesions	28, 18.67%	32, 21.33%	60, 40%
Cystic, soft and other tissue lesions	14, 9.33%	31, 20.67%	45, 30%
Salivary gland lesions	15, 10%	30, 20%	45, 30%
Total	57, 38%	93, 62%	150, 100%

Table No.3 Stratification of head and neck lesions, (n=150)

No malignant lesions	Number, (%age)	Malignant lesions	Number, (%age)
Lymph node			
Tuberculosis	29, (19.33%)	Metastatic deposits	16, (10.66%)
Reactive hyperplasia	03, (2%)	Hodgkin's lymphoma	08, (5.33%)
		Non-Hodgkin's lymphoma	04, (2.66%)
Salivary gland			
Pleomorphic adenoma	25, (16.66%)	Mucoepidermoid carcinoma	09, (6%)
Sialadenitis	05, (3.33%)	Squamous cell carcinoma	03, (2%)
		Acinic cell carcinoma	03, (2%)
Cystic, soft and other tissues			
Lipoma	12, (8%)	Metastatic squamous cell carcinoma	12, (8%)
Epidermal cyst	09, (6%)	Small round cell tumor	02, (1.33%)
Schwannoma	05, (3.33%)		
Cystic hygroma	03, (2%)		
Thyroglossal cyst	01, (0.66%)		
Hemangioma	01, (0.66%)		

In case of salivary glands, the most common benign lesion was pleomorphic adenoma, (25 cases), while most common malignant lesion was mucoepidermoid carcinoma, (09 cases). Similarly, among cystic, soft and other tissues lesions, the most common benign lesion was lipoma, (12 cases), while most common malignant lesion was metastatic squamous cell carcinoma, (12 cases), as shown in Table 3.

When compared to histopathology, the overall sensitivity and specificity of FNAC was 73% and 93% in the diagnosis of head and neck lesions. In case of salivary gland lesions, sensitivity and specificity of FNAC was 65% and 89% while it was 72% and 95% in case of lymph node lesions and it was 84% and 100% respectively in case of cystic, soft tissue and other tissue lesions.

DISCUSSION

There are wide variety of lesions in head and neck region associated with anatomical structures present in this region i.e. lymph nodes, thyroid, salivary glands, etc. These lesions range from inflammatory to malignant ones.⁶ Careful and accurate diagnosis of these lesions is pivotal in their treatment.

Out of 150 cases in our study, there were 56% males and 44% females. In their study which was conducted in Nepal, Pathak et al have reported the same. There were 55.5% males and 44.5% females.³ Similarly, Sharma et al have also reported male preponderance in their Indian subjects where 57.93% of their study subjects were male and 42.07% were female.² Majority of patients, 77.33%, in our study were between the ages of 21-60 years. Similarly, as reported by Rathore et al, majority of their Indian patients were between second and sixth decade of life.⁵ As per the site of involvement, most of the lesions in our study, 40% occurred in lymph nodes followed by salivary glands and cystic, soft and other tissues with 30% cases in each group respectively. This finding corroborated with other studies. Pathak et al have reported that lymph nodes followed by soft tissue and salivary glands were primarily involved in their Nepalese subjects.³ Likewise, in another study conducted by Rajbhandari et al in Nepal, lymph nodes were predominantly involved in 45% of cases.⁷ Singal et al conducted their study in India. The major site of involvement in their study was lymph nodes which were involved in 48.09% of cases.⁸ Similarly, in another study conducted in India by Kate et al, lymph nodes were involved in 51.5% of cases.⁶ In our study, the most common benign lesion involving lymph nodes was tuberculosis, (29 cases, 19.33%), while most common malignant lesion found was metastatic deposits in lymph nodes, (16 cases, 10.66%). Similar to our study, a study conducted in Peshawar, Pakistan, by Ahmad et al have shown that the most common benign and malignant lesions involving lymph nodes were tuberculous lymphadenitis and metastasis to

lymph nodes respectively.⁹ Correspondingly, Rathore et al have found out that tuberculosis was the main etiological agent of lymph node swelling while metastatic squamous cell carcinoma was the commonest malignant lesion involving lymph nodes.⁵ Likewise, Kate et al have also reported the same with tuberculous lymphadenitis being the commonest benign lesion and metastasis being the commonest malignant lesion involving lymph nodes.⁶ Sharma et al have also reported that the most common lesion affecting lymph nodes was tuberculosis.² Similarly, in another Indian study conducted by Khetrpal et al, tuberculosis was reported to be the major cause involving lymph nodes in 23.3% cases.¹

In case of salivary glands, the commonest benign lesion was pleomorphic adenoma followed by sialadenitis while commonest malignant lesion involving lymph nodes was mucoepidermoid carcinoma. Our findings were consistent with other studies. Chauhan et al, Fernandes et al, Sharma et al and Singal et al also reported that the pleomorphic adenoma and mucoepidermoid carcinoma were the most common benign and malignant lesions affecting salivary glands in their Indian patients.^{2, 8, 10, 11} Similarly, Kate et al and Khetrpal et al have found out that pleomorphic adenoma was the most common benign lesions affecting salivary glands in their study.^{1, 6}

Among cystic, soft and other tissues lesions, lipoma, (12 cases, 08%), was the most common benign lesion while metastatic squamous cell carcinoma, (12 cases, 08%), was the most common malignant lesion. Similar results were found in other studies. Khetrpal et al have reported that the most common benign lesion involving cystic and soft tissue was lipoma which was observed in 14 cases while squamous cell carcinoma was observed in one case.¹ Kate et al also reported that most common benign lesion affecting soft and other tissues was lipoma, 22.2%.⁶

When compared to histopathology, the overall sensitivity and specificity of FNAC in diagnosing head and neck lesions was 73% & 93% respectively. Among Nepalese subject, Rajbhandari et al have reported the sensitivity and specificity of this procedure to be 86% and 97% respectively.⁷ Similarly, among Indian patients, overall sensitivity and specificity of FNAC was reported to be 93.24% and 100% by Khetrpal et al.¹ Fernandes et al reported the overall sensitivity and specificity to be 87.5% and 100% respectively while Singal et al have found that the sensitivity and specificity were 91.54% and 98.16% respectively.^{8, 11} This discrepancy in results could be due to the fact that FNAC is a blind procedure and can lead to insufficient or improper sample. Similarly, mixing of samples with macrophages or lymphoid tissue can lead to incorrect results on FNAC which histopathology can later confirm.

CONCLUSION

Head and neck region encompasses a diversified range of diseases ranging from inflammatory to malignant ones. Accurate diagnosis of these lesions is very important for their successful treatment. FNAC is a safe, reliable, convenient and minimally invasive procedure which can be done on out-patient basis. It provides accurate information in most cases which in turn helps in making treatment decisions as it ascertains the type of lesion.

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

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Comparison of Biometry Readings Taken by Intra Ocular Lens (IOL) Master and Sonomed in the Pakistani Population

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ABSTRACT

Objective: To compare the Keratometry (K) readings, axial length and posterior chamber (PC) intraocular lens power taken by IOL master and Sonomed in the Pakistani population.

Study Design: Comparative / cross-sectional study

Place and Duration of Study: This study was conducted at the Department of Ophthalmology Unit 2, Dow University of Health Sciences, Karachi from 1st March 2017 to 31st May 2017.

Materials and Methods: Keratometry readings was recorded in two meridians, horizontal (K1) and vertical (K2) axes, axial length of the eye was measured and posterior chamber intraocular lens (PC IOL) power was recorded by IOL Master and Sonomed in 74 eyes.

Results: The mean K1 of the study group with IOL Master and Sonomed were respectively 43.6 ± 1.9 mm and 43.5 ± 1.9 mm, and the mean K2 were 44.5 ± 2 mm and 44.6 ± 2 mm respectively. No significant differences were observed in the measurements of K1 (p value >0.160) and K2 (p value >0.704). The mean axial length with IOL master was 23.2 ± 0.9 mm and was significantly lower than corresponding measurement with Sonomed, 23.3 ± 0.9 mm ($P < 0.001$). The PC IOL power recorded with IOL Master (21.5 ± 2.2 mm) was significantly higher than that with Sonomed (21.1 ± 2.4 mm) ($P < 0.001$).

Conclusion: The mean axial length measurement was significantly lower when recorded with IOL master and PC IOL power was significantly higher as compared to Sonomed. There was no significant difference in the mean K1 and K2 measurement when recorded with the two methods.

Key Words: Biometry, axial length, IOL master, Sonomed

Citation of articles: Khokar AR, Ashraf NN, Hussain M. Comparison of Biometry Readings Taken by Intra Ocular Lens (IOL) Master and Sonomed in the Pakistani Population. Med Forum 2017;28(8):55-58.

INTRODUCTION

Amongst the different types of eye surgeries, cataract extraction leads the list. With the passage of time and the refinement of technique, the outcome of cataract surgery has improved considerably and also have the expectations of the patients. Precise biometry and calculation of Intraocular lens (IOL) power are essential for good outcome¹.

As the newer and better types of intraocular lenses have been developed, the techniques of biometry have also changed in the recent years. Amongst the different methods, there is A-Scan Biometry which employs the principle of echo delay time.²

The Intraocular lens (IOL) master is another tool of measurement of axial length and is based on the principle of partial coherence interferometry².

Anterior chamber (AC) depth assessment is also very important as it is needed in the biometric formulae. New techniques for AC depth measurement are scanning-slit topography, anterior segment optical coherence tomography (OCT) and Scheimpflug imaging technique³. In case there are opacities in the media or if there is dense cataract, the ultrasound methods show better results.⁴

Biometric measurements have to be very precise. A 0.25 D error can occur with 0.1mm incorrect measurement of axial length. Similarly, 1.25D error from 0.5 mm difference and 2.50 D error results from 1.0 mm difference.⁵ The data is then fed into IOL calculation formulae, many have been made. At first were the third generation formulas and then came the fourth generation formulas.^{6,7,8}

IOL master incorporates infra-red light of the twin beam. Ultrasound waves reflect at the level of the internal limiting membrane as opposed to the partial coherence laser interferometry in which laser light is reflected from the retinal pigment epithelium.² To make results from both the machines reliable, a conversion factor is put in the software of the instrument. IOL Master is a non touch technique and is the preferred method. However it does not give reliable results where there are opacities in the media where Sonomed is the preferred choice.

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This study has been conducted to compare the K-readings, axial length and IOL power measurements taken by the IOLmaster and Sonomed in the Pakistani population and to see which one of the two is a better technique.

MATERIALS AND METHODS

This study was conducted over a period of 3 months at the Diagnostic Section of the Department of Ophthalmology, Unit II, of Dow University of Health Sciences from 1st March 2017 to 31st May 2017. Recordings were made in 74 consecutive patients undergoing cataract surgery. An informed consent was taken prior to inclusion in the study. Axial length measurement, K-readings and IOL power was taken both by IOL master (NIDEK) and Sonomed in 74 eyes. Keratometry was performed in the horizontal (K1) and vertical (K2) meridian. Axial length was measured and Intraocular lens power was calculated both by IOL Master and Sonomed. Prior to axial length measurement by Sonomed, eye was anaesthetised with topical anaesthetic drops. Three readings were taken for each parameter and the mean was calculated. The data was then entered into Microsoft excel and subsequently transferred to SPSS for analysis..

Statistical analysis: Frequencies and percentages were computed for the description of gender and eye. Descriptive statistics of continuous variables such as age, keratometry measures, axial length and PC IOL were expressed with mean $\pm$ standard deviation. Before proceeding comparative analysis, normality of the continuous variables was assessed by Kolmogorov-Smirnov's test and outcome exhibited p values more

than 0.05 indicating fulfillment of normality assumptions for all the continuous variables. Comparative analysis was divided into two steps as univariable and multivariable. At univariable stage, to compare biometry readings using IOL master and sonomed paired samples t-test was run. While to compare these readings with respect to gender and eye, independent samples t-test was executed. Pearson's correlation coefficient was measured to determine association of age with biometry readings. At multivariable stage, repeated measures ANOVA was used to compare biometry readings with the two diagnostic methods while confounding with personal characteristics like gender and age.

RESULTS

Out of total 74 patients, 35 (47.3%) were female. Nearly half of the patients' left eye was used for the diagnosis. The average age of the participant was 54.9 ± 14.2 years.

The mean K1 of the overall sample with IOL master and sonomed were respectively 43.6 ± 1.9 mm and 43.5 ± 1.9 mm. While the mean K2 were 44.5 ± 2 mm and 44.6 ± 2 mm while measured using IOL master and sonomed respectively. No significant differences were observed in the measurements of K1 ($P=0.160$) and K2 ($P=0.704$). Axial length with IOL master was 23.2 ± 0.9 mm and significantly lower than measured with sonomed 23.3 ± 0.9 mm ($P<0.001$). The PC IOL power using IOL master (21.5 ± 2.2 mm) was significantly higher than diagnosed with sonomed (21.1 ± 2.4 mm) ($P=0.001$).

Table No.1: Biometry readings between gender and eye

		With IOL Master				With Sonomed			
		Keratometry (k1)	Keratometry (k2)	Axial length	PC IOL	Keratometry (k1)	Kertometry (k2)	Axial length	PC IOL
Gender	F (n=35)	43.2 ± 1.7	44.8 ± 1.8	22.9 ± 0.6	22.1 ± 2.3	44.0 ± 1.7	44.8 ± 1.8	23.0 ± 0.8	21.7 ± 2.6
	M (n=39)	43.1 ± 2.0	44.3 ± 2.2	23.5 ± 0.9	20.8 ± 2.0	43.1 ± 2.0	44.3 ± 2.2	23.6 ± 0.9	20.6 ± 2.2
Eye	L (n=36)	43.5 ± 2.0	44.5 ± 2.0	23.2 ± 0.9	21.4 ± 2.3	43.4 ± 1.9	44.6 ± 2.0	23.3 ± 1.0	21.1 ± 2.4
	R (n=38)	43.6 ± 1.8	44.6 ± 2.0	23.2 ± 0.8	21.5 ± 2.2	43.6 ± 1.9	44.5 ± 2.0	23.3 ± 0.9	21.1 ± 2.5
Overall (n=74)		43.6 ± 1.9	44.5 ± 2.0	23.2 ± 0.9	21.5 ± 2.2	43.5 ± 1.9	44.6 ± 2.0	23.3 ± 0.9	21.1 ± 2.4

Table 1 described the biometry readings between gender and eye. Among females, the mean K1 using IOL master was significantly higher ($P=0.034$) as compared to males. However, no significant difference was found in K2 readings between male and female when measured with IOL master ($P=0.343$). Axial length ($P=0.001$) and PC IOL power ($P=0.010$) were significantly higher in males when diagnosed with IOL master. While diagnosing biometry readings using sonomed K1 measure ($P=0.039$) and PCL IOL ($P=0.043$) of female and axial length of male ($P=0.005$)

were significantly higher. On the other hand, no significant difference in the mean values of K1 was found when measured with sonomed ($P=0.351$). Moreover, the biometry readings did not show significant difference in left and right eyes either diagnosed with IOL or sonomed (all P values >0.05). The correlations of age with all biometry readings were insignificant except with the PC IOL. The higher age of the patients depicted lower values of PC IOL when measured with both IOL master ($r= -0.297$) and sonomed ($r= -0.258$).

After confounding for gender the K1 did not show significant difference in readings from PC IOL and sonomed ($P=0.159$). However, axial length ($P<0.0001$) and PC IOL ($P=0.001$) showed significant difference in the readings from IOL master and sonomed. The readings of PCL IOL using IOL master and sonomed did not exhibit significant difference when adjusted for only age ($P=0.251$) and for both age and gender simultaneously ($P=0.323$).

DISCUSSION

Partial coherence interferometry is being incorporated in different devices since 2001 for Biometry⁹. The reason for its popularity is that it's non-contact, less time consuming and accurate.

Several studies have been conducted, comparing the different biometric techniques for measurement of these parameters. In our study we have compared the K-readings, axial length and IOL power taken by IOL master and Sonomed (Ultrasonic method) in the Pakistani population. Although similar study has been done elsewhere, there is little data for the Pakistani population.

Jaswinder et al reported a favourable comparison and same values between Lenstar and IOL master but not with ultrasound biometry¹⁰. In IOL master, the measurement is between anterior corneal surface and retinal pigment epithelium, whereas in ultrasound biometry it is up to the internal limiting membrane¹¹.

In 2016, Kongsap reported good comparison between axial length, anterior chamber depth and k-reading between IOL master and a new optical low coherence reflectometer. But comparison wasn't good enough for White to white diameter ($r=0.259$)¹². In our study K readings were the same with both machines but axial length was significantly lower and PC IOL power was significantly higher with IOL master.
Nakwi documented in 2014 a conversion factor for the IOL master and ultrasound biometry. With diminution of wavelength, the results get better and there are better results with laser interferometry because of smaller wavelength.¹³

In certain scenarios such as hard cataracts, hazy media corneal degeneration etc. Ultrasonic biometry in conjunction with laser interferometry is needed¹⁴. It was reported by Hitzenberger et al that as compared to immersion, axial length by IOL master came out to be 0.18 mm more.¹⁵ Whereas, this difference between the two methods was about 0.22 mm as documented by Kiss et al.¹⁶

In a study by Honkanen et al in 2013 documenting residents training about 50% cases were within 0.50 DS of the expected result.¹⁷

Shin, Lee et al in 2012, compared the pre and post-operative ocular biometry in eyes with phakic intraocular lens implants. The anterior chamber depth was 1 mm shallower post operatively after putting in an

ins fixated IOL.¹⁸ It was seen that the effective measure of axial length by silicon oil is less impaired in doing it with IOL master.¹⁹

Kunert, Peter et al compared biometry done with new swept source OCT biometer and partial coherence interferometry and optical low coherence reflectometry. There was a good comparison with SS-OCT giving the most reliable results²⁰. Mehrawaran et al performed it with 5 types of devices and showed a good correlation between them²¹.

CONCLUSION

In conclusion, the mean axial length measurement was found to be significantly lower when recorded with IOL master and PC IOL power was significantly higher as compared to Sonomed. There was no significant difference in the mean K1 and K2 measurement when recorded with the two methods. Therefore both machines have to be used in conjunction for measurement of axial length and PC IOL power but either one can be used for keratometry.

Author's Contribution:

Concept & Design of Study: Abdul Rasheed Khokar
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Data Analysis: Mehwish Hussain
Revisiting Critically: Nargis Nizam Ashraf
Final approval of version: Abdul Rasheed Khokar

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

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Comparative Efficacy of Trimetazidine and Ranolazine in Patients with Angina

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ABSTRACT

Objective: To determine the relative efficacy of two newly available metabolically active drugs Trimetazidine and Ranolazine in a subset of patients whose angina symptoms were not ameliorated with optimum dose of conventional anti-anginal medications (B-Blockers, Calcium Channel Blockers and Nitrates), as further increment in their dosage was detrimental for the rate pressure product.

Study Design: Prospective / Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Cardiology Department, DHQ Teaching Hospital Dera Ghazi Khan from November 2016 to December 2016.

Materials and Methods: A total of 106 patients with symptomatic angina from Dera Ghazi Khan urban area were divided into two equal groups each consisting of 53 patients. In group I Trimetazidine and in group II Ranolazine was added in addition to their routine optimum treatment. They were evaluated after six weeks through a questionnaire for angina symptoms.

Results: The relief of anginal symptoms was 39.6% in group I (Trimetazidine group) while it was 67.9% in group II (Ranolazine group).

Conclusion: The Ranolazine is more effective in controlling the angina symptoms as compared to Trimetazidine as early as six weeks.

Key Words: Chronic Angina, Trimetazidine, Ranolazine

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INTRODUCTION

Chronic angina is a debilitating illness with annual mortality of 1.6% to 3.2%. Anginal episodes are still experienced in about 26% of the patients despite receiving optimum anti-anginal therapy or have undergone percutaneous or surgical revascularization procedures.¹ Among these patients many are not suitable candidates for further revascularization or cannot tolerate additional doses of B-Blockers or calcium channel blockers as it adversely affects the rate pressure product (double product). Trimetazidine or Ranolazine do not significantly alter the double product and are beneficial for many patients particularly those who cannot tolerate further reduction of the double product.^{2,3,4}

Trimetazidine is partial inhibitor of oxidation of free fatty acids and shifts ischemic myocytes oxidation to

utilize more carbohydrate than fatty acids as carbohydrate's faster metabolism needs less energy than fat metabolism. It is a well-tolerated drug without any absolute contra indications.⁸⁻¹⁰

The proposed anti-ischemic mechanism of Ranolazine is that it inhibits late sodium inward current. The late sodium current channels are upregulated during ischemia and heart failure⁵. Activation of these channels causes increased sodium influx into myocytes thereby the activation of sodium calcium mechanism increases intracellular calcium which can lead to metabolic, functional and electrical dysfunction. So Ranolazine attenuates the adverse effect of calcium overload and improves myocardial mechanical, electrical and metabolic function.³ The metabolic efficacy of Ranolazine for less ischemia has been demonstrated in a study named "Acute Coronary Syndrome-Thrombolysis in Myocardial Infarction, (MERLIN-TIMI 36)" trial in which 6,560 patients were randomized to receive either placebo or Ranolazine.⁴ The result showed treatment with Ranolazine was associated with significantly less episodes of recurrent myocardial Ischemia, non sustained VT and pre mature ventricular ectopics. MARISA trial (mono therapy assessment of Ranolazine with stable angina) was a placebo control trial which documented the role of Ranolazine in patients with stable angina.⁶⁻⁷

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MATERIALS AND METHODS

Patients of Dera Ghazi Khan urban area who were diagnosed cases of angina and complaining of increase in frequency of chest pain for the last 3 to 4 months were evaluated through a questionnaire.

- Age
- Sex
- Address
- Duration of symptoms

Characteristics of chest pain

- Number of episodes/week after walking one block
- Number of sublingual tablets used to relieve pain
- Duration of chest pain
- Use of medicine

ECG, CBC, CUE, Renal parameters and Chest X-Ray were obtained for every patient.

On clinical evaluation pulse, B.P, temperature and respiratory rate was noted along with the examination of cardiovascular system. In this way 106 male patients were enrolled and divided into two groups each consisting to 53 patients. Group 1 patients were given Trimetazidine 35mg twice daily while patients of Group 2 were given Ranolazine 750mg as an add on therapy. Both groups were having diabetic patients 25 in Trimetazidine group while 26 in Ranolazine group. The average blood sugar was 210 ± 8 in both groups. The common medicines used by both groups are given below:

- Tab. Isorbide5-Mononitrate 60mg x 1x OD/ Isorbide mononitrate 20mg x BID.
- Tab. Metoprolol 100mgxOD/ Atenolol 50mg OD/ Bisoprolol 5mg to 7.5 mg x OD
- Tab. Diltazem 60mg x TID/ Sustained release preparation 60mg BID
- Aspirin 75mg to 150mg OD
- Clopidogrel 75mg OD
- Statin 10mg to 20mg OD

With these medications the titrated heart rate was around 50 beats per minute and blood pressure was around 100/70 mmHg.

RESULTS

After six weeks patients were evaluated for number of anginal episodes by a cardiologist who was blinded to the treatment regime and results are given below:

In Trimetazidine group, 3 patients got 100% relief (no angina episode in a week) while in 7 patients got 75% relief (1 episode in a week). 50% (2 episodes) relief was noted in 4 patients and 25% (3 episodes) relief was noted in 6 patients. 33 patients experienced no relief of their angina symptoms.

In Ranolazine group, 9 patients got 100% relief (no angina episodes) while 75% (1 episodes) relief was

noted in 18 patients. 50% (2 episodes) relief in 10 patients while 4 patients had only 25% (3 episodes) relief.

Table 1 shows the detail of relief of angina episodes in both groups.

Table No.1: Relief of angina episodes in both groups

Percentage relief of angina episodes per week	Trimetazidine Group I (n=53)	Ranolazine Group II (n=53)
100%	3 (5.6%)	9 (16%)
75%	7 (13.5%)	18 (33.9%)
50%	4 (7.5%)	10 (18%)
25%	6 (11.3%)	4 (7.5%)
0%	33 (62.24%)	12 (22.6%)

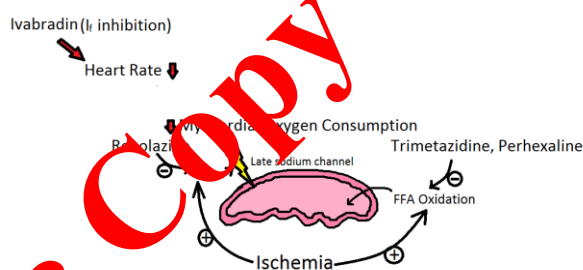


Figure No.1: FFA = free fatty acids, If = Pacemaker inward funny current

DISCUSSION

The management of patients with angina who are already on optimally titrated doses of nitrates, beta blockers and/or calcium channel blockers is challenging as further reduction in rate pressure products may be detrimental. So far them surgical revascularization or another alternative approach should be used. Courage trial included a large population with stable angina who were randomized to optimum medical management with or without PCI. There was no difference in cumulative rate of death and MI after 4.6 years. However in their management currently available metabolically active drugs like Trimetazidine, Ranolazine, Perhexilline and Ivabradine were not used. These metabolic drugs do not alter the rate pressure product and relieve angina by shifting cardiac myocytes metabolism from fatty acids to carbohydrate.¹⁰⁻¹⁵ Diagram 1 shows the mechanism of action of various metabolically.

Normally fatty acid oxidation is the major source of energy for myocardium up to 80% while glucose metabolism provides remaining quantity of energy. At rest, heart uses 15 to 20% of its maximum oxidative capacity while during ischemia this stressed myocardium surpasses its metabolic reserve and an aerobic limit is reached as a consequence anaerobic metabolism begins with further decline in ventricular

performance and worsening of angina.^{15,16} We compared two metabolically active drugs (Trimetazidine and Ranolazine) whose efficacy is documented in various clinical trials that which drug is relatively more effective in our subset of patients and may be added first to standard regimen to save the money of the patients.¹⁷⁻¹⁹ The literature revealed that the combination of Ranolazine when added to CCB's, BB's shows positive outcomes across all outcomes assessed while Trimetazidine when added to CCB's shows significant benefits for most but not for all outcomes. A prospective double blind study of 53 males with chronic angina were randomized to 12 weeks treatment of either Trimetazidine or Ranolazine and were assessed for flow mediated endothelium dependent or nitroglycerin induced dilatation of brachial artery using high resolution ultrasound. The results indicated that both drugs were effective in producing brachial artery dilatation in almost similar manner though Trimetazidine has better effect on flow dependent dilatation. While our study revealed better control of angina in patients who were using Ranolazine in addition to their standard anti-anginal regimen than those to whom Trimetazidine was given in addition to their anti-anginal medication (67.9% vs 39.6%) over a period of six weeks while all other studies were conducted for 12 weeks or more.²⁰⁻²³ However absolute relief was only in (16% vs 5.6%). There were no significant side effects in both groups except complaint of dizziness in two patients taking Ranolazine. Better results of our study may be attributed to the use of long acting nitrate in both groups and almost 50% of the patients in both groups were diabetics with suboptimal glycemic control as the TERISA study reveals that Ranolazine reduced frequency of anginal episodes in patients with higher Hb A1C value. TERISA study also revealed that Ranolazine slowed the progression to overt diabetes. Optimization of anti-anginal treatment with the help of Ranolazine and Trimetazidine may provide the result beyond what is documented in COURAGE trial and wide availability of both drugs need further studies to evaluate their full therapeutic benefits.²⁴⁻²⁵

CONCLUSION

The Ranolazine is more effective in controlling the angina symptoms as compared to Trimetazidine as early as six weeks.

Author's Contribution:

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

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Comparing the Effectiveness of Lisinopril and Losartan Potassium in Treatment of Microalbuminurea in Newly Diagnosed Type II Diabetes Mellitus

Shabnam Seher, Arooj Iqbal and Tayyuba Irum

ABSTRACT

Objective: is to compare effectiveness of Lisinopril (ACE inhibitor) and Losartan Potassium (ARB) in treatment of microalbuminurea in newly diagnosed Type II DM patients in terms of reduction in microalbuminurea.

Study Design: Randomized control trial study.

Place and Duration of Study: This study was conducted at the Department of General Medicine, Allied Hospital, Faisalabad from March 2016 to August 2016.

Materials and Methods: A total number of 320 (100%) patients was enrolled in the trial. SPSS (v 23) was used to analyze the patient's data. Mean and SD were calculated and presented for numerical data and frequency percentages were calculated and presented for qualitative data. Chi square test was applied to see effect modification. P value ≤ 0.05 was considered as significant.

Results: A total number of 100% (n=320) microalbuminurea in Type II DM patients were included in this study, both genders. In our study in group (P), 85% (n=136) patients showed reduction in microalbuminurea and in group (L), 81.9% (n=131) patients were observed reduction in microalbuminurea. To compare the efficacy of Losartan Potassium and Lisinopril, independent sample t-test was applied. It was observed that there was no significant difference between the efficacies of Losartan Potassium and Lisinopril, i.e. these two drugs were equally effective with p-value 0.454.

Conclusion: From results of our study it is concluded that Lisinopril and Losartan potassium, both are significantly effective in reduction of microalbuminuria and can be advised as first line therapy in diabetes mellitus type II patients.

Key Words: Losartan Potassium, Lisinopril, Diabetes type II, Microalbuminurea

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INTRODUCTION

Diabetes mellitus is a major cause of many diseases such as retinopathy, cardiovascular diseases, diabetic ketoacidosis and nephropathy^{1,2}. If diabetes mellitus is managed earlier, these complications can be prevented or their effects can be reduced. Among early indicators of nephropathy microalbuminurea is a key point to understand the patient's further management³. Untreated microalbuminurea may lead to high rate morbidity and mortality. Prevention of all these complications or morbid diseases could be lifesaving if managed at early stage of disease and with the help of advanced pharmacological management⁴.

Excretion of 30-300 mg of albumin within 24 hours will be labeled as microalbuminurea it can also be defined as 30mg/g ratio of albumin to creatinine ratio in first morning sample⁵.

This gradual increase in microalbuminurea must be treated at earlier stages and class of angiotensin converting enzymes is useful in its early treatment. They reduce the capillary pressure and stop the increase in microalbuminurea⁶. Many studies support the use of Angiotensin II receptors blockers by overruling the microalbuminurea to proteinuria.

Two different studies have been conducted in past on reduction of microalbuminurea. In one study Losartan potassium was used as a treatment drug and microalbuminurea reduction was 87% in this group^{7,8}. On other hand Lisinopril was used as a treatment drug and prevention rate was 41% in this group. In our population 20-25% prevalence was noted with the use of these drugs in type II diabetic patients⁹. In some studies it was reported that in type I diabetes only ACE inhibitors was effective and in type II diabetes both ACE inhibitors and ARBs were effective¹⁰.

In past no study was conducted on head to toe comparison of Losartan potassium (ARB inhibitor) and Lisinopril (ACE) for the prevalence of nephropathy and or for the Reno protection, aim of our study was to compare these two groups thoroughly and our study will be used as a reference study for further trials.

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MATERIALS AND METHODS

This randomized control trial was conducted in the department of medicine, Allied Hospital, Faisalabad from March 2016 to August 2016. After approval from ethical committee of institution and informed consent from patients a total number of 320 (100%) patients was enrolled in the trial, sample size was calculated with the use of following formula $n = (Z_{\alpha/2} + Z_{\beta})^2 * (p_1(1-p_1) + p_2(1-p_2)) / (p_1 - p_2)^2$, taking following values: Confidence interval 95%, power of study 80 %, P1 percentage in group P (losartan potassium) 86.7% and in P2 group L (Lisinopril) 66%(6). A simple lottery method was used to divide the patients into two equal groups (160 patients in each group). Patients who were hypertensive, having connective tissue diseases, chronic heart failure, pregnancy, lactation, and known hypersensitivity to ACE inhibitors or Angiotensin Receptor Blocker were excluded from the study.

All information was collected by researcher himself such age gender, albuminurea before starting drug and after 12 weeks of treatment was noted. 100 mg of Losartan potassium was given for 12 weeks to group P (losartan potassium) and 5 mg of Lisinopril for 12 weeks to group L (Lisinopril). Urine sample was collected in standard container given by the laboratory assistant in early morning for albuminurea before and after 12 weeks. Follow up was done by another physician who was blind to this research process and purpose to reduce bias after 12 weeks by contacting the patients on their telephonic contact numbers. Effectiveness was seen in terms of 25% reduction in albuminurea after 12 weeks medication in both groups. SPSS (v 23) was used to analyze the patients data. Mean and SD were calculated and presented for numerical data and frequency percentages were calculated and presented for qualitative data. Chi square test was applied to see effect modification. P value ≤ 0.05 was considered as significant.

RESULTS

A total number of 100% (n=320) microalbuminurea in Type II DM patients were included in this study, both genders. Gender distribution showed that there were more males than females i.e. 69.1% (n=221) and 30.9% (n=99) respectively. The mean age and BMI of the patients was 50.98 $\pm$ 8.45 years and 26.6 $\pm$ 2.70 BMI respectively.

These 100% (n=320) patients were treated with losartan potassium and Lisinopril and were divided into 2 equal groups, 160 in each. Patients treated with losartan potassium, were included in group (P) and Lisinopril treated patients were included in group (L). The mean age and BMI of the patients in group (P) was 46.81 $\pm$ 5.74 and 24.68 $\pm$ 1.48 respectively, in group (L) 55.13 $\pm$ 8.69 and 28.51 $\pm$ 2.25 respectively (table-1, 2).

The main outcome variables of this study were microalbuminurea. In group (P), 85% (n=272) patients showed reduction in microalbuminurea and in group (L), 81.9% (n=48) patients were observed reduction in microalbuminurea (table-3).

When patients were categorized into different age and BMI categories, it was noted that majority of patients i.e. 77.2% (n=247) were aged from 46 to 65 years and only 22.8% (n=73) were aged from 25 to 45 years. 82.2% (n=263) patients were BMI from 23 to 29 and 17.8% (n=57) patients were BMI from 30 to 33 respectively.

Table No.1: Mean age in both groups

Groups		Mean
Group (P)	Age in years	46.81 $\pm$ 5.74
	BMI	24.68 $\pm$ 1.48
Group (L)	Age in years	55.13 $\pm$ 8.69
	BMI	28.51 $\pm$ 2.25

Table No. 2: Demographic variables

Characteristics	Frequency	%age
Gender		
Male	221	69.1
Female	99	30.9
Total	320	100.0
Stratified Age		
25-45 years	73	22.8
46-65 years	247	77.2
Total	320	100.0
Stratified BMI		
23-29 BMI	263	82.2
30-33 BMI	57	17.8
Total	320	100.0
Descriptive Statistics		
	Mean	S.D
Age in years	50.98	8.45
BMI	26.60	2.70

Table No.3: Frequency of Microalbuminurea in both groups

Microalbuminurea				P Value
Groups		Frequency	Percent	
Group (P)	Yes	24	15	0.452
	No	136	85	
	Total	320	100.0	
Group (L)	Yes	29	18.1	0.452
	No	131	81.9	
	Total	320	100.0	

To compare the efficacy of Losartan Potassium and Lisinopril, independent sample t-test was applied. It was observed that there was no significant difference between the efficacies of Losartan Potassium and Lisinopril, i.e. these two drugs were equally effective with p-value 0.454 (table-3).

When Chi-Square was applied to check the effect modification, it was noted that microalbuminuria was significantly associated with stratified gender, Stratified age and BMI with p-values 0.000, 0.000 and 0.001 respectively. But microalbuminuria was not significantly associated with Groups i.e. group (P) and group (L) (table-4).

Table No. 4: Association of Icroalbuminurea with Effect Modifiers (n = 320)

Effect Modifiers		Microal buminurea		Total	P-value
		Yes	No		
Gender	Male	48	173	221	0.000
	Female	5	94	99	
Total		53	267	320	
Stratified age	25-45 years	24	49	73	0.000
	46-65 years	29	218	247	
	Total	53	267	320	
Stratified BMI	23-29 BMI	52	211	263	0.001
	30-33 BMI	1	56	57	
	Total	53	267	320	

Table No.5: Independent sample t-test

t-test for Equality of Means				
t	d.f	P-value	Mean difference	S.E Difference
-.750	318	.454	-.031	.042
-.750	316.186	.454	-.031	.042

DISCUSSION

Renal failure can be diagnosed with glomerular filtration rate, renoprotection is challenging in these days in patients of diabetes type II and microalbuminurea is a key point of its earlier control^{11,12}. This earlier damage is reversible if glycemic control is good at this stage, addition of ACE inhibitors and ARBs also helpful if given and monitored timely¹³. Many trials have been conducted on this topic that supports in renoprotective strategy. In a recent hoc analysis it is noted that there is a less incidence of nephropathies in subjects who are using ARBs then those patients who were not using ARBs (control group)^{14,15}.

In some trials it is also reported that both ACE inhibitors and ARBs are equally effective in delaying the nephropathy of type II diabetes. Basi Set al (16) conducted a study on losartan potassium (ARB) and Lisinopril (ACE inhibitor) in patients of diabetes type II. Our study is similar to this study; we compare Losartan potassium and Lisinopril head to toe in type II diabetes in terms of reduction in microalbuminurea which is a key point in this aspect. Results of our study shown that, effectiveness of both drugs is different

significantly but when we compare two groups their effectiveness is not significantly different.

In our study in group (P), 85% (n=136) patients were cured and in group (L), 81.9% (n=131) patients were cured. To compare the efficacy of Losartan Potassium and Lisinopril, independent sample t-test was applied. It was observed that there was no significant difference between the efficacies of Losartan Potassium and Lisinopril, i.e. these two drugs were equally effective with p-value 0.454.

A study was conducted by Oguri et al in 2009¹⁷ and reported that there is no difference in effectiveness of both drugs Lisinopril and losartan potassium for the prevention of microalbuminurea for the management of nephropathy in type II diabetic patients. Results of his study were ACR ratio in Lisinopril group was 118.0 ± 78.7 mg/ μ g and in losartan group it was 119.5 ± 84.7 mg/ μ g respectively. Results of our study are comparable with this study as we also concluded no markable difference on both regimens.

Another study was conducted by Mogensen CE et al¹⁸ on similar topic in which Lisinopril and losartan were compared and reported that candesartan is as effective as Lisinopril in reduction of hypertension and microalbuminurea in patients of diabetes type II patients. These results are also in favor of our results and our study authenticated by another previous trial. Most of previous trials were in favor of our trial and a little number was in conflict of our conclusion.

In another study conducted by Naganuma T et al¹⁹ reported that the use ARB in combination with low dose diuretics have good results in reducing microalbuminurea in patients of diabetes type II who were undergone for renal transplant. This decrease in microalbuminurea with ARB agents supports our results as we claimed in our study that ARB and ACE inhibitors both were effective for the management of nephropathy by decreasing the release of microalbuminurea.

In another study Sandhu et al⁶ reported that both ACE inhibitors and ARBs are equally effective in reduction of microalbuminurea when advised in type II diabetic patients for renoprotection and reduce the albumin to creatinine ratio. Findings and conclusion of this study is also comparable with results and conclusion of our study.

CONCLUSION

From results of our study it is concluded that Lisinopril and Losartan potassium, both are significantly effective in reduction of microalbuminurea and can be advised as first line therapy in diabetes mellitus type II patients.

Author's Contribution:

Concept & Design of Study:	Shabnam Seher
Drafting:	Tayyuba Irum
Data Analysis:	Tayyuba Irum

Revisiting Critically: Arooj Iqbal
 Final Approval of version: Shabnam Seher

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

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Frequency of Current Smokers and Ex-Smokers among Patients of Pulmonary Tuberculosis

Noor Akbar¹, Sara Saleem², Nargis Noor³ and Masood Alam³

ABSTRACT

Objective: To document and investigate the frequency of current smokers and ex-smokers among patients of pulmonary tuberculosis.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Department of Pulmonology, Nishtar hospital, Multan from November 2016 to April 2017.

Materials and Methods: A total number of 151 (100%) patients were enrolled in the study. SPSS version 23 was used to analyze patient's data, Mean and standard deviation was calculated for quantitative data and frequency (percentages) was calculated for qualitative data like gender and smoking status. Chi square test was applied to see effect modification, p value ≤ 0.05 was considered as significant.

Results: A total number of 100% (n=151) patients were diagnosed with pulmonary tuberculosis included in this study. The main outcome variable of this study was smoking status (current smoker or ex-smoker). Out of 100% (n=151) patients, in our study, it was observed that 62.9% (n=95) were current smokers and 37.1% (n= 56) were ex-smokers.

Conclusion: Smoking has strong correlation with pulmonary tuberculosis and pretreatment positive smear. Smokers had more than a 5-fold increased risk of a pretreatment positive smear than non-smokers which is significant number, indicating markable effects of smoking on the risk of TB transmission.

Key Words: Pulmonary TB, Current smokers, Ex-smokers, Positive smear

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INTRODUCTION

Pulmonary tuberculosis caused by mycobacterium tuberculosis¹. Round about 1.3 billion people are smoking cigarettes and other tobacco products in present. Among these a big strength about 250 million are women^{2,3}. Many industrialized countries were shifted from developed to developing countries due to use of tobacco and high frequency of pulmonary tuberculosis. This number of TB patients increasing with the passage of time, according to survey mortality rate of pulmonary tuberculosis was 1.7 in 1985 than 3 million in 1990 and it is expected that it may be 8.5 million in 2020⁴. WHO declared tuberculosis as a emergency in third world countries where its ratio increasing more rapidly.

poverty, malnutrition, overcrowding and homelessness⁵. It is a point of concern worldwide that with all hazards smoking accepted as a social trend in

low economic countries main risk factors of TB are community. Both smoking and tuberculosis due to smoking are major hazards to humanities well being and work up for its management is the main health concern worldwide⁶. In our state many government and non government organizations are working for the prevention of smoking and to reduce its contribution in pulmonary TB.

Small number of studies concluded that smoking is a risk factor of tuberculosis and in these studies it is also concluded that association of smoking with TB is dose dependent (number of cigarettes smoked per day)⁷. In a recent study it is reported that TB is mostly diagnosed in male subjects due to high smoking rate because of greater exposure to smoking environment, contact with already smokers and community acquired factors⁸. Pradeepkumar AS et al⁹ conducted a study on Smoking among tuberculosis patients in Kerala, India: proactive cessation efforts are urgently needed. Results of the study were, six months prior to diagnosis, 94.4% of male TB patients were ever smokers and 71.2% were current smokers. Although 87% of patients had quit smoking soon after diagnosis, 36% had relapsed by 6 months post treatment¹⁰.

Aim of our study is to evaluate the association between smokers (ex smokers and current smokers) and tuberculosis, so that magnitude of impact of smoking on tuberculosis can be calculated and study will be helpful reference for further research in south region.

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MATERIALS AND METHODS

This cross sectional study was conducted in the department of pulmonology, Nishtar hospital, Multan from November 2016 to April 2017. After approval from institutional committee of hospital study was started. Informed consent was obtained from the patients. A total number of 151 (100%) patients were enrolled in the study. Sample size was calculated with openepi.com using following values Percentage of previous study (P1)87 %,Confidence interval 95%, and power of test 80%(9). Patients with pulmonary TB as per operational definition, age 25-60 years and both genders were included in the study. Patients with lung diseases other than pulmonary tuberculosis like. COPD, asthma and ILD were excluded from the study. Patient with following clinical signs will be consider for AFB smear, if smear will be positive for AFB patient will be labeled TB positive: history of cough more than three months, fever more than three months, weight loss and shortness of breath. Once registered, these study cases diagnosed to have pulmonary TB(as defined in operational definition) will be asked for their smoking history to diagnose history of before including patient's data in research and they will be ensured about their confidentiality. Smoking status was investigated. After clinical examination Sputum sample sent to laboratory for AFB staining and results will be collected. All the data will be entered on the Performa for each patient. (Performa attached).

Data collected was entered and analyzed using computer software SPSS (v23). Mean and standard deviation was calculated for quantitative data and frequency (percentages) was calculated for qualitative data like gender and smoking status. Chi square test was applied to see effect modification. p value ≤ 0.05 was considered as significant.

RESULTS

A total number of 100% (n=151) patients were included in this study, both genders. Gender distribution showed that there were more males than females i.e. 60.9% (n=92) and 39.1% (n=59) respectively. The mean age and of the patients was 38.56 ± 8.50 years, 23 ± 2.13 BMI, respectively (table-1).

The main outcome variable of this study was smoking status (current smoker or ex-smoker). Out of 100% (n=151) patients, in our study, it was observed that 62.9% (n=95) were current smokers and 37.1% (n= 56) were ex-smokers (table-1).

When patients were grouped into different categories of age and BMI, it was noted that a majority of patients i.e. 62.9% (n=95) were aged from 36 to 60 years and 37.1% (n=56) were aged from 25 to 35 years. 90.1% (n=136) patients were BMI from 21 to 25 and 9.9% (n=15) were BMI from 15-20 (table-2).

When Chi-Square was applied to check the effect modification, it was noted that gender and stratified age were significantly associated with smoking status (current or ex-smoker) with p-values 0.000, 0.000. Stratified BMI was not associated with smoking status (current or ex-smoker) with p-value 0.053 (table-3,4).

Table No.1: Demographic Variables and Smoking Status in pulmonary tuberculosis

Characteristics	Frequency	Percentage (%)
Male	92	60.9
Female	59	39.1
Total	151	100.0
Current Smoker	95	62.9
Ex-Smoker	56	37.1
Total	151	100.0
Variable	Mean	S.D
Age (in years)	38.56	8.50
BMI	23	2.13

Table No.2: Association of Smoking Status (current or ex-smoker) with gender. (n = 151)

Gender	Smoking Status		P-value
	Ex-smoker	Current smoker	
Male	56	36	0.000
Female	0	59	
Total	56	95	151

Table No.3: Association of Smoking Status (current or ex-smoker) with stratified age (n = 151)

Age of Patients	Smoking Status		P-value
	Ex-smoker	Current smoker	
25-35 years	45	11	0.000
36-60 years	11	84	
Total	56	95	151

Table No.4: Association of Smoking Status (current or ex-smoker) with Stratified BMI (n = 151)

Stratified BMI	Smoking Status		P-value
	Ex-smoker	Current smoker	
15-20 BMI	09	06	0.053
21-25 BMI	47	89	
Total	56	95	151

DISCUSSION

Pulmonary tuberculosis caused by From the results of our study it was found that smoking is strongly associated with lung parenchyma diseases, pulmonary TB, cavity lesions and less effectiveness of TB treatment regimens¹¹. Smoking is a strong indicator of positive smears before treatment even in diabetic patients¹². Although results are not consistent but association of smoking with pulmonary tuberculosis was reported in many studies such as in a study conducted by Leung et al it was reported that smokers are more prone to upper

zone involvement of lungs and positive culture of sputum¹³. Results of this study are similar to results of our study and it is an authenticating reference in favor of our conclusion.

A similar study was conducted by Altez Gomez et al¹⁴ on smokers and non-smokers to find out the ratio of pulmonary tuberculosis and reported that among smokers 35.8 % patients have cavity lesions and 66.2% were with positive smear. This rate of positive smear and cavity lesions among smoking patients was significantly higher than non-smokers in diagnosed tuberculosis patients. Wang et al¹⁵ conducted a study on 523 patients and concluded that ever smokers are more prone to have positive smears and cavitation than never smokers. But according to his results pretreatment positive smears were not significantly associated in both groups.

In another study Leung et al¹⁶ reported that in Hong Kong population lung diseases (lung cavity, positive sputum culture) are more likely associated with smokers (39.6% in ex-smokers, 29.2% in non-smokers and 37.7% in smokers). Results of this study again comparable with our study and this study also favors our study.

In 1994 Busking et al¹⁷ conducted a case control study between current, former smokers and non-smokers. He found that current and former smokers have 30-50% more risk of pulmonary tuberculosis than non-smokers. Among these persons who are smoking from last 20 years is 2-3% more risk of having pulmonary tuberculosis. Many studies in past decade were conducted on this topic and almost all claimed that smoking is a provoking cause of pulmonary TB and this ratio is increasing year by year. These findings are comparable with our results.

Findings of our study were also identical to the results of Atlet et al¹⁷ who investigated the correlation of smoking and tuberculosis in 2007. This study was conducted on 13038 and found that severity of disease was five times greater in smoking TB patients than non-smoking patients. Similar results of Rodgman A¹⁸, Murin et al¹⁹ and Mihalton et al²⁰ are also comparable with our results who reported an increase in TB incidence in smokers than non-smokers.

CONCLUSION

Smoking has strong correlation with pulmonary tuberculosis and pretreatment positive smear. Smokers had more than a 5-fold increased risk of a pretreatment positive smear than non-smokers which is significant number, indicating markable effects of smoking on the risk of TB transmission.

Author's Contribution:

Concept & Design of Study: Noor Akbar, Sara Saleem
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Data Analysis: Masood Alam

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

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Association of Vitamin E in Pregnancy Induced Hypertension

Uzma Jamil and Muhammad Kamran Ali

Vitamin E in
Pregnancy
Induced
Hypertension

ABSTRACT

Objective: To observe the association of vitamin E with pregnancy induced hypertension.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Department of Gynaecology, Shalamar Hospital, Lahore from July 2016 to December 2016.

Methodology: Study was started after ethical approval from institution ethical board and completed within duration of July 2016 to December 2016. SPSS version 23 was used to analyze data. After calculations of frequencies for categorical variables like stratified age, BMI and mean for numerical variables like BMI, vitamin E level. Linear regression was applied to see the association between PIH and vitamin E level. P value ≤ 0.05 was considered as significant.

Results: A total number of 100% (n=323) women were included in this study. The mean age, BMI, parity, gravidity and vitamin E level of the women was 28.64 ± 5.67 years, 28.28 ± 2.81 BMI, 3.03 ± 1.21 , 3.71 ± 1.70 and 7.37 ± 2.96 ($\mu\text{g/mL}$) respectively. To check of association of vitamin E level with pregnancy induced hypertension, linear regression was applied and it was observed that BMI and pregnancy with PIH were associated with Vitamin E level with p-values 0.040 and 0.000 respectively.

Conclusion: The observations of our study concluded that vitamin E level has significant association with pregnancy induced hypertension in each trimester of pregnancy.

Key Words: PIH, Vitamin E, Trimester, Blood pressure

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INTRODUCTION

Pregnancy is basically the process of development of an embryo or fetus in the uterus of a woman as a result of fertilization¹. The duration of pregnancy is 40 wks starting from last normal menstrual period (LNMP). Beginning with the ovulation and passing through the processes of fertilization, implantation and embryogenesis, female body undergoes many changes in preparation for conception. Prenatal development of fetus is in three periods of pregnancy which are termed as trimesters, each having duration of three months. First trimester begins from the conception and ends at 12th wk of pregnancy, second trimester is between 13 and 27 wks of pregnancy and third trimester is between 28 and 40 wks of pregnancy³.

In normal pregnancies, there is initial decrease in the blood pressure until 18 to 20 wks of gestation. If there is a high blood pressure either before pregnancy, or during the first trimester of pregnancy, there is increased risk of developing Pregnancy induced hyper-

tension (PIH) or pre-eclampsia^{4,5}. One of the most common disorders of human pregnancy is gestational hypertension. It is defined as having blood pressure higher than 140/90 mmHg measured on two separate occasions, and there should be a gap of more than 6 hrs between two readings, provided there is no Proteinuria, and it is diagnosed after 20 wks of gestation^{6,7}.

Normally a low concentration of oxidative agents is required for body⁸. Very few studies were conducted on association of vitamin E with PIH and few of them failed to prove their correlation. Vitamin E and other oxidative agents play their role in various processes such as normal cellular growth, gene expression, protection against infections and as second messengers in mediating various biochemical processes within the cell⁹. In addition various low molecular weight substances, such as vitamin E have major role in reduction of PIH¹⁰.

Very few studies have been conducted on this topic; we designed this study to observe association of vitamin E in pregnancy induced hypertension. We used large sample size for this study instead of sample size used in previous studies. Our study is a reference for further research work on this topic.

MATERIALS AND METHODS

This cross sectional study was conducted in the department of Gynaecology Shalamar Hospital, Lahore. Study was started after ethical approval from institution

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ethical board and completed within duration of July 2016 to December 2016. After complete briefing about study, informed consent was taken from patients and data of 323 (100%) patients was included in the study. Sample size was calculated from online source openepi.com with following figures: CI 95%, Power of test 80% and percentage of previous study (RR 1.75, 1.11-2.75, $P = 0.02$). Women of already on antihypertensive, proteinuria, having medical disorders like diabetes, hypothyroidism, and already taking vitamin E were excluded from the study.

After patient's selection, patient's vitamin E level was sent to laboratory at 12th week for baseline vitamin E level and at 24th and 36th weeks to observe association of vitamin E in each trimester. Follow ups were conducted after 12 weeks (12, 24 and 36 weeks). On every visit patient's blood pressure was noted and urine for analysis sent to laboratory with all septic measures for proteinuria. At any occurrence of pregnancy induced hypertension patients urine analysis, lipid profile and uric acid was investigated to label the severity of disease. All information was recorded on a predesigned Performa.

Data was entered in a computer software SPSS version 23 and analyzed. Frequency (percentages) were calculated and presented for qualitative variables like stratified age and BMI, similarly mean $\pm$ SD values were calculated for quantitative variables like age, BMI, vitamin E level. Linear regression was applied to see the association between vitamin E level and pregnancy induced hypertension in each trimester. P value of (P)= 0.05 was considered as significant.

RESULTS

A total number of 100% ($n=323$) women were included in this study. The mean age, BMI, parity, gravidity and vitamin E level of the women was 28.64 ± 5.67 years, 28.28 ± 2.81 BMI, 3.03 ± 1.21 , 3.71 ± 1.70 and 7.37 ± 2.96 ($\mu\text{g/mL}$) respectively (table 1).

The main outcome variable of this study was vitamin E level in pregnant women. It was observed that the mean vitamin E level in 1st trimester in normal pregnancy was 9.18 ± 2.86 ($\mu\text{g/mL}$) and pregnancy with PIH was 6.37 ± 2.17 ($\mu\text{g/mL}$). In 2nd trimester it was noted that in normal pregnancy the mean vitamin E level was 9.09 ± 2.76 ($\mu\text{g/mL}$) and in PIH pregnancy was 5.54 ± 1.98 ($\mu\text{g/mL}$). The mean level of vitamin E in 3rd trimester was 8.86 ± 2.68 ($\mu\text{g/mL}$) in normal pregnancy while in PIH pregnancy it was 5.12 ± 1.85 ($\mu\text{g/mL}$) (table 3).

When women were stratified into different age and BMI groups, it was noted that majority of women i.e. 38.7% ($n=125$) were aged from 26 to 32 years while 32.8% ($n=106$) were aged from 17 to 25 years and only 28.5% ($n=92$) were aged from 33-38 years. It was also noted that majority of the women i.e. 68.4% ($n=221$)

were BMI from 23 to 29 and only 31.6% ($n=102$) were BMI from 30 to 38 (Table 1).

To check of association of vitamin E level with pregnancy induced hypertension, linear regression was applied. It was observed that BMI and pregnancy with PIH were associated with Vitamin E level with p -values 0.040 and 0.000 respectively (Table 2).

Table No. 1: Demographic Variables: ($n=323$)

Descriptive Statistics		
	Mean	S.D
Age (years)	28.64	5.67
BMI	28.28	2.81
Parity	3.03	1.21
Gravidity	3.71	1.70
Vitamin E Level	7.37	2.96
Characteristics	Frequency	Percentage (%)
Stratified Age		
17-25 years	106	32.8
26-32 years	125	38.7
33-38 years	92	28.5
Total	323	100.0
Stratified BMI		
23-29 BMI	221	68.4
30-38 BMI	102	31.6
Total	323	100.0

Table No.2: Regression Analysis

Coefficients				
Term	Coef	SE Coef	T-Value	P-Value
Constant	12.93	2.14	6.04	0.000
Age	-0.0026	0.0333	-0.08	0.938
BMI	-0.1511	0.0732	-2.06	0.040
Parity	0.172	0.134	1.29	0.199
Gravidity	0.0169	0.0819	0.21	0.837
Trimesters				
2 nd	-0.401	0.443	-0.91	0.366
Trimesters				
3 rd	-0.152	0.552	-0.27	0.784
Trimesters				
Pregnancy Type				
Pregnancy with PIH	-3.226	0.282	-11.46	0.000

Table No.3: Mean Levels of Vitamin E ($\mu\text{g/mL}$) in Pregnancy Induced Hypertension ($n=323$)

Trimesters	Pregnancy Type	Mean $\pm$ S.D
1 st	Normal Pregnancy	9.18 ± 2.86
	Pregnancy with PIH	6.37 ± 2.17
2 nd	Normal Pregnancy	9.09 ± 2.76
	Pregnancy with PIH	5.54 ± 1.98
3 rd	Normal Pregnancy	8.86 ± 2.68
	Pregnancy with PIH	5.12 ± 1.85

DISCUSSION

Pregnancy induced hypertension is a serious condition during pregnancy if occurs at any stage of pregnancy. Carrying pregnancy with hypertension is a challenge for female specially for primigravida^{11,12}. Among lots of causes deficiency of vitamin E (α -tochoferol) is also cause of pregnancy induced hypertension. Its role in PIH have been described in very few books and investigated by very few persons. In this present study we have seen that vitamin E is strongly associated with PIH.

In a study Sushil K et al¹³ compared normotensive and hypertensive groups by investigating their vitamin E level at the time of delivery and concluded that vitamin E is highly associated with pregnancy induced hypertension. He draw blood sample of patients from both groups and sent to laboratory for vitamin E level and noted that hypertensive group have low vitamin E values than normotensive females (22 ± 1 vs 27 ± 1 nmole/ml, $p < 0.03$).

In 2005 Rumbold AR et al¹⁴ conducted a study on correlation of vitamin C and E with hypertension disorders in pregnancy. In his study he concluded that vitamin E is highly associated with hypertensive problems during pregnancy. This association was significant as ($p = 0.02$). Results of this study were comparable with our results. A limited number of studies available in which association of vitamin E was evaluated otherwise most of studies conducted a combined correlation of vitamin C and E with pregnancy induced hypertension.

At the same time Basaran A et al¹⁵ reported a study that combined use of vitamin C and E increase the risk of pre-eclampsia and pregnancy induced hypertensive issues. In this study vitCE group was compared with placebo group. Hypertensive disorder was found in 9.7% cases in vitCE group and 2.5% in placebo group. Another study conducted by Zuhra et al¹⁶ on effect of palm oil vitamin E on PIH and reported that use of palm oil vitamin E reduce the risk of PIH and preeclampsia in all three trimesters. According to his results in vitamin E group PIH was found in 2.6% patients and in placebo group it was found in 7.4% patients. Similarly in pre-eclampsia patients it was 0.7% and 3.4% in vitamin E and placebo groups respectively.

Sahu S et al¹⁷ conducted a study on effect of peroxidation and vitamin E level in pregnancy induced hypertension and found that there was a markable low level of vitamin E in patients who were not using vitamin E than those were using vitamin E supplement in patients of pregnancy induced hypertension. We can compare our results with our results, conclusion of this study was close enough to our conclusion. All studies given above were in favour of our results except one. In many trials it was reported that there was no benefit of

vitamin C and E use during pregnancy to reduce PIH. Result of his study was RR, 0.94; 95% confidence interval; 0.82-1.07. This study was against our findings^{18,19}.

In another study the role of vitamin C and E was accepted for prevention of PIH and pre-eclampsia. Combination of these two vitamins acts in synergy to prevent PIH by preventing lipid peroxidation. Vitamin E also act as anti inflammatory, this property of α -tochoferol also specified the role this vitamin in activation of NAD(P)H oxidase²⁰.

CONCLUSION

Observation of our study concluded that vitamin E level has significant association with pregnancy induced hypertension in each trimester of pregnancy.

Author's Contribution

Concept & Design of study: Uzma Jamil
 Drafting: Uzma Jamil
 Data Analysis: Uzma Jamil, Muhmmad Kamran Ali
 Revisiting Critically: Muhmmad Kamran Ali
 Final Approval of version: Usma Jamil

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

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Comparison of Efficacy of Risperidone and Placebo in the Patients Suffering from Schizophrenia in Punjab, Pakistan

Efficacy of Risperidone and Placebo in Schizophrenia

Tayyuba Irum, Shabnam Seher and Arooj Iqbal

ABSTRACT

Objective: To examine efficacy of Risperidone for treatment of schizophrenia in comparison with placebo.

Study Design: Randomized clinical study.

Place and Duration of Study: This study was conducted at the Department of Psychiatry, Allied hospital, Faisalabad from May 2016 to May 2017.

Materials and Methods: Approval of the study was taken from Ethical Review Board of the Allied hospital, Faisalabad. Data was collected through universal sampling technique and analyzed by using computer software SPSS version 22, mean and SD was calculated for quantitative variables like age and frequency (percentages) were calculated for qualitative variables like gender, education status and symptoms of disease. Chi square test was applied to see effect modification; p value ≤ 0.05 was taken as significant.

Results: Total 80 respondents were included in this study, 24 (30%) were female and 56 (70%) were males and Placebo and Risperidone groups were equally distributed. Outcome of our study was improvement in symptoms of disease after drug use. From placebo group, almost all study participants were in condition not improved group (97.5%) and in Risperidone group more half (80%) study participants fall in condition improved group. Value of Chi square (49.6) at 1 degree of freedom was found statistically significant (0.000) indicating significant relationship of disease status and treatment group.

Conclusion: Significantly greater improvements in relieving the symptoms and improving the quality of life and overall well-being were demonstrated in patients randomized to risperidone compared to placebo.

Key Words: Risperidone, Schizophrenia, Atypical, Antipsychotics

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INTRODUCTION

Every year about 1% of people of total population suffer from schizophrenia worldwide¹. Generally symptoms of schizophrenia appear in early age and become worse throughout life. It is not a curable disease yet². In 1950s, chlorpromazine has been introduced chemist's start working on treatment of schizophrenia more aggressively and many drugs discovered³. After all these efforts and drug invention Schizophrenia still a degenerative disorder and its pathophysiology and causes are unknown⁴.

Usually schizophrenia labeled as single disease but it is group of symptoms or set of disorders due to changes in brain neurochemicals⁵. Every group of symptoms demand a different treatment plan consisted of single drug or combination of drugs. After the use of antipsychotic drugs as symptoms improves same time their side effects reduce the quality of life and

neurological disorder also becomes poor even permanent functional disorder. Some more side effects include metabolic disorder, weight gain and weak motor response⁶.

An antipsychotic drug clozapine was introduced in 1971 and considered a drug of choice in among antipsychotic drugs medicines⁷. Clinical results and pharmacology of clozapine is too much different from 1st generation (haloperidol, chlorpromazine). Clozapine called as atypical antipsychotic because it does not causes extra pyramidal adverse effects⁸. Now in these days a wide range of drugs distribution have been described between 1st and 2nd generation antipsychotics. Drugs in both generations have different mechanism of action and agonist and antagonist properties⁹.

Advantages of risperidone over other antipsychotics (haloperidol) are rapid onset of action, less extrapyramidal adverse effects and excellent effectiveness over negative symptoms of schizophrenia. In some reports it was described that risperidone also have short hospital stay in old schizophrenic patients^{8,10,11}.

This review focuses on the pharmacology and clinical data of risperidone, a novel compound that is currently in Phase III development for the treatment of schizophrenia and other neuropsychiatric and neurodegenerative disorders.

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MATERIALS AND METHODS

It was a randomized clinical trial conducted in the department of Psychiatry, Allied hospital, Faisalabad, from May 2016 to May 2017. Approval of the study was taken from Ethical Review Board of the Allied hospital, Faisalabad. Eighty patients (80) were selected through universal sampling. Patients of Schizophrenia were randomly divided into two equal groups into Risperidone group and Placebo group. Informed consent was taken from the patients after briefing about the study purpose. It was a double blind study so patients and doctors both do not have idea about Risperidone group and Placebo group. Pregnant and lactating women, patients already on neuroleptic disease, drug abusers and who were refused to participate in study were excluded.

In Risperidone group patients were given Risperidone 1mg BD on first day, 2 mg twice on 2nd day, 3 mg twice a day on day three and 3 mg twice was remained continue for seven days. Positive and Negative Syndrome Scale (PANSS) was used to check the symptoms severity of Schizophrenia patients.

Data was collected through questionnaire and entered into SPSS version 23. Analysis was divided in two main parts. First one was descriptive and the second was inferential statistics. Descriptive statistics (percentages and frequency tables) were generated and reported for socio demographic variables and groups. Relationship and efficacy of both groups was also checked. P value ≤ 0.05 was considered as significant.

RESULTS

Total 80 respondents were included in the study and their age distribution was as 24 respondents (30%) were in age category ranging from 19-29 years, 44 (55%) were in range of 30-39 years and 12 (15%) respondents were having 40 years and above age group. Out of total 80 respondents, 24 (30%) were females and 56 (70%) were males. In Placebo and Risperidone groups were equally distributed.

Their education status revealed that of the total 80 respondents, 25 (31.2%) were illiterate, 37 (46.3%) were primary, 14 (17.5%) were metric, and 4 (5%) of them were having intermediate and above table-1. Frequency of signs and symptoms of schizophrenia were being checked and frequencies are being given in table-2.

Disease status and treatment group were cross tabulated and their findings were statistically significant. From placebo group, almost all study participants were fall in condition not improved group (97.5%) and in Risperidone group more half (80%) study participants fall in condition improved group. Value of Chi square (49.6) at 1 degree of freedom was found statistically significant (0.000) indicating significant relationship of disease status and treatment group given in table-3.

Disease status and age were cross tabulated and their findings were statistically in significant. The highest group among condition improved (40.9%) was from age category 30-39 and condition not improved were from 40 and above age group. Value of Chi square (2.06) at 2 degree of freedom was found statistically in significant (0.356) indicating in significant relationship of disease status and treatment group given in table-4.

Disease status was as our outcome variable and was cross tabulated with gender and findings were statistically significant. From female group majority of participants (70.8%) fell in condition improved and from male group majority of participants fell in condition not improved category. Value of Chi square (12.4) at 1 degree of freedom was found statistically significant (0.000) indicating significant relationship of disease status and gender given in table-5.

Disease status was also cross tabulated with educational status of the participants and findings were statistically significant. There were surprised findings regarding educational status and disease condition. From the primary educational status, more than half (59.5%) of the participants were in condition improved category and all of the participants who from intermediate and above educational category were from condition not improved category. Value of Chi square (14.6) at 3 degree of freedom was found statistically significant (0.000) indicating significant relationship of disease status and education given in table-6.

Table No.1: Demographics

Age Category	Frequency (%)
19-29 Years	24 (30%)
30-39 Years	44 (55%)
40 and above	12 (15%)
Gender	
Female	24 (30%)
Male	56 (70%)
Education Categories	
Illiterate	25 (31.2%)
Primary	37 (46.3%)
Metric	14 (17.5%)
Intermediate and above	4 (5.0%)

Table No.2: Schizophrenia Signs and symptoms in Study Participants

Sr. #	Sign	Positive in Participants
		Yes (%)
1	Hallucination	21 (26.3%)
2	Delusions	35 (43.8%)
3	Disordered Thinking	38 (47.5%)
4	Word Salad	57 (71.3%)
5	Social Withdrawal	62 (76.3%)
6	Loss of Motivation	42 (52.5%)
7	Loss of Judgment	20 (25.0%)
8	Less Response	45 (56.3%)

Table No.3: Cross Tabulation of Disease Status and Treatment Groups

Group	Disease Status		X ² Results
	Condition Improved (Less than median)	Condition Not Improved (Equal to or above median)	
Placebo	1 (2.5%)	39 (97.5%)	X ² = 49.6, df=1, P= 0.000
Risperidone	32 (80.0%)	8 (20%)	

Table No.4: Inferential results of Disease Status and Age Groups

Age Group	Disease Status		X ² Results
	Condition Improved (Less than median)	Condition Not Improved (Equal to or above median)	
19-29 Years	12 (50%)	12 (50%)	X ² = 2.06, df=2, P= 0.356
30-39 Years	18 (40.9%)	26 (59.1%)	
40 and above	3 (25%)	9 (75%)	

Table No.5: Inferential results of Disease Status and Gender

Gender	Disease Status		X ² Results
	Condition Improved (Less than median)	Condition Not Improved (Equal to or above median)	
Female	17 (70.8%)	7 (29.2%)	X ² = 12.4, df=1, P= 0.000
Male	16 (28.6%)	40 (71.4%)	

Table No.6: Inferential results of Disease Status and Educational Status

Education	Disease Status		X ² Results
	Condition Improved (Less than median)	Condition Not Improved (Equal to or above median)	
Illiterate	10 (40%)	15 (60%)	X ² =14.6, df=3, P= 0.002
Primary	22 (59.5%)	15 (40.5%)	
Metric	1 (7.1%)	13 (92.9%)	
Intermediate and above	0 (0.0%)	4 (100%)	

DISCUSSION

Risperidone become a new competitor in treatment of schizophrenia, and its efficacy confirmed by many comparative studies with haloperidol and antipsychotic drugs. In a study Guy et al¹² concluded that risperidone is more efficient and shows a markable improvement when compared with other drugs global impressions scale. In another study conducted by Kay et al¹³ in 1968 reported that risperidone gain a greater decrease in schizophrenia symptoms and clinical outcomes when compared on brief psychiatric scale and positive, negative scale.

A total number of 80 (100%) respondents were included in this study, 24 (30%) were females and 56 (70%) were males. Results of our study shown that, percentage of symptoms improvement with use of placebo was lower as compared risperidone group. In a study Tamara Melink et al¹⁴ compared atypical and typical antipsychotics with placebo and reported that, atypical antipsychotics have better outcomes and more advantages over typical drugs in treatment of reflective schizophrenia. Findings of our study are also comparable with our findings.

Marder et al¹⁵ conducted a study 1994 on risperidone in the treatment of schizophrenia and concluded that risperidone is a effective and safe antipsychotic against schizophrenia (both in positive and negative). In the treatment of schizophrenia role of atypical antipsychotic medicines is well defined and their role in maintenance of schizophrenia is also known, but very few studies available about its role in acute schizophrenia treatment. Here is a study conducted by Raedler TJ et al¹⁶ in 2004 to investigate the role of risperidone in management of acute schizophrenia. In his study he concluded that it is a well tolerated medicine in patients of acute schizophrenia.

Few studies have been conducted in era of 1970s and 1980s for prevention of schizophrenia with long term use of antipsychotics in comparison with placebo¹⁷. In view of these trials it was reported that continuous use of antipsychotic drugs reduces the chance of hospitalization. In 2012 Lancet¹⁸ conducted a study on relapse prevention of schizophrenia with antipsychotics and concluded that antipsychotic use for long term maintenance of schizophrenia is beneficial for patients. Rattehalli RD et al¹⁹ conducted a review on role of risperidone as compared to placebo and concluded that risperidone is more effective drug for treatment of schizophrenia when compared with placebo, another advantages of risperidone is that patient compliance is also good and patients level of comfort is also high. Some adverse effects of these drugs limit the use of risperidone. Results of our study are comparable with this review conclusion.

Pajonk FG et al²⁰ conducted a study on Risperidone: an open-label, observational study of the efficacy,

tolerability, and prescribing behavior in acutely exacerbated patients with schizophrenia and concluded that in treatment of exacerbated schizophrenia risperidone is very effective and well tolerated. These results are also identical to our results.

CONCLUSION

Significantly greater improvements in relieving the symptoms and improving the quality of life and overall well-being were demonstrated in patients randomized to risperidone compared to placebo. The effect was more pronounced in the risperidone group. Patient satisfaction improved significantly and patient preference for their medicine favored risperidone 120 mg versus placebo.

Author's Contribution:

Concept & Design of Study: Tayyuba Irum
Drafting: Tayyuba Irum
Data Analysis: Shabnum Seher
Revisiting Critically: Arooj Iqbal
Final Approval of version: Tayyuba Irum

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

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Reducing Operative Time in Scaphoid Fractures Reduction

Mirza Shehab Afzal Beg¹, Syed Sheeraz ur Rahman², Fahad Hanif Khan¹ and Obaid-ur-Rehman¹

ABSTRACT

Objective: We aim to share our experience of scaphoid fractures repair with screw and its impact on the outcome.

Study Design: Retrospective case control study

Place and Duration of Study: This study was conducted at the Plastic Surgery Department, Liaquat National Hospital, Karachi from January, 2011 to December, 2015

Materials and Methods: We retrieved and compared all patients meeting our inclusion criteria, who had undergone scaphoid fracture fixation with either lag screw or compression screw, and sorted them into two groups respectively. Post-operative time was noted and patient rated wrist evaluation (PRWE) was used to objectify pain and function.

Results: Most of our patients were males 91.3% (21) with mean age of 26.4 ± 5.2 years. 69.5% (16) of the patients were right hand dominant. Out of 23 fractures we managed 65.2% (15) with AO lag screws and 34.7% (8) with cannulated compression screws. The mean total PRWE score was 37.6. Eighty seven percent (20) of the patients showed improvement after intervention for scaphoid fractures, with PRWE mean pain score of 8.9.

Conclusion: Early scaphoid fractures fixation using compression screws reduce operative time, pain and helps a young man to resume the earning in his productive years of life.

Key Words: Scaphoid fractures, Hand injury, Patient rated wrist evaluation, Conservative management, Screw fixation.

Citation of articles: Beg MSA, Rahman SS, Khan FH, Rehman O. Reducing Operative time in Scaphoid Fractures Reduction. Med Forum 2017;28(8):79-82.

INTRODUCTION

Among hand injuries, carpal bones fractures are a challenge to diagnose and manage. Each bone demands a special treatment¹. Fractures of scaphoid account for most of the fractures among carpal bones². There are a number of studies providing algorithm for its management³⁻⁷, however most have emphasized on the radiological modalities and findings of scaphoid fractures⁸⁻¹⁰.

About 88-90% of scaphoid fractures can be dealt with cast immobilization of the wrist in neutral position¹¹, but there has been a recent inclination to address scaphoid fractures fixation with screws, especially after failed union in conservative management after 6 weeks¹². Literature is available highlighting use of different type of screws, its position at the fracture site¹³ and the pros and cons of its uses. In a study by Verga P and et al, who looked into the use of compression screws for scaphoid fixation and its effects on functional return of

hand² they concluded that by reducing the interfragmentary shearing forces, compression screws results in better union and early return of hand activity.

We would like to share our experience with two types of screw fixation, lag screw versus compression screws, in scaphoid fractures management.

MATERIALS AND METHODS

The study was conducted over a period of 5 years, from January, 2011 to December, 2015, at Plastic Surgery department of a tertiary care, private sector teaching hospital in Karachi, Pakistan, equipped with multidisciplinary teams and advanced treatment modalities. Serving the region for over 50 years with key role in the last 1 decade, during and after the war in Afghanistan, providing its services with specialized trauma team and hand surgeons is exceptional. Being a teaching unit it is the departmental policy to inform and gain consent from the patients about possible use of medical data for research purposes, after ensuring their hidden identity. Institutional ethical review board has approved the study.

We retrieved data for all the scaphoid fractures which were managed by screw fixation and reviewed it for age of injury, gender, hand dominance, type of screw used, outcomes and complications. Following was the inclusion criteria:

- Unstable scaphoid fracture (defined by any 1 of these)

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- greater than 1 mm of displacement
- lateral intra-scapoid angle greater than 35 degrees
- bone loss or comminuted fracture
- peri-lunate fracture-dislocation
- dorsal intercalated segment instability
- proximal pole fractures
- Patients with American Society of Anesthesiology (ASA) score of 2 or less
- Nonunion or mal-union after conservative approach

Outcomes were assessed in terms of operative time, post-operative pain and range of motion. We used patient rated wrist evaluation (PRWE) scoring for objective measurement of pain and function. We labelled the score as follows:

- Pain:
 - 0: No pain
 - 1-10: Mild pain
 - 11-20: Moderate pain
 - 21-35: Severe
 - 36-50: Unbearable
- Function:
 - 0-25: Excellent
 - 26-50: Good
 - 51-75: Satisfactory
 - 76-100: Poor

Statistical Package for Social Studies (SPSS) version 19.0 was used to analyze the data for frequencies and co-relations. Chi-square test was used to test significance with 95% confidence interval.

RESULTS

23 patients met our inclusion criteria. Male (21) to female (2) ratio was 10.5:1 and mean age of presentation was 26.4 ± 5.2 years. Most were right hand dominant, 69.5% (16) as compared to left 30.4% (7). Figure 1 shows demographic distribution in both the groups.

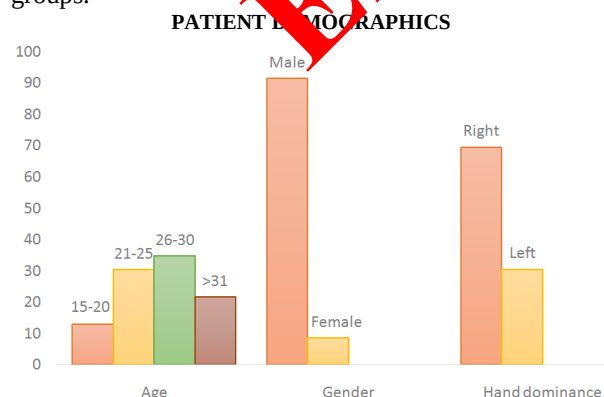


Figure No.1: Patient demographics in the 2 sub-groups

Out of 23 patients, 65.2% (15) had AO screw fixation (mini fragment 2mm lag screw) and 34.7% (8) had cannulated screws (2.4mm compression screws). We

had shifted our approach from 2014 onward, with 65.2% (15) patients were before 2014 and 34.7% (8) afterwards.

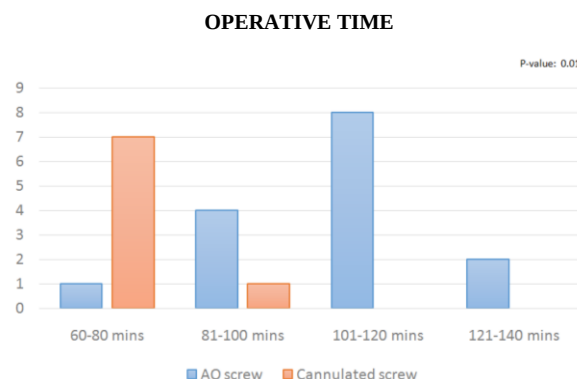


Figure No.2: Correlation between screw type and operative time (n=23)

Outcomes: All patients were followed up for minimum of 6 months. The mean total PRWE score was 37.6. There was improvement in pain in 86.9% (20) of the patients after intervention for scaphoid fractures, with PRWE mean pain score of 8.9. In AO screw group most patients had mean post-operative score of 1.2 as compared to 2.6 in cannulated screw (p-value: 0.84). One of our patient, with AO screw, had pain score of 45 and so the screw was removed after 6 weeks to relieve the symptom. There was a significant reduction in operative time, with majority in AO screws group had fixation in 101-120 minutes, as compared to cannulated screws group, who had fixation within 60-80 minutes (p-value: 0.01) (Figure 2). Comparing range of motion after scaphoid repair within the two modalities, there was (PRWE mean function score: 28) improvement in this aspect among 80% (12) patients in AO screw group as compared to 87.5% (7) in cannulated screws group (p-value: 0.18). We could not find statistically significant co-relation of age with type of screw and range of motion (p-value: 0.79 and 0.20 respectively). One patient in each group had mild surgical site infection which was managed with antibiotics according to local policy and no additional surgical intervention was required.

DISCUSSION

Scaphoid enjoys the importance in having tenuous blood supply, acutely missed diagnosis results in early non-union, arthritis or arthrosis of the bone^{4, 14}. These injuries are easily missed at acute presentation but the specific presentation of fall on extended hand with tenderness and swelling in anatomical snuff box makes space for suspecting underlying scaphoid injury^{15, 16}. Looking at the epidemiology of the disease, which is in line with our observations too, the incidence is more common in young active men with majority presenting

in their 3rd decade¹⁷, affecting their productive years of life.

Plain radiograph is 59–70% sensitive in picking scaphoid fractures¹⁸, though it does not accurately evaluate injury at 6 weeks of follow up, which is usually required after conservative treatment¹². Bone scan has sensitivity of 99% for detecting occult scaphoid fractures but after 3 days of injury and it does not help in reducing cast immobilization in radiographic absent disease¹⁹. On the other hand computed tomography (CT) and magnetic resonance imaging (MRI), in addition to being non-invasive, have 72% and 80% sensitivities with 99% and 100% specificities, respectively²⁰.

A meta-analysis has shown that 34% of conservatively managed proximal pole fractures of scaphoid end up in non-union¹⁴. Another meta-analysis of 340 scaphoid fractures compared non-operative and operative management. It highlighted that early intervention even in acute un-displaced or minimally displaced fractures, resulted in preventing delayed non-union, better functional outcome and early return of activity²¹.

Surgical management ranges from percutaneous fixation to arthroscopic or open screw placement^{4, 22, 23}. There had been researches on which screw is better in early return to work and post-operative pain^{2, 24, 25}. In our study we observed a significant reduction in operative time with cannulated compression screws. As concluded by other studies the compression screws restrict inter-fragmentary forces and helps to stabilize the fracture site more appropriately^{2, 24}. In our study we observed an improvement in range of wrist motion too but this was statistically non-significant, however the study by Gehrman S.V. and et al showed significant improvement in wrist function after fixing with these screws²⁴. We could not find statistical correlation between age group and wrist function neither could we use age to determine which screw type was appropriate for the groups.

CONCLUSION

Early intervention for scaphoid fixation with compression screw reduces operative time and post-operative screw site pain.

Author's Contribution:

Concept & Design of Study: Mirza Shehab Afzal Beg
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Pattern of Hand Injuries in Accidents and Emergency Department of a Tertiary Care Hospital in Karachi

Mehtab Ahmed¹, Mirza Shehab Afzal Beg¹, Syed Sheeraz ur Rahman² and Urooj Zafar³

ABSTRACT

Objective: To analyze the pattern of hand injuries in terms of age, occupation, mechanism, type of injury and structures involved in patients with hand injuries visiting Liaquat National Hospital, Karachi.

Study Design: Descriptive case series.

Place and Duration of Study: This study was conducted at the Accidents and Emergency Department, Liaquat National Hospital, Karachi from Jan 2015 to June 2015.

Materials and Methods: The records of 2367 patients reported for hand injuries were analyzed. Collected data were categorized on the basis of normal handedness, Gender, age, place of injury, mechanism of trauma, types of injuries and its association with different mechanisms. The results were statistically analyzed using mean, frequency and ranges.

Results: Hand injuries constitute total 6% of hospital emergency visits with 75% (n=1775) male patients. Right hand dominance (91%) was seen but there was no significant difference in the involvement of right and left hand in injury. Young population (Age 16-35) was found most frequently suffered from hand trauma. Laborer and mechanical workers are the most affected personnel (30.7%) followed by office workers and students 27.3% and 23.9%, respectively. RTA and home were among the most common places of injury. Sharp cut and RTA were the main mechanisms of injury followed by machine/ crush injuries with fracture as the most common type of injury.

Conclusion: Young male population is at significant risk of hand trauma. Road traffic accident, industry and home are most common places. Proper understanding of mechanism of injuries and timely referral to hand specialist are key steps in appropriate management.

Key Words: Hand injuries, pattern, incidence, mechanism

Citation of articles: Ahmed M, Beg MSA, Rahman SS, Zafar U. Pattern of Hand Injuries in Accidents and Emergency Department of a Tertiary Care Hospital in Karachi. Med Forum 2017;28(8):83-86.

INTRODUCTION

Hands and digits of human beings have a major role in all aspects of daily life. Hand with its 27 muscles and 27 bones is a strong flexible structure. It is able to perform many fine movements. Accidental hand injuries are unfortunately common. Hand injury is more complex because of intricate hand design and if proper care is not given will result in devastating consequences. Injury to the hand leads to loss of function as well as deformity of body image.

It has psychological and financial impacts due to time away from work and medical expenses. Total costs of these injuries in one study were US \$410 million per year². According to one more study average cost per injury was found to be 474.82 IR pounds and 83% of

days lost from work³. Opsteegh et al⁴ has described Pain, accident location, job independence and symptoms of post-traumatic stress disorder as major factors associated with time away from work. Hand injuries are common accounting for nearly 15% of hospital emergency visits^{5,6}. Mismanagement of hand injuries is a frequent problem due to handling by non-hand specialists in emergencies and paucity of literature on pattern of hand injuries⁷.

Epidemiology of hand injuries varies between communities depending on occupation and industrial activities. A thorough Knowledge of biologic, socioeconomic and behavioral factors in hand injuries serve as essential step in identifying the population at risk. Identified risk factors were using malfunctioning equipment/materials, using a different work method, performing an unusual work task, working overtime, feeling ill, being distracted and rushing⁸. Graded exposure to workplace help in treating psychological symptoms like post traumatic stress disorder associated with workplace injury⁹.

The following retrospective study is designed to assess the pattern of hand injuries brought to accidents and emergency department of a tertiary care hospital. This demographic study will help in identifying the location and pattern of the injury and will help in designing a

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comprehensive treatment plan. It will also help to plan a community education program for prevention and appropriate referral of these injuries. Severe hand injuries should be treated in the specialist hand surgery centers. Such proceedings allow to minimize the extent of permanent post-injury disability and decrease total costs of treatment^{5,10}.

MATERIALS AND METHODS

A descriptive case series was designed to evaluate the demographics of hand injury. It was conducted at Accidents and emergency department of Liaquat National Hospital, Karachi for 6 months (January 2015 to June 2015)

Inclusion Criteria:

1. Isolated hand injuries
2. Patients of all age groups
3. Patients of either gender

Exclusion Criteria:

1. Patients with polytrauma.
 2. Patients with already repaired hand injuries in some other hospital.
 3. Delayed cases presenting after 72 hours of injury.
- The hospital records including emergency files and operation theatre notes of 2367 patients reported for hand injuries were analyzed. Collected data were categorized on the basis of normal handedness, involved hand in trauma, Gender and age. Data were also analyzed for the place of injury, mechanism of

trauma; types of injuries and its association with different mechanisms. Variables will be analyzed using descriptive statistics. Descriptive statistics include mean, frequencies and minimum to maximum range where applicable.

RESULTS

A retrospective study was conducted to analyze the pattern of hand injuries presented to Emergency Department of Liaquat National Hospital, Karachi. Out of total emergency visits (39,462), 6% presented with hand injuries (2367) in six months period (1st Jan.-30th June 2015). The records of these 2367 patients were analyzed to see the pattern of hand injuries.

Data suggests that significant number 75% (n=1775) of the patients were male and 25% (n=592) were females (data not shown in figures). With respect to dominance, 91% were right hand dominant and remaining 9% were left hand dominant. While, no significant difference in the involvement of right and left hand was found in this study in contrast to Gupta et al⁷. Young population (Age 16-35) was found most frequently suffered from hand trauma (Figure 1). Laborer and mechanical workers are the most affected personnel (30.7%) followed by office workers and students (27.3% and 23.9%, respectively, (Figure 2). Study reports that RTA and home were among the most common places of injury.

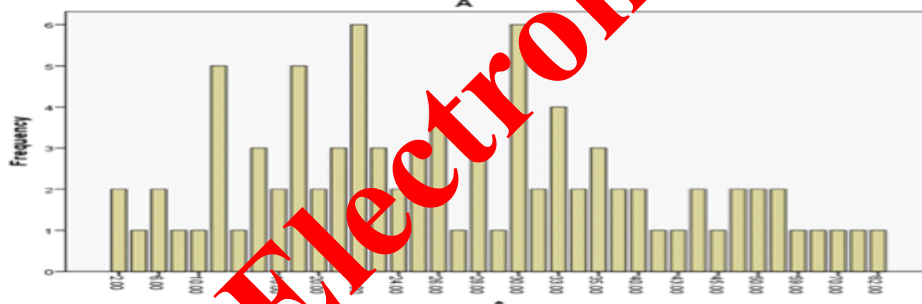


Figure No.1: Data distribution according to age

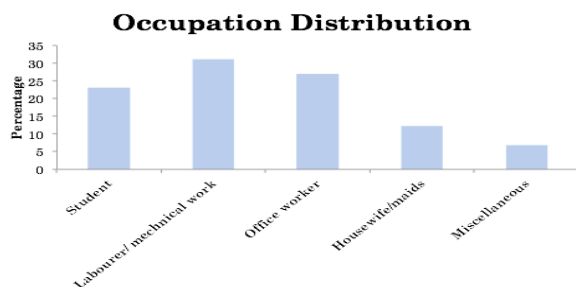


Figure No.2: Data distribution on the basis of occupation

Sharp cut and RTA were the main mechanisms of injury followed by machine/ crush injuries (Figure 3) with fracture as the most common type of injury (Figure 4).

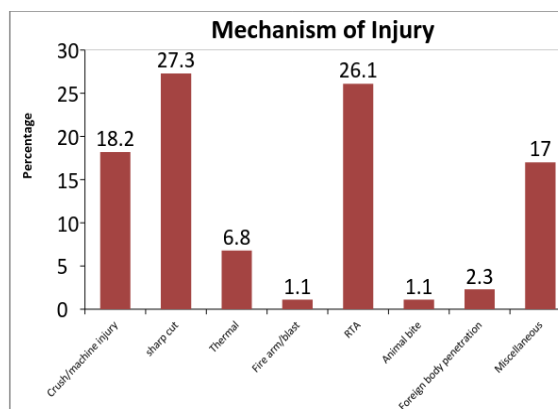


Figure No.3: Data distribution on the basis of mechanism of injury

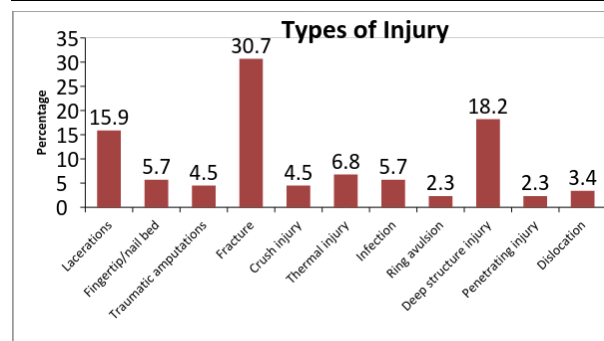


Figure No. 4: Data distribution on the basis of type of injury

The data revealed that thumb and index finger was the most frequently involved structures (Figure 5). Significantly highest frequency was observed in soft tissue trauma with the combination of tendon, artery and nerve injury. (Figure 6).

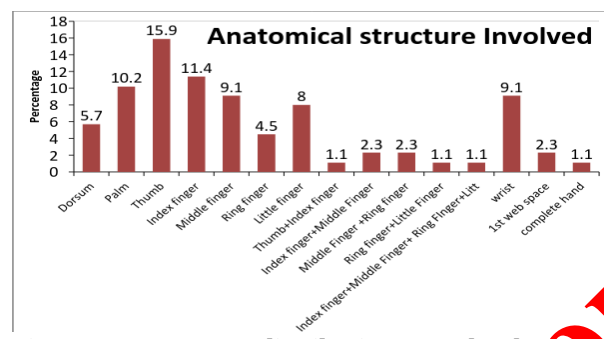


Figure No.5: Data distribution on the basis of anatomical structure involved

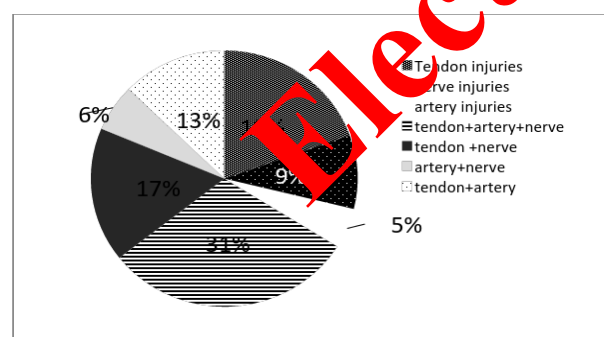


Figure No.6: Data distribution on the basis of pattern of soft tissues involvement in hand trauma

DISCUSSION

Hand injuries are common posing a significant burden on the Emergency Department of hospitals. They are the cause of serious financial and economical losses not only to individual but the whole society due to time away from work and medical expenses⁷.

A retrospective descriptive case series study was conducted to analyze the demographic and pattern of

hand injuries presenting to ER of a tertiary care hospital.

Data suggest that young (16-35) male were the most effected population as previously been reported by other studies as well^{11,15}. With respect to involvement of hand, our data is in accordance to previously published reports suggesting no significant difference between right and left hand^{16,17} with right handed as the most affected. Understanding the environmental etiology is the first step for formulating preventive measures. Since Karachi is an industrial city, laborers and mechanical workers are the most common victims of hand injuries. This pattern is similar to the findings of Gupta et al⁷ and Ahmed & Chaka¹⁸ where they reported that laborers are the major chunks of trauma. The findings suggest an urge for designing safe and work friendly machines. This finding is in agreement with the next parameter where industry is the most reported site of accident with the frequency of 22%. In our study, home is the second most common site of accident whereas, a few other studies have specified home as the most common place of injury^{5,15,19}.

Top on the list of place and mechanism of injury is RTA with 35%, suggesting the reckless and law-abiding driving in the community. The second most mechanism of injury is deep lacerations. Combination of tendon, artery and nerve is the most common set of structures involved in deep lacerations, followed by isolated tendon injuries. This type of pattern is also previously studied by Tuncali et al²⁰. Our results suggest that fracture is the most common type of injury which is in agreement with Angermann & Lohmann¹⁹ and very close to the observations of Nieminen & Nurmi¹⁵.

CONCLUSION

Young male population is at significant risk of hand trauma. Road traffic accidents, home and industries are main sites of hand injuries. Skeletal framework of hand is most commonly damaged during trauma with fractures being the most common. This study has helped in understanding the mechanism and pattern of hand injuries that is important to anticipate damage and guides in making diagnosis and planning treatment.

Recommendation:

- Following traffic rules can significantly reduce the burden of hand injuries.
- Proper safety measures and careful use of machines should be emphasized to prevent injuries at work.
- Designing safe and work friendly machines.
- Sharp object should be handled with extreme care.
- Creating safe home environment is essential for preventing injuries especially in children.

Author's Contribution:

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Comparison of Effects of 10% Zinger, 10% Fenugreek and 10% Garlic with Atorvastatin in Hypercholesterolemia Induced Rats

Jawed Iqbal¹, Farheen Hameed², Asad Jiskani³ and Mazhar ul Haque⁴

ABSTRACT

Objective: Comparison of effects on lipid profile and hepatic enzymes by using 10% ginger, 10% fenugreek and 10% garlic against atorvastatin treated animals in hypercholesterolemia induced albino rats.

Study Design: Descriptive comparative experimental study.

Pace and Duration of study: This study was conducted at the Department of Biochemistry, Al-Tibri Medical College, Karachi from January 2016 to December 2016.

Materials and Methods: In the present study thirty six rats having weight of about 150-200 grams were included. The rats were further grouped into six A, B, C, D, E and F with six rats in each group. Group A (control) rats were kept on normal rat diet. Group B rats were kept on hypercholesterolemic diet containing 20% fat and 1% cholesterol. Group C rats were kept on supplemented diet having 10% ginger powder with hypercholesterolemic diet. Group D rats were kept on supplemented diet having 10% Fenugreek seed powder with hypercholesterolemic diet. Group E rats were kept on supplemented diet having 10% garlic with hypercholesterolemic diet. Group F rats were kept on 10mg/kg of atorvastatin in hypercholesterolemic diet.

Results: Significant decrease in triacylglycerol in group C (10% ginger) was noted as compared to group E (10% garlic) and F (Atorvastatin 10mg/kg of diet). Also the values of HDL were significantly higher in group C in comparison to the group D, E and F. However significant decrease in the level of total cholesterol is found in F (Atorvastatin) group as compared to C and D group. Also the values of LDL were significantly lowered in group F in comparison to the group C, D and E. Alanine aminotransferase and Aspartate aminotransferase lowered significantly in group C in comparison to the group E. Alkaline phosphatase was also significantly lowered in group C in comparison to D and E group but had shown no significant difference as compared to group F.

Conclusion: Zinger 10% supplementation improved the HDL and triacylglycerol levels as compared to other herbs and atorvastatin treated group. However atorvastatin treated group showed more decreased LDL levels. No significant difference was found in hepatic protection when ginger and others were compared to atorvastatin group.

Key Words: Hepatoprotective, Garlic, Fenugreek, Zinger.

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INTRODUCTION

American Heart Association defines hyperlipidemia as high levels of fat in blood which include cholesterol and triacylglycerols¹. Hypercholesterolemia is considered as disorder of metabolism that can result in many diseases such as diseases of heart and blood vessels. Long standing elevated hypercholesterolemia leads to accelerated atherosclerosis expressing itself as cardiovascular disease (CVD), Angina pectoris, heart attack and peripheral vascular disease².

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Statins are synthetic drugs which functions to decrease the serum cholesterol by inhibition of HMG CoA reductase enzyme, which is involved in the regulation of cholesterol synthesis in the liver³. Side effects of statins include damage to muscle tissue causing body aches, deranged LFTs and elevated blood sugar⁴. Harmful effects of synthetic drugs eg; statins have been documented⁵. The medicinal plants and natural drugs are more effective and less toxic substances being focused now a days^{6,7}. Different countries use medicinal plants as a source of many potent and powerful drugs⁸.

Ginger (*Zingiber officinale*) is member of the family of plants having cardamom and turmeric as other members. Ginger is grown mostly in Asia and tropical countries. It is used for remedy of multiple conditions including colds, fever and indigestion⁹. Ginger shows remarkable effect of lowering blood lipid in patients with hyperlipidemia¹⁰. In a study it was shown that Ginger caused hypoglycemic and hypolipidemic effects in streptozotocine induced diabetic rats¹¹.

Fenugreek is leguminous bean plant, its Latin name is *Trigonella fenum graecum*¹². Fenugreek seed and its green leaves are used as food. Beside they have medicinal application. Fenugreek seeds provide natural food fibre and other nutrients required in human body¹³. Fenugreek is among the oldest medicinal plants. Its use has been mentioned in the Hippocrates and ancient Egypt times¹⁴. Fenugreek has hypocholesterolemic, hypolipidemic (TAG lowering effect) and LDL lowering effect in hypercholesterolemic patients¹⁵. The hypolipidemic effects of Fenugreek seeds have been ascribed to the presence of saponins and sapogenins¹⁶. Extract of Garlic (*Allium sativum*) is another herbal medicine that decreases serum cholesterol levels in humans, inhibits synthesis of cholesterol in the body, suppress oxidation of low density lipoproteins, lowers plasma fibrinogen and increases fibrinolytic activity and thus possesses anti atherosclerotic properties. Garlic lowers triacylglycerol by inhibiting fatty acid synthesis. The garlic reduces cholesterol by inhibition of HMG CoA reductase enzyme¹⁷.

The use of medicinal plants including Zinger, Fenugreek and garlic to reduce the serum cholesterol levels with in comparison with the statins was studied in present study. Variation in the hepatic enzyme levels was also monitored to observe the side effects among these substances.

MATERIALS AND METHODS

In the present descriptive comparative experimental study thirty six albino rats having weight of about 150-200 grams were included. The study duration was from January 2016 to December 2016 and was conducted at Department of Biochemistry Al-Tibri Medical College and Hospital Karachi. A total of thirty six rats were further grouped into six A, B, C, D, E and F with six rats in each group.

Animals in each group were fed on precisely designed diet chart as follows. Group A (control) rats were kept on normal rat diet. Group B rats were kept on hypercholesterolemic diet containing 20% fat and 1% cholesterol. Group C rats were kept on supplemented diet having 10% ginger powder with hypercholesterolemic diet. Group D rats were kept on supplemented diet having 10% Fenugreek seed powder

with hypercholesterolemic diet. Group E rats were kept on supplemented diet having 10% crushed garlic with hypercholesterolemic diet. Group F rats were kept on 10 mg of Atorvastatin in 1 Kg of hypercholesterolemic diet.

At the completion of 08 weeks all the animals were sacrificed and serum was used for measuring total serum cholesterol, serum triacylglycerides, serum HDL and LDL and liver enzymes.

Results were analysed statistically by using student 'T' test and Analysis of variance (ANOVA). SPSS version 18 was used for statistical analysis. P Value < 0.05 was considered as statistically significant.

RESULTS

The results revealed that animals in group B who were feed on hypercholesterolemic diet, they showed deranged serum lipid profile with increase in total cholesterol (TC), triacylglycerols (TAG), low density lipoproteins (LDL), while decrease in the HDL level was observed when compared with group A rats. Also in group B rats serum hepatic enzymes ALT, AST and ALP were elevated when compared to group A animals.

Table 1 and figure 1 & 2 shows the comparison of lipid profile and serum liver enzyme activities in different groups of rats after taking 10% ginger, Fenugreek, garlic and Atorvastatin 10 mg/kg of diet. There is significant lowered level of triacylglycerides in group C (10% ginger) in comparison to group E (10% garlic) and F (Atorvastatin 10mg/kg of diet). Also the values of HDL were significantly increased in group C in comparison to the group D, E and F. However significant decrease in the level of total cholesterol is found in F (Atorvastatin) group in comparison to C and D group. The values of LDL were significantly lowered in group F in comparison to group C, D and E.

Alanine aminotransferase and Aspartate aminotransferase decreased significantly in group C (10% Ginger) as compared to E (10% Garlic). Alkaline phosphatase (ALP) significantly decrease in group C as compared to D (10% Fenugreek) and E (10% Garlic) but had shown no significant difference as compared to group F (Atorvastatin) as shown in Table-1 and figure 1 & 2.

Table No.1: Comparison of the lipid profile and hepatic enzymes of group C, group D and group E with group F rats

Parameter	Group C	Group D	P value	Group E	P value	Group F	P value
TC (mg/dl)	161.33± 4.25	169.66±6.46	0.877	151.80±5.45	0.770	127.00±3.91	0.001
TAG(mg/dl)	74.50±1.89	85.50±4.07	0.075	106.50±2.44	0.001	105.16±2.79	0.001
HDL(mg/dl)	45.16±1.51	42.66±1.30	0.957	39.83±2.53	0.392	38.50±1.62	0.161
LDL (mg/dl)	101.33±4.39	109.33±5.43	0.830	89.73±3.08	0.542	67.50±4.02	0.001
ALT (IU/L)	35.83±1.16	37.16±1.47	0.998	50.83±2.21	0.001	33.16±2.74	0.944
AST (IU/L)	92.66±2.06	102.50±3.81	0.453	124.50±4.39	0.001	91.83±3.66	0.991
ALP (IU/L)	234.66±7.45	292.50±10.93	0.001	269.33±4.98	0.029	230.66±5.04	0.999

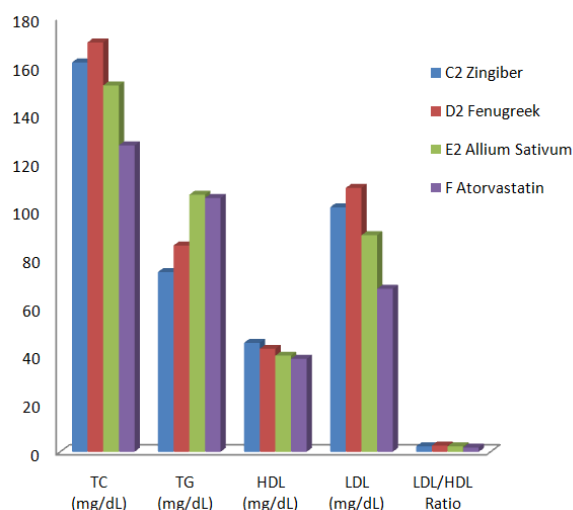


Figure No.1: Comparison of lipid profile in 10% supplemented groups.

The graph represents the mean values of lipid profile in 10% ginger, 10% Fenugreek, 10% garlic and atorvastatin supplemented rats.

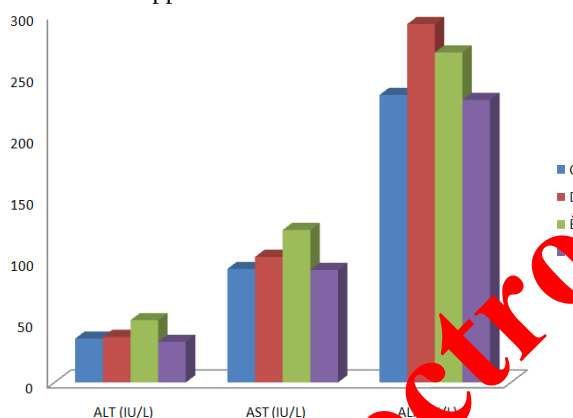


Figure No.2: Comparison of serum liver enzymes in 10% supplemented groups.

The graph represents the mean values of hepatic enzymes in 10% ginger, Fenugreek, garlic and atorvastatin supplemented rats.

The coefficient correlation between serum lipid profile and serum liver enzymes in ginger, Fenugreek and garlic supplemented groups showed that the group D had shown a positive correlation between the total cholesterol level with ALT and AST. The TAG also showed a positive correlation with AST in group C.

DISCUSSION

Continuing search is being carried out for natural substances that can treat hypercholesterolemia. Folic acid, green tea, spices *Allium sativum* (Garlic), Fenugreek (Methi), Zingiber (Ginger) have shown promising results. Use of high fat diet may result in the deranged lipid profile and with evidence of elevated serum triglycerides and total cholesterol as is shown in

the present study. In a study conducted by Ramulu P et al¹⁸ vanspati ghee reported that use of Vanspati ghee may cause higher levels of triglycerides and total cholesterol.

Ginger is widely used as a herbal medicine for the treatment of indigestion, vomiting and hypertension. A number of studies had been done to investigate the effect of ginger on hyperlipidemia. The daily intake of 2 gm of powdered ginger for 2 months decreased the level of triacylglycerol and LDL but no significant change in the level of total cholesterol and HDL level was observed¹⁹. The plasma lipid lowering effect of ginger is associated with several processes. It may be due to disruption of cholesterol absorption from the gastro Intestinal tract, or interference with cholesterol biosynthesis in liver. Ginger also contain antioxidant properties which inhibit LDL oxidation, and decrease the HMG – CoA reductase activity, may lead to the biosynthesis of bile acids which is one way of excretion of cholesterol from the body²⁰.

The liver enzymes aspartate amino transferase and alanine aminotransferase were increased in the rats feed on hypercholesterolemic diet in group B. The possible underlying mechanism responsible for such elevation is due to the hepatic cell membrane damage resulting in leakage of these enzymes and subsequent detection in the serum²¹.

The effects of Fenugreek were studied in hyperlipidemic rats in the present study. A significant improvement was found in the deranged lipid profile with 10% Fenugreek supplemented diet given to rats in group D when compared to group B rats. Wan LX et al²² has reported similar findings in accordance with our findings.

Fenugreek supplementation lowered the liver enzymes ALT, AST and ALP in supplemented groups as compared to hypercholesterolemic group, which showed the hepatoprotective effect of Fenugreek. Renuka et al²³ had reported lowering of alanine aminotransferase and aspartate amino transferase after the supplementation of Fenugreek seeds in diabetic rats. The lipid lowering effects have been pronounced with the high dose of garlic, whereas serum triacylglycerols level is significantly decreased in 10% garlic supplemented group. The results of this study confirm the earlier hypolipidemic effects of garlic²⁴.

On treatment with 10% garlic supplementation the ALT, AST and ALP level are slightly increased, where as Ajayi and his colleague (164) had found a significant rise in the level of AST and ALP in 10% supplemented group of garlic, So it is concluded that garlic reduces the lipid profile and also reduces serum liver enzymes, but garlic in high doses should not be taken, because it raises the serum liver enzymes²⁵.

In the present study the three herbs namely Zinger, Fenugreek, and garlic were compared from one another for their hypolipidemic and hepatoprotective effects and

they were also compared with a synthetic drug; Atorvastatin for lowering of lipid contents and enzymes.

Fenugreek and Atorvastatin hypolipidemic effects were compared by Sharma and Choudhary²⁶ found that Atorvastatin had lowered the TC, TAG, LDL-C significantly as compared to Fenugreek supplemented group but HDL-C level was raised in Fenugreek supplemented group as compared to atorvastatin group. The present work also shows a decrease of TC, and LDL-Cholesterol by Atorvastatin but no significant difference of HDL-C was observed in different supplemented groups of animals in the present study. Memon et al²⁷ reported that combination therapy of nigella sativa and Fenugreek with glibenclamide is beneficial for type – 2 diabetic patients as it increases serum HDL level in these patients.

In the present study group C rats supplemented with zinger showed significant decrease in the serum triacylglycerol when compared to Fenugreek, garlic and Atorvastatin treated animals. In contrast to our findings Islam and Choi have reported no significant difference in levels of triacylglycerols²⁸.

CONCLUSION

Zinger 10% supplementation had slightly higher HDL levels as compared to other herbs and atorvastatin treated group. However atorvastatin treated group showed more decreased LDL levels.

The triacylglycerides level is significantly lowered in 10% zinger supplemented group in comparison to 10% (10% garlic) and F (Atorvastatin) groups. So, this conclusion may be drawn that triacylglycerides lowering effect of zinger is more effective and more potent to that of atorvastatin and other three herbs used. Further that the ginger has more hepatoprotective effect as compared to Fenugreek and garlic supplemented group. However no significant difference was found when ginger was compared to atorvastatin group.

Author's Contribution:

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Association of Serum Adiponectin Levels with the Progression of Coronary Artery Disease

Adiponectin Levels with the Progression of Coronary Disease

Muhammad Kashif Nisar¹, Erum Afaq² and Riaz Ahmed Shahid³

ABSTRACT

Objective: To identify whether serum adiponectin level was associated with varying degrees of CAD severity, both among hemodynamically non significant CAD group, which was considered as a control group in this study and in patients with stable CAD.

Study Design: Descriptive study

Place and Duration of Study: This study was conducted at the Ziauddin University Hospital, Karachi from 1st January 2008 to 31st December 2010.

Materials and Methods: Eighty participants who were advised angiography on the basis of ECG findings and blood parameters were selected for this study. They were assessed for CAD. Anthropometric parameters were checked by standard protocol. Serum adiponectin level was estimated by ELISA kit method.

Results: Serum adiponectin levels were found to be significantly high with increased BMI and waist hip ratio at p value of <0.001 while strong negative correlation was observed in CAD patients as the disease progresses.

Conclusion: Serum adiponectin levels can be used as an indicator of the severity of coronary artery disease.

Key Words: Association, Adiponectin, Progression, Coronary artery disease

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INTRODUCTION

Coronary artery disease (CAD) is one of the major contributors of mortality and morbidity not only in the developed world but also in the developing countries. People of Indo-Asian origin have one of the highest susceptibility to coronary artery disease in the world.^{2,3} During the last two decades researchers emphasized that adipose tissue produces and secretes some proteins of specific biological activities. These proteins are well known as a term adipokines.⁴ Adiponectin is known to be the most abundantly secreted adipocytokine by the fat cells.⁵ It is known to exert anti-inflammatory^{6,7}, insulin sensitizing⁸, anti-atherogenic^{6,9,10} and cardioprotective effects¹¹ in animals. Adiponectin is unique among other adipocytokines in that it is found in plasma in large quantities, but its concentration is decreased in diabetics¹², obese⁵ and CAD¹³ and a high serum adiponectin level is believed to be associated with cardioprotection.

Previously, conflicting results were observed when adiponectin was studied as a marker of cardiovascular disease. Low serum levels were found to be associated with increased risk of CVD in dyslipidemias and diabetic patients and in healthy subjects as well.¹⁴ Contrary to this, other studies shows association of high serum adiponectin level with increased risk of CVD among blacks and elder age groups.¹⁵

MATERIALS AND METHODS

This descriptive study was conducted in Ziauddin University Hospital Karachi over a period of 2 years from 1st January 2008 to 31st December 2010. A total of 80 patients were included. All the participants were explained about the study and they gave written informed consent. All the participants were referred by a cardiologist for angiography for their preliminary diagnosis of CAD. A detailed history was taken and subjects were included in the study on the basis of inclusion criteria. Patients of both sexes having CAD with age range between 40-55 years were included in the study. Patients with recurrent surgery, endocrinological disorders, revascularization procedure, and patients taking lipid lowering drugs were excluded from this study. Physical examination of all the participants was done and anthropometric measurements such as height, weight, BMI, hip circumference, waist circumference and WHR was calculated by standard methods.^{16,17}

Blood was collected at time of angiography. Serum sample aliquots were subsequently stored at -70°C to be used in future. Biological assay was performed in a

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laboratory of Ziauddin University Hospital. The plasma concentration of adiponectin was determined by a commercially available sandwich ELISA (human Adiponectin ELISA; from Gesendet: Donnerstag (DRG instruments GmbH, Marburg, Germany). Angiography was performed on TOSHIBA infinix 2000A. Coronary guide wires were selected while keeping in mind the anatomy and morphology of coronary lesion. Coronary artery stenosis $\geq 50\%$ of luminal narrowing was considered significant. Coronary artery occlusion of $<50\%$ was considered as hemodynamically non-significant lesion as taken as a control group for comparison in this study.

Data was entered in Microsoft Excel and analyzed using SPSS-17. Continuous variables like age, height, weight, BMI, waist circumference, hip circumference, waist hip ratio, and serum adiponectin levels were presented by mean and standard error of mean (SEM). ANOVA was performed to compare mean level among four study groups according to extent of CAD.

Regression analysis was done to estimate relationship of serum levels of adiponectin with the extent of CAD. Statistical significance was considered if $p \leq 0.05$

RESULTS

Four subgroups were made out of total 80 participants that is non-significant disease group (Subjects whose coronary arteries are $<50\%$ occluded and this group was considered as controls), single vessel disease group, two vessel disease group and three vessel disease group. Out of 80 study subjects, 30 (37.5%) had one vessel, 12 (15%) had two vessels, 24 (30%) had three vessels CAD and 14 (17.5%) had non-significant disease (Fig. 1). Overall mean age of subjects was 48.8 ± 6.1 . Analysis of variance (ANOVA) was performed to compare the all included anthropometric parameter in four subgroups groups of patients. Significant effect of larger waist circumference and waist hip ratio ($p < 0.001$) was observed (Table 1).

Table No.1: Biometric measurements according to extent of coronary artery disease

Variable	Non Significant (n=14)	One vessel CAD (n=30)	Two vessels CAD (n=12)	Three vessels CAD (n=24)
	Mean $\pm$ SEM	Mean $\pm$ SEM	Mean $\pm$ SEM	Mean $\pm$ SEM
Age (years)	47.43 $\pm$ 1.57	49.13 $\pm$ 1.21	49.25 $\pm$ 1.51	49.00 $\pm$ 1.30
Height (m)	1.61 $\pm$ 0.02	1.62 $\pm$ 0.01	1.71 $\pm$ 0.02	1.65 $\pm$ 0.01
Weight (kg)	70.14 $\pm$ 3.75	71.77 $\pm$ 3.59	77.58 $\pm$ 2.51	74.71 $\pm$ 1.55
BMI (kg/ m ²)	26.84 $\pm$ 1.34	27.13 $\pm$ 0.71	26.30 $\pm$ 0.54	28.03 $\pm$ 0.49
Waist circumference(cm)	85.64 $\pm$ 1.53	90.13 $\pm$ 1.09	92.67 $\pm$ 2.35	94.88 $\pm$ 1.29*
Hip circumference(cm)	89.50 $\pm$ 1.79	91.83 $\pm$ 1.33	90.67 $\pm$ 1.71	89.29 $\pm$ 0.95
Waist hip ratio	0.94 $\pm$ 0.01	0.98 $\pm$ 0.01	1.06 $\pm$ 0.01	1.07 $\pm$ 0.01 [@]

Values are expressed as mean and standard error of mean (SEM)

ANOVA applied

• P value < 0.001 statistically significant for larger waist circumference among four study groups.

@ P value < 0.001 statistically significant for waist hip ratio among four study groups

It was observed that serum adiponectin levels were highest (5.36 ± 1.17) in subjects who had non significant occlusion ($<50\%$) of coronary arteries and this group is taken as a control group in our study while as the disease progresses in terms of number of coronary arteries involved, levels of adiponectin decreases to 5.13 ± 0.62 in single vessel disease, 2.96 ± 0.30 in two vessel disease and 2.65 ± 0.21 in patients with three vessels coronary artery disease. And this decline in serum adiponectin level is statistically significant at p value of < 0.001 in two vessel and three vessel coronary artery disease group when compared with non significant and single vessel disease (Table-2). Figure 2 shows the negative correlation of serum adiponectin level with r value of -0.44 with the extent of coronary

artery disease that is with the more number of vessels affected serum adiponectin levels decreases.

Table No.2: Serum adiponectin levels in multivessel coronary artery diseases

Study groups	Serum adiponectin levels (μ g/ml)
Non significant disease (n=14)	5.36 $\pm$ 1.17
Single vessel disease (n=30)	5.13 $\pm$ 0.62
Two Vessels Disease (n=12)	2.96 $\pm$ 0.30*S
Three Vessels Disease (n=24)	2.65 $\pm$ 0.21*S

*P value < 0.001 -Significant compared with hemodynamically non-significant (HNS) group.

\$ P value < 0.001 Significant compared with one vessel disease group

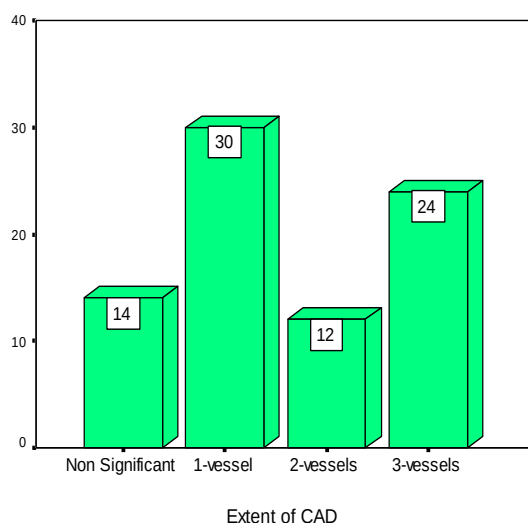


Figure No. 1: Pattern of extent of CAD

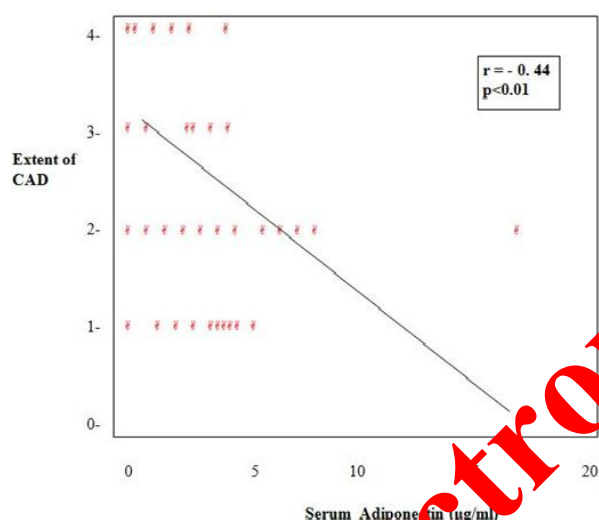


Figure No. 2: Correlation graph for serum adiponectin

DISCUSSION

Adiponectin is the highest circulating adipokine under normal conditions and its concentration decreases in the presence of obesity and its related disorders.¹⁸ Endothelial dysfunction seems to be a pivotal event in the atherosclerotic plaque formation. It can be detected by angiography before appearance of gross morphological changes in the vessel wall. Endothelial dysfunction is a result of an imbalance between endothelial nitric oxide synthase (eNOS) activity and inactivation of nitric oxide (NO) through oxidative stress in the early stages of disease. Adiponectin activates endothelial nitric oxide synthase (eNOS) and eventually production of nitric oxide (NO) in endothelial cells. Adiponectin not only decreases free radicals production but also improves endothelial function in aortas of ApoE KO mice.¹⁹ CAD patients showed significantly lower adiponectin concentrations

when compared with those without CAD, concentration of adiponectin was lowest in those presenting with unstable CAD.²⁰ In another study, Kollias et al. 2011 measured decreased plasma adiponectin levels in CAD patients when compared to non CAD subjects (10.9 ± 3.1 vs. 13.8 ± 5.8 µg/ml respectively, $p < 0.033$). AdipoR1 and AdipoR2 protein levels were decreased in monocytes from CAD when compared to subjects without CAD (59.5 ± 24.9 vs. 80 ± 46 and 70.7 ± 39 vs. 95.6 ± 47.8 , $p < 0.05$)²¹

Our findings are consistent with these studies. According to our study serum adiponectin decreased significantly with the progression of disease that is 2VD and 3VD compared with SVD and non significant group (Table-2). The values of adiponectin are significantly high in hemodynamically non significant (HNS) group and SVD group at the significance level of 0.05. An inverse correlation ($r = -0.44$) with serum adiponectin with p value < 0.001 was observed in multivessel coronary artery disease (Figure-2)..

CONCLUSION

High serum adiponectin levels can be considered as a marker of cardioprotection as the levels decreases with the involvement of number of coronary arteries and the extent of occlusion.

Author's Contribution:

Concept & Design of Study: Muhammad Kashif Nisar
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 Data Analysis: Erum Afaq, Riaz Ahmed Shahid
 Revisiting Critically: Erum Afaq, Riaz Ahmed Shahid
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Cytological Study of Thyroid Lesions by Fine-Needle Aspiration Cytology

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ABSTRACT

Objective: The present study assessed the cytological and morphological features of thyroid swellings by FNA cytology (FNAC) at a tertiary care hospital of Sindh.

Study Design:

Place and Duration of Study: This study was conducted at the Department of Surgery and Pathology, Indus Medical College Hospital from January 2016 to Dec 2017.

Materials and Methods: A sample of 90 cases of thyroid enlargement was selected according to inclusion and exclusion criteria. Demographic characteristics were noted by clinical history. FNAC was performed by senior surgeon and cytological examination by a senior pathologist. Data was analyzed on SPSS 22.0 at 95% confidence interval ($p \leq 0.05$).

Results: Mean $\pm$ SD age was noted as 43.56 ± 19.6 years. Of 90 cases, male and female were 33 (36.6%) 57 (63.3%) respectively ($p=0.0001$). Of 90 cases, the non-neoplastic, neoplastic and indeterminate lesions were noted in 69 (76.6%), 15 (16.6%) and 6 (6.6%) respectively.

Conclusion: FNAC is a cost effective, uncomplicated and safe diagnostic procedure which may be used for the pre-operative screening of thyroid diseases in poor countries like Pakistan.

Key Words: Thyroid Nodules, FNAC, Cytology, Sindh

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INTRODUCTION

Thyroid nodules, particularly the thyroid swellings (Goiter), are frequently encountered disorders in the surgical practice. They present clinically as neck swellings. Thyroid nodules create panic and apprehension because their unpredictable behavior.¹ Several non-invasive screening techniques are available for the thyroid lesions such as the thyroid scanning, sonography etc. However, these techniques are not efficient in distinguishing benign and malignant thyroid nodules. A need of an investigative modality which can be employed before procedures always knocks the minds of clinicians to discriminate the benign and malignant thyroid nodules.^{2,3} Fine needle aspiration cytology is the answer to this lacunae. Now the FNAC has nearly halved the need of thyroid surgeries for diagnostic purpose, since it has proved robust screening test around the world.⁴

Now, the FNAC is an easily available, a well-established, cost effect, first-line, simple screening test. FNAC has proved a useful screening and diagnostic

tool for thyroid nodules.⁵ Many cases of unsuspected thyroid cancer have been diagnosed by FNAC which has proved helpful for the clinicians.⁶ FNAC has proved superior to other non-invasive techniques such as the thyroid scanning, radionuclide and sonography assessment.⁷ FNAC is a safe cost effective procedure in the outpatient's surgical departments. It is minimally invasive procedure that is useful for the aged and pregnant female equally.⁸ Now FNAC is a standard surgical procedure for screening of thyroid nodules. The sensitivity and specificity of FNAC averages 83% and 92% respectively for thyroid malignancies.⁹ FNAC needs simple materials and a trained pathologist / surgeon for aspiration of nodules. Aspiration technique is very simple and similar is the interpretation of the cytological findings.¹⁰ FNAC is useful for the diagnosis of thyroid nodules, both benign or malignant, autoimmune disorders and cysts, etc. The FNAC is used primarily for the exclusion of malignant thyroid nodules. Standard taxonomy of FNAC interpretation was designed by the NCI (National Cancer Institute), Thyroid FNA State-of-the-Science Conference. The NCI has standardized the interpretation of FNAC which is very helpful for the clinicians.¹¹ A previous report, studied 284 cases, included children and adolescents with palpable thyroid lesions, concluded that FNAC is a useful screening test.¹² The present study was conducted to revisit the diagnostic utility of fine needle aspiration cytology at our tertiary care hospital. The present study will be helpful for clinicians to use the FNAC with confidence as cost effective, minimally

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invasive and simple screening test for the thyroid lesions.

MATERIALS AND METHODS

The present case control study was conducted at the Department of Surgery and Pathology, Indus Medical College Hospital from January 2016 to Dec 2017. A sample of 90 cases of thyroid enlargement was selected according to inclusion and exclusion criteria. Diagnosed cases of thyroid disease of age >20 years was the inclusion criterion. Demographic characteristics were noted by clinical history. FNAC was performed by senior surgeon and pathologist, while cytological examination by expert pathologist. Materials used include the 22 G needle, a 5 ml and 10 Disposable syringes (BD, USA). Thyroid gland lesions were examined and findings were noted in a predesigned proforma. Patients were lying in the supine position with pillow under shoulder blades and neck to extend the head and neck. Site for FNAC was cleaned with antiseptic spirit swab. For thyroid nodules of <1.5 cm, the technique of “to and fro movements” of the needle within the nodule was used. While for the larger thyroid nodules, the peripheral sub-capsular part of nodules were aspirated rather than the center. A minimum of 3 phases were performed and fluid obtained was aspirated. Multiple smears with minimum 4-5 smears were made. The smears were fixed on slides fixative alcohol for Papanicolaou staining. Air-dried smears were stained with May–Grunwald Giemsa stain. A smear was considered “adequate” when: 1). 5-6 groups of follicular epithelial cells with 10 or more cells / group were observed / well preserved, or 2). 10 large clusters of follicular epithelial cells with >20 cells each; or 3). 6 groups of follicular epithelial cells on at least 2 of 6 aspirates; and 4). At least 8-10 fragments of well-preserved tissue on each of two slides were noted.¹³ Smear findings were observed and interpreted in the clinical context to avoid any discrepancy, because cysts and colloidal goiter yield specimens with very few cells that would be considered cytological non-diagnostic but that is consistent with the clinical history of lesion. Data was analyzed on SPSS 22.0 statistical software. Ethical approval and patient consent was mandatory. Student's t test and Chi square test were used for the continuous (for example age) and categorical variables (for example gender) analysis respectively. Statistical analysis was performed at 95% confidence interval ($P \leq 0.05$).

RESULTS

The mean $\pm$ SD age was noted as 43.56 ± 19.6 years. Of 90 cases, male and female were 33 (36.6%) 57 (63.3%) respectively ($X^2 = 11.56$, $P = 0.0001$). Male to female ratio was 1:1.72. Rural population predominated comprised 67 (74.4%) compared to 23 (25.5%) urban population. Of 90 cases, the non-neoplastic, neoplastic

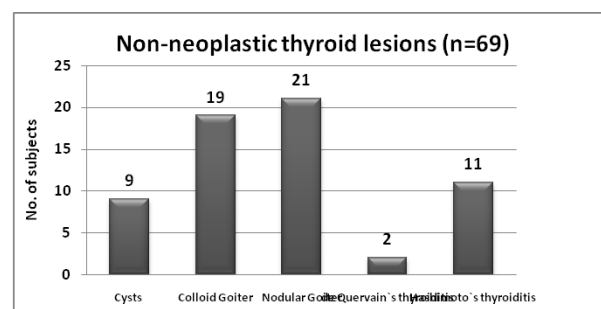
and indeterminate lesions were noted in 69 (76.6%), 15 (16.6%) and 6 (6.6%) respectively. Non-neoplastic lesions observed include the; cyst in 9 (13%), colloidal goiter in 19 (27.5%), nodular goiter in 21 (30.4%), de Quervain's thyroiditis in 2 (2.8%), Hashimoto's thyroiditis in 11 (15.9%) and inconclusive FNAC results were found in 7 (10.1%) cases.

Table No.1: Demographic distribution and thyroid lesions in study subjects (n=90)

	No.	%
Age		
- 20-29.9 years	19	21.1
- 30-39.9 years	30	33.3
- 40-49.9 years	25	27.7
- ≥ 50 years	16	17.7
Male	33	36.6
Female	57	63.3
Rural	67	74.4
Urban	23	25.5
Thyroid lesion		
- Neoplastic	15	16.6
- Non-neoplastic	69	76.6
- Indeterminate	06	6.6

Table No.2: Distribution of non-neoplastic thyroid lesions in study subjects (n=69)

	No.	%
Cysts	9	13.0
Colloidal Goiter	19	27.5
Nodular Goiter	21	30.4
de Quervain's thyroiditis	2	2.8
Hashimoto's thyroiditis	11	15.9
Inconclusive	7	10.1



Graph No.1: Distribution of non-neoplastic thyroid lesions

DISCUSSION

The present is the first study from our tertiary care hospital reporting on the FNAC in thyroid nodule cytological examination. Thyroid swellings (Goiter) are common cases presenting in the routine surgical practice. As the thyroid nodules create panic and apprehension because of suspicious malignancy.¹³ Hence a simple, easy and cost effective screening test

certainly helps the poor population of developing countries like Pakistan. The present study proves the diagnostic significance of FNAC in differentiating the benign and malignant thyroid lesions. FNAC is a minimally invasive easy to perform technique, useful in distinguishing benign and malignant thyroid swellings. Thyroid swelling may be solitary nodule or diffuse enlargement needs to be investigated to rule out the possibility of thyroid malignancy.¹¹ At present, the FNAC has proved an effective diagnostic tool in thyroid nodule screening. Main purpose of FNAC is to provide a rational approach for the diagnosis to determine the correct surgical procedure. The FNAC primarily aids in investigating the thyroid nodules in addition to the sonography, thyroid function tests, scanning and antibody profile, to reach to the diagnosis and planning a decisive surgical procedure.¹¹⁻¹³ FNAC is to handpick the cases that can be treated surgically or conservatively without major cost. Use of different interpretation criteria of FNAC creates problems of true diagnosis; this creates confusion amongst the clinicians. Ultimate result of this discrepancy is a definitive diagnosis is not possible. In the present study, the average age of thyroid lesion patients was 3rd to 4th decade of life; the findings are in agreement with previous studies.^{14,15} In the present study, of 90 cases, the non-neoplastic, neoplastic and indeterminate lesions were noted in 69 (76.6%), 15 (16.6%) and 6(6.6%) respectively. Non-neoplastic lesions observed include the; cyst in 9 (13%), colloid goiter in 19 (27.5%), nodular goiter in 21(30.4%), de Quervain's thyroiditis in 2 (2.8%), Hashimoto's thyroiditis in 11 (15.9%) and inconclusive FNAC results were found in 7 (10.1%) cases. Similar observations have been reported previously.¹⁴⁻¹⁶ In the present study, male to female ratio was 1: 1.72 which is similar to previous studies^{17,18} but contrary to others.¹⁶ In the present study, non- neoplastic group, the goiter 69 (76.6%) which is in agreement with previous studies.¹⁷⁻²⁰ But a previous study²¹ reported follicular malignant tumors in majority of patients, the findings are discordant to present and previous studies.¹⁷⁻²⁰ The finding of goiter of present study is consistent with previous studies.^{18,19} They reported goiter was most common thyroid lesion. Both the studies are in agreement with the present study. In the present study, majority of cases proved to be the benign thyroid lesions, which is in agreement with previous studies.¹⁷⁻¹⁹ A previous study²² reported a benign thyroid lesions predominated, found in 79% of cases; the findings are concordant with present study. On the contrary, a previous study¹⁴ reported majority of thyroid lesions were malignant on FNAC which is inconsistent to present study. In the present study, 6 cases (6.6%) were categorized as malignant thyroid lesions which are concordant with previous study.¹⁴ The finding of malignant thyroid lesions on FNAC is also in agreement with previous studies.^{23,24}

The findings of present study of cyst in 9 (13%), colloid goiter in 19 (27.5%), nodular goiter in 21(30.4%), de Quervain's thyroiditis in 2 (2.8%), Hashimoto's thyroiditis in 11 (15.9%) is in agreement with previous studies.^{16,26,26} The limitations of present study include; first- a small sample size and, second- population of peculiar ethnicity hence findings should be cautiously interpreted for other geographical areas and ethnical groups.

CONCLUSION

Fine needle aspiration cytology (FNAC) is a cost effective, minimally invasive and safe diagnostic procedure for the pre-operative screening of thyroid nodules in developing countries like Pakistan. FNAC may be used as a minimally invasive technique for the triage of patient screening and surgery of thyroid lesions. FNAC is a useful primary investigative modality that should be used for palpable thyroid nodules in surgical practice.

Author's Contribution

Concept & Design of Study:	Inayatullah Memon
Drafting:	Muhammad Hanif Memon
Data Analysis:	Attiya Memon
Revisiting Critically:	Inayatullah Memon
Final Approval of version:	Attiya Memon
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Risk Factors & Outcome in Patients Admitted with Status Epilepticus in Tertiary Care Hospital

Dileep Kumar¹, Babar Bashir², Suresh Kumar², Amrat Kumar², Munir Hussain Siddiqui³,
Shahid Iqbal⁴

ABSTRACT

Objective: To determine the outcome of status epilepticus in patients admitted with seizure in tertiary care hospital.

Study Design: Cross sectional study

Place and Duration of Study: This study conducted at the LGH & JPMC, Karachi from January 2016 to October 2016.

Materials and Methods: Total 108 patients included in the study after informed consent in written form. Patients included in the study who fulfill the inclusion criteria.

Data was collected in preform proforma in 108 cases following the selection criteria. Patients were recruited after informed consent of the patients and ethical approval from the institution. The patients were followed till discharge and all the information collected in preformed proforma. Standard protocol followed for the treatment of status epilepticus. Outcome measured in the form of fully recovered, recovered with neurological deficit & death.

The data were analyzed on version 17. Descriptive statistics was used to summarize the categorical variables such as gender, history of epilepsy, status epileptic in past, drug withdrawal, febrile illness, mortality presented as frequencies and percentages while continuous variable like age was presented as Mean $\pm$ SD. Chi-square test p -value ≤ 0.05 was taken as significant.

Results: Among 108 patients 60(56.6%) were male & 48(44.4%) were female, mean age of study group were 31.3 $\pm$ 13.5 years. The results found that only 2 (1.9%) patients were injured ($p < 0.01$) while 106 patients fully recovered without any neurological deficit.

Conclusion: We concluded after this study that early recognition & prompt treatment of the epileptic patients in status epilepticus have better outcome.

Key Words: Status Epilepticus, Convulsive Status Epilepticus, outcome.

Citation of articles: Kumar D, Bashir B, Kumar S, Kumar A, Siddiqui MH, Iqbal S. Risk Factors & Outcome in Patients Admitted with Status Epilepticus in Tertiary Care Hospital. Med Forum 2017;28(8):100-103.

INTRODUCTION

Status epilepticus (SE) is defined as recurrent epileptic seizure without complete recovery in between seizures or continuous seizure activity that lasts 30 minutes or longer whether or not consciousness is impaired¹. SE is one of the most common neurological emergencies in adults². The annual incidence of SE ranges from 10 to 41 per 100,000 and it is estimated that worldwide there are 3 million cases annually³.

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SE can be classified on the basis of its clinical characteristic as generalized convulsive, subtle and nonconvulsive⁴. The most common and life threatening form of SE is generalized convulsive SE (GCSE). GCSE is characterized by paroxysmal or continuous tonic and/or clonic motor activity associated with marked impairment of consciousness⁵. Refractory status epilepticus is defined as continued seizures after three antiepileptics had failed whereas nonconvulsive status epilepticus is characterized of typical seizure activity⁶. Common precipitants of SE includes central nervous system infection, cerebrovascular accidents (CVA), metabolic derangement and anti-epileptic drugs withdrawal⁷ or underlying diseases⁸. The morbidity and mortality of GCSE is high and associated with either inappropriate m Status epilepticus (SE) is a common, life-threatening neurologic disorder. It is essentially an acute, prolonged epileptic crisis. Generalized convulsive SE is the most frequent and potentially dangerous type of SE. Generalized refers to the abnormal excessive cortical electrical activity, while convulsive refers to the motor activity of a seizure. SE particularly GCSE is associated with high mortality and

neurological sequelae. Early recognition and proper management not only prevent mortality but also reduced neurological disability. On robust literature search only limited data was found on outcomes of GCSE and studies were carried out in children's. This provides us a strong rationale to conducted the study in adults looking at the outcomes of GCSE is our population so as to reduce the adverse consequences of status of epilepticus.

MATERIALS AND METHODS

This descriptive / cross sectional study was conducted at LGH & JPMC Karachi from 01-01-2016 to 31-10-2016. There was purposive sampling with 108 patients

Inclusion criteria: Patients of either gender with age >15 years with status epilepticus

Exclusion criteria: Patients age <15 years & Non convulsive status epilepticus

Data Collection: This study was conducted after the approval from hospital ethical review committee. Patients were approached through emergency department, medical wards & neurology department. All the patients who fulfill the inclusion criteria were enrolled in the study after informed written consent and explanation of the study protocol. A detailed clinical history and relevant neurological examination was

performed. The relevant biochemical test (CBC, Blood sugar, UCE, S.Ca, S. Mg, LFTs), CT/ MRI & EEG was performed in the study group. Standard protocol followed for the treatment of status epilepticus. All the data collected in preformed proforma. All the patients were observed for one week.

Data Analysis Procedures: All the collected data was entered and analyzed in SPSS version 17.0. Descriptive statistics was used to summarize the categorical variables such as gender, history of epilepsy, status epileptic in past, drug withdrawal, febrile illness, mortality presented as frequencies and percentages while continuous variable like age was presented as Mean $\pm$ SD. Stratification was done to control the effect of modifier like age, history of epilepsy and status of epileptic in past on outcome variable through Chi-square test p-value ≤ 0.05 was taken as significant..

RESULTS

A total of 108 patients were included in this study who fulfilling the inclusion criteria. The overall mean age of these patients was 31.3 ± 13.5 years as shown in figure 1. The age range of these patients was 16 to 76 years. Seventy six (70.4%) patients had age between 16 to 35 years as shown in figure 2.

Table No.1: Status epilepticus Risk factors & outcome

Risk factors	No: of patients	Percentage %	Outcome
Drug with drawl	56	60.4%	Improved
CNS Infections	28	28.8%	Improved
CVA (Ischemic Stroke)	1	4.3%	Improved
CVA Hemorrhagic stroke	02	2.1%	Expired
Hypoglycemia	05	5.4%	Improved
SOL	04	4.3%	Improved
Electrolyte imbalance	04	4.3%	Improved
HTN encephalopathy	03	3.2%	Improved
Alcohol over dosage	02	2.1%	Improved
Hypocalcaemia	02	2.1%	Improved

Table No.2: Distribution of patients according to various parameters & Outcome

Various parameters & Outcome			
Variables	Expired Fully improved		p-values
Gender	Yes	No	
Male	2 (3.3)	58 (96.7)	0.20
Female	0	48 (100)	
Age Group			
16 – 35	0	76 (100)	<0.01
36 – 55	0	25 (100)	
56+	2 (28.6)	5 (71.4)	
History of epilepsy			
Yes	2 (2.0)	99 (98.0)	0.71
No	0	7 (100)	
Status of epilepticus in past			
Yes	2 (2.3)	86 (97.7)	0.49
No	0	20 (100)	

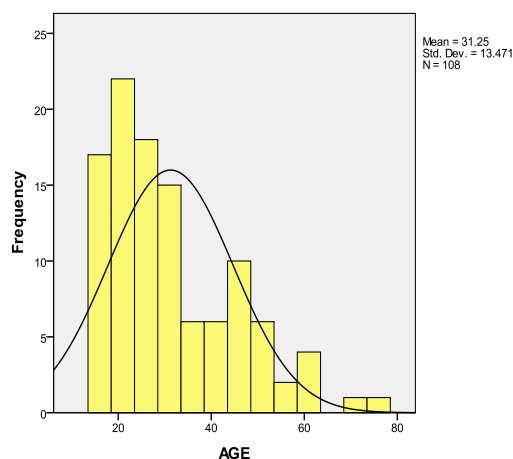


Figure No.1: Distribution of patients

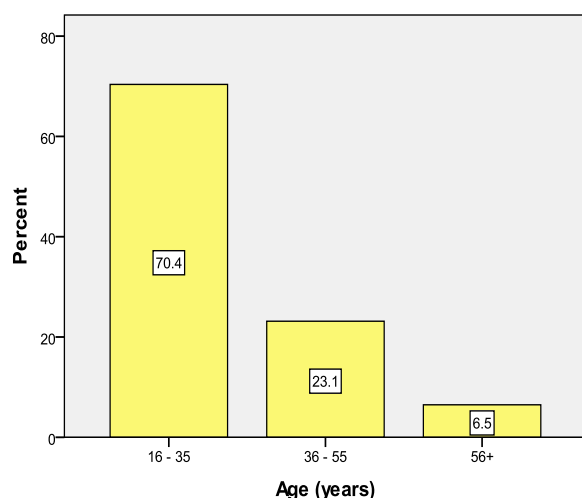


Figure No.2: Distribution of Age Group

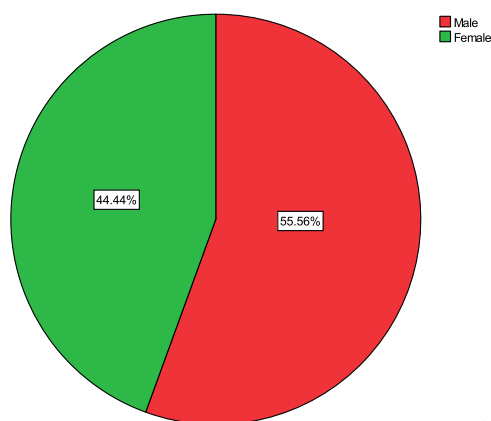


Figure No.3: Distribution of gender (N=108)

There were 60 (55.6%) males and female 48 (44.4%) patients as shown in figure III. History of epilepsy was found in 106 (93.5%) of the patients. 88 (81.5%) of the patients had status epilepticus in past. 56 (60.4%) of the patients had drug withdrawal. 26 (28.8%) of the patients had CNS infections. Six patients (6.4%) had CVA among them 02 patients (2.1%) had intracerebral bleed & both were expired while 04 patients (4.3%) had ischemic infarct. Five patients (5.4%) had hypoglycemia. Space occupying lesion was seen in 04 patients (4.3%), hypertensive encephalopathy was seen in 03 (3.2%) patients while 02 (2.1%) were alcoholic over dosage & in 02 (2.1%) patients hypocalcaemia was seen table I. Two patients (2.1%) had expired as shown in table I & II. There was no statistical significance proportion difference was observed when compared gender, history of epilepsy and status of epilepticus in past by mortality (p-values >0.05). Statistical significance proportion difference (p-value <0.05) was found in age & in hospital mortality as shown in table I.

DISCUSSION

Status epilepticus is the life threatening condition & potentially reversible if early treatment is given to

these patients. Previously related studies have been done on childhood group in comparison to adults & with this aim we planned & gather some data in adults to determine the clinical profile, risk factors by whom patients developed this condition & outcome of SE. In our study the mean age was 31.3 ± 13.5 years & the male gender more affected (56.4%, p= 0.2), the mean age smaller than other similar studies^{9,10} in which mean age was 37.5 & 39 years but the male gender was predominant in these studies (53.4%)¹⁰ & in other study male to female ratio was 4:1¹¹ the reason of difference in mean age because of small sample size in our study while the other studies done on large scales. Status epilepticus more common we observed in our study was 15- 35 years' age group (70.4%, p <0.01) and the outcome was also better in this age group as compared to the age group more than 56+ years as in our study 02 patients expired (2.1% p= 0.01) the reason we observed in this age group patients usually have comorbidities like DM, HTN, CKD & in our study both patients were hypertensive & had massive intracerebral bleed which also supported in other studies¹². Regarding the past history of epilepsy, it was presence in 93.8% patients & 88 patients had past H/O status epilepticus which is slightly higher in comparison to in one previous study that was 80%¹³ & in other one it was in 50% patients¹⁴. The reason of difference in our setup most of the patients quit antiepileptic drugs without any consultation or advise which we observed in our study that 60.4% patients had SE because of stop their AED & this also can be seen in other studies^{15,16}. The other common cause by which patients developed SE was infections most of the infection were CNS but the other areas of body also susceptible of infections as we observed in 26 (28.8%) patients which also be supported in previous similar study¹⁰ in which it was presence in 32.7%. Stroke¹⁷ was another common risk factor especially in patients who had massive ICB & the outcome is also poor in these patients as 02 patients was expired in our study (2.1% p= <0.01) while small bleed & ischemic infarct has better outcome. Hypoglycemia was also potential risk factor but rapid therapy gives excellent outcome as in our study 05 patients was with hypoglycemia as all the patients fully improved. Among other less common risk factors SOL was also seen in 04 (4.3%) patients & after initial therapy & improvement patients was referred to neuro surgical department for specific treatment., electrolyte imbalance especially hyponatremia & hypocalcaemia can cause seizures and need to treated as earlier to prevent permanent hypoxic brain injury. Regarding the outcome of SE after the standard protocol of SE treatment it was 2.1% (p= <0.01) and the age group was above 56+ years & rest of the patients fully improved without any neurological deficit, in other study¹⁰ in which the mortality was 3.4% which is slightly higher & probably the reason were large sample size while in

another study regarding the outcome of SE mortality was observed in 14%, partial recovery in 30% while 35% of patients were fully improved¹⁸. The predictors of mortality in one study⁹ were hypoxic brain injury OR= 9.85, CVA= 2.8, female sex= 1.34 & other comorbidities OR= 6.7.

CONCLUSION

We conclude after this study that it is necessary to properly educate & counsel these patients for strictly adherence to the anti-epileptic drugs as we observed it is the common precipitating factor of status epilepticus, along with this the other potentially reversible risk factors should be addressed & treated promptly for better outcome.

Author's Contribution:

Concept & Design of Study: Dileep Kumar, Babar Bashir
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 Data Analysis: Suresh Kumar, Amrat Kumar
 Revisiting Critically: Shahid Iqbal, Dileep Kumar
 Final Approval of version: Munir Hussain Siddiqui

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

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Maternal Exposure to Steroid, Unknowing by Taking Medicine from Religious Ammil for Birth of Boy and the Risk of Oral Cleft in Newborn

Riasat Ali Nehra¹, Raafea Tafweez² and Noor ul Mobeen³

ABSTRACT

Objective: The aim of present study was to find out a relation between environmental factors (steroid) and formation of Cleft Lip and Palate (CLP) by comparing the cases of CLP with controls.

Study Design: Convenient Sampling, Case control.

Place and Duration of Study: The study was conducted at the Mayo Hospital Lahore, Children Hospital Lahore and Arif Hospital, Rashid Latif Medical College from 1st January 2014 to 31st December 2014.

Materials and Methods: It was a convenient sampling, case control study, one hundred cases of Cleft Lip and Palate newborns up to age of six months, in different Hospitals of Lahore, having facilities of treating CLP. Antenatal history was taken in first three months of pregnancy from mothers about taking medicine from religious Ammil for birth of male baby.

Results: The frequency of CLP was found to be significantly higher in mothers who were taken medicine from religious Ammil for birth of boy (12% as compared to 7.4% of controls).

Conclusion: Medicine taken from Religious Ammil during the first trimester of pregnancy resulted in increased frequency of CLP in newborns.

Key Words: Cleft lip, Cleft palate, Environmental factors (Medicine taken from religious Ammil)

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INTRODUCTION

Earlier people do not know about human development. They believe on religion and false notions.¹ First time Fabricius ab Aquapendente (1537-1619) revealed that CLP was due to intrauterine defective development of fetus.² A physician in China acquired skill to correct the CL in 390 BC. First patient who operated for CLP was a Chinese person, Wei Yong, 18 years old.^{3,4} A baby born with CLP has many problems. 1st is the feeding difficulty, baby born with CLP feed slowly or bring up milk through nose, speech and language problems. Hearing problem due to wet ear is also common. Later on jaw and teeth problems develop, with some missing teeth or added teeth, psychological problem is very vital and is a problem for baby to adjust in society.

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New borne with CLP needs, a prolonged series of treatment and surgery from birth to child adolescence.⁵ Children with CLP feel nervousness and sadness. They feel that they are not treated properly by their age groups, so many behavioral changes can occur in them.⁶

Imperfective listening, speech, face look can cause long standing bad effects on the health of patients. These children need personal care from their parents for extended time. Feeding problem is very familiar in these patients. There is deficiency of proper suction of milk. To solve this problem special types of bottles with nipple are used. External ear may be disfigured in patients with CP and are liable to infection leading to hearing loss and speech defect.⁷

When children grow with cleft, they feel constant strain from society. At this stage, strong parent reinforcement is needed to prevent the negative reaction in their children.⁸

If clefts are repaired early, baby can be prevented from many social and physical challenges. Otherwise, permanent special care by psychiatrist and other health team is required.⁹

CL is a gap or split in the upper lip and CP is a gap or split in the roof of the mouth. It is due to inappropriate development of lip and roof of mouth. Different congenital and environmental factors are involved in causing CLP.¹⁰

Head and face is developed from five primordial prominences.

1. Fronto-nasal prominence.
2. Two Maxillary prominences, one from each cheek unite with fronto-nasal prominence and form the upper lip.
3. Two mandibular prominences form lower lip.¹¹
Premaxillary part is in front of incisive fossa, which constructs the anterior palate. Palate is formed after the upper lip development, during union of palatine shelves above tongue different teratogenic agents externally and internally can affect this union and cleft is formed.¹¹

Classification of cleft lip and palate

- a) According to location, relative to incisive fossa as

- Primary anterior to the fossa
 - Secondary posterior to the fossa
- b) Unilateral and bilateral, which are further sub classified into three groups. Pre alveolar, post alveolar and alveolar.¹²
- c) According to the structures involved.
- Complete (soft and hard palate)
 - Incomplete (simple hole in roof of the mouth, split uvula and sub mucus cleft palate (SMCP)).¹³

A microform cleft is a mild form of CL, which can appear as small as a little dent in the upper lip, which looks like a scar from nostril to the lip.¹⁴

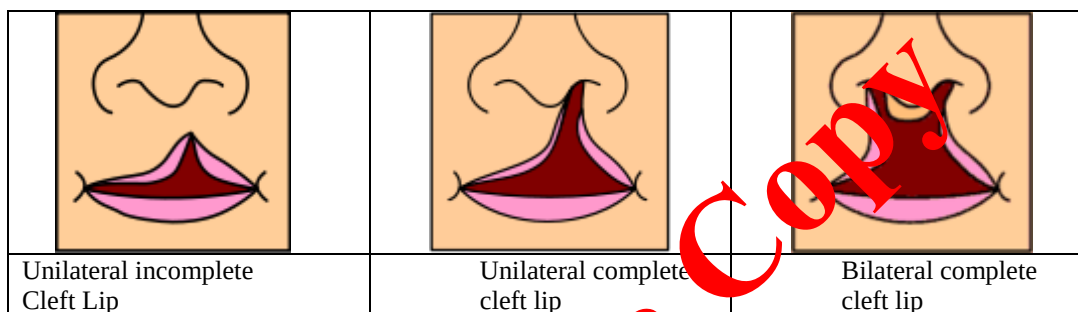


Figure No.1: Unilateral and Bilateral Cleft Lip¹³

Clefts can occur on other parts of face also, e.g. Paul Tessier's clefts.¹⁵

A considerable numbers of cases of CLP have associated abnormalities. Number of anomalies in newborn babies varies from as low as 4.3% to as high as 63.4%, whereas in CP this is 47% out of which 33% are skeletal.¹⁶

Most common anomalies reported are of central nervous system & skeletal system, followed by urogenital & cardiovascular system.¹⁷

Preterm born babies have 22% allied anomalies.¹⁸ Babies having both CLP had 28% allied anomalies, a study revealed in Sweden in which cardiovascular deformity was found 24% and multiple deformities 15%.¹⁹

It was observed that 10% of congenital anomalies are environmental, 10% are genetic, but 80% are due to both genetic and environmental complex.²⁰

MATERIALS AND METHODS

Study Settings: Newborns with Cleft Lip or Cleft palate alone or both visited with their mothers in different teaching hospitals of Lahore with facility of treating CLP under six months of age from 1st January 2014 to 31 December 2014. Diagnosis of CLP was confirmed by concerned doctor. Case and controls with Genetic history and cousin marriage were not taken, cases and controls with consent from their mothers or relatives were taken. It was case control study with convenient sampling. This study has been approved by

King Edward Medical University Lahore, Advanced Board of Study in December 2013.

Interview: Mothers of study subjects were interviewed according to designed Questioners and set proforma, with demographic, medical, obstetric history, habits and occupation and use of medicine from religious Ammil for birth of male baby during 1st trimester of pregnancy. After taking history of mothers, cases were examined, diagnosis was confirmed by concerned specialist and photographs were taken.

Data analysis: Odds Ratio was estimated and 95% confidence intervals and SPSS, 20.00. Duration of exposure was described by Mean $\pm$ SD.

RESULTS



Figure No. 2: Bilateral Cleft Lip not United with Nasal Septum, Anterior and Posterior Cleft Palate

Identification of environmental factors are crucial in order to formulate prevention strategies. Maternal exposure to steroid unknowingly from religious Ammil or quakes have been associated with cleft lip and palate. There were 12% mothers of cases and 7.4% mother of control gave history of taking medicine from religious Ammil for birth of male baby during their pregnancy. Odds ratio was significant showing 1.71 times more risk if the mother took medicine from religious Ammil for birth of boy during pregnancy.



Figure No. 3: Unilateral Cleft lip and palate



Figure No. 4: Posterior Cleft Palate

Table No.1: Association of "use of medicine during pregnancy for birth of boy from religious Ammil"

	Cases	Control
Yes	12%	37(7.4%)
No	888%	463(92.6%)
Total	100	500

Odds Ratio = 1.7

DISCUSSION

Different countries studies have different findings relevant to this study. A number of environmental factors have been concerned in the formation of cleft lip and or palate.¹¹

Medicine taken by Religious Ammil possibly steroids for birth of boy has been considered as a possible etiological factor increasing the incidence by 1.71. Ammil mostly gives steroid which break the circuit of

genes which act on growth factor; a protein that acts on cell division and normal palate development is affected leading to CLP.²¹ A relation of systemic use of steroid and cleft palate has been shown (Odds ratio 2.59).²² In pradat P and kallen B studies.

These studies are comparable with our study.²³

CONCLUSION

In conclusion, this study demonstrated the role of environmental factors in this geographical area for orofacial cleft forming. In the light of these results it is advisable to develop health care strategies and awareness programs for population at large and specifically for pregnant mothers.

Author's Contribution:

Concept & Design of Study: Riasat Ali Nehra
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 Revisiting Critically: Noor ul Mobeen
 Final Approval of version: Riasat Ali Nehra

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

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Commitant Convergent Squint

Muhammad Tariq and Hira Ali

ABSTRACT

Objective: To estimate the frequency and Types of Commitant Convergent squint among patients attending EYE OPD at Mardan Medical Complex Teaching Hospital Mardan.

Study Design: Descriptive study

Place and Duration of Study: This study was conducted at the MMCTH Mardan from September 2016 to October 2016.

Materials and Methods: Fourteen Hundred and Two Patients were examined. Thirty Nine Patients were having Strabismus which were included in this study.

Results: Total numbers of patients were 39 with commitant convergent squint, in which 25 had Accommodative esotropia, 05 has infantile esotropia, 03 had Residual esotropia, and 03 had constant esotropia with amblyopia. 18 patients were male and 21 were female. 29 patients needed glasses i.e squint associated with refractive error and 10 patients were refer for surgery.

Conclusion: The commonest type of squint is accommodative esotropia. Infantile type follows second. Most of the commitant convergent squint cases were children under 09 years of age.

Key Words: Strabismus (squint), commitant convergent squint (esotropia), Accommodative esotropia, infantile esotropia,

Citation of articles: Tariq M, Ali H. Commitant Convergent Squint. Med Forum, 2017;28(8):108-110.

INTRODUCTION

Strabismus is a condition in which the visual axes assume a position relative to each other different from normal physiological conformity. It is an imbalance of eye muscles where one eye cannot properly align on an object with the other eye¹. It is a condition of crossed eyes in which the angle of squint is the same in all directions of gaze for a given testing distance². Amblyopia may cause strabismus and vice versa. Strabismus starts in infancy and early childhood and if left untreated it can cause deep amblyopia and postural changes³.

Strabismus affects 2 to 5% of children in Pakistan. The prevalence of squint is 5.4% in our country in which 2.5% of patients are under 5 years of age and 2.9% are over 5⁴⁻⁵. More than half of misaligned eyes are because of convergent squint in the United States and the prevalence of esotropia constituted 75% of the total⁶. In central Africa esotropia accounts for 80% of the total cases⁷. Esotropia was five times more common in the United Kingdom whereas exotropia to esotropia was 7:1 in singaporian children⁸⁻⁹. Accommodative esotropia is a form of strabismus caused by reflective error in one or both eyes.

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Other causes of squint are some genetics errors, measles or other viral illnesses, hydrocephalus or other neurological conditions and asymmetrical cataracts¹⁰⁻¹¹. To achieve normal binocular vision for commitant esotropia early detection of convergent squint and treatment intervention are very important. If left untreated or delayed then complications do occur.

This study was planned to study the prevalence of commitant squint in Mardan and surrounding areas as we have studies only from Peshawar and other Provinces.

MATERIALS AND METHODS

It is a hospital based descriptive study in which we estimate the frequency and type of commitant conversion squint among all age group patients attending eye OPD in MMCTH Mardan. Patients having some mental disorders or with other associated systemic illness and old patients are excluded.

RESULTS

Total ophthalmic patients were 1402, out which 39 patients have commitant convergent squint. Among 39, 18 were male and 21 were female. 25 patients have accommodative esotropia, 05 have infantile esotropia and 03 have residual. 03 patients have acquired non-accommodative esotropia and 03 have constant esotropia with amblyopia. 29 patients need glasses and 10 need surgery.

Table No. 1: Patients with squints

Total Patient	Patients with squints	Percentage
1402	39	2.78%

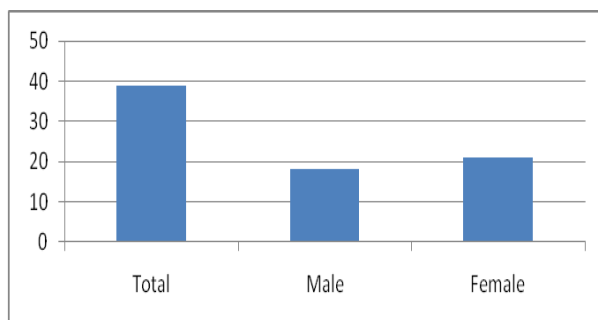


Figure No.1: Male and female patients ratio

Table No. 2: Esotropia types in patients

Types	No of patient	Percentage
Accommodative Esotropia	25	64.10%
Infantile Esotropia	5	12.82%
Residual	3	7.69%
Acquired Non-Accommodative Esotropia	3	7.69%
Constant Esotropia with Amblyopia	3	7.69%

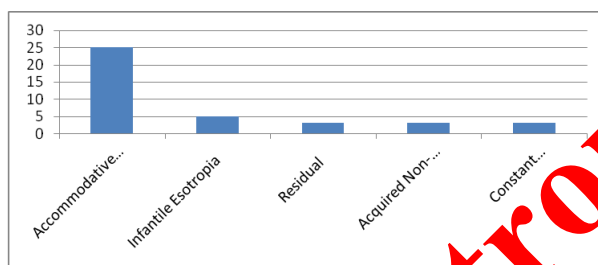


Figure No.2: Ratio of Esotropia

Table No. 3: Action needed on patients

Action needed	No of patient	Percentage
Glasses	29	74.35%
Surgery	10	25.64%

DISCUSSION

Male to female ratio in our study was 21 (53.84%): 18 (45.15%). Most frequently occurring defect was accommodative esotropia as a cause of comitant convergent squint. Sixty four percent patients were having accommodative esotropia. The defect of accommodative squint starts in infancy with an average age of 2-3 years⁽¹²⁾. Presentation of strabismus can some time be delayed upto 07 years of age⁽¹³⁾. Uncorrected refractive error is the basic mechanism or an abnormal accommodative convergence relationship. This is associated with hyperopia which reduces the angle and/ or frequency of esotropia when the hyperopic correction is worn⁽¹⁴⁾.

Our study showed frequency of comitant convergent squint to be 2.5%. It is similar to the prevalence of strabismus in pakistan⁽¹⁵⁾. Infantile esotropia was

present in 12.82% of cases and comes second in the list. Louwagie CR and Greenberg AE also published that accommodative esotropia and infantile esotropia are the commonest types of squints in their population based studies¹⁶⁻¹⁷. Etiology is not known but several factors can be involved including genetic predisposition, neurological disorders, prematurity, hydrocephalus, seizure disorders, family history of strabismus, excessive tonic convergence or uncorrected hyperopia. Most of the patients of comitant convergent squint were under 09 years of age⁽¹⁸⁾. If left untreated these squints in early years can cause amblyopia, refractive errors and postural changes.

CONCLUSION

Accommodative esotropia and infantile esotropia are the most common types of comitant convergent squints. As most of the patients are young, therefore early detection of strabismus can reduce the chances of constant esotropia, postural change and deep amblyopia.

Author's Contribution

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 Drafting: Muhammad Tariq
 Data Analysis: Muhammad Tariq, Hira Ali
 Revisiting Critically: Hira Ali
 Final Approval of version: Muhammad Tariq

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

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Dyslipidemia and Resistin in Obese Diabetic and Non-diabetic Subjects

Syeda Ijlal Zehra Zaidi¹, Naghmana Lateef², Sadia Islam¹

Dyslipidemia and Resistin in Obese Diabetic and Non-diabetic

ABSTRACT

Objective: This study was planned to compare and correlate the potential role of resistin in obese patients with T2DM and obese non-diabetic controls and also to evaluate the correlation between resistin and marker of obesity and lipid profile.

Study Design: Comparative study

Place and Duration of Study: This study was conducted at the Department of Medicine at Lahore General Hospital; Lahore affiliated with Postgraduate Medical Institute, Lahore from January 2016 to March 2017.

Materials and Methods: This study was conducted in Physiology Department of Postgraduate Medical Institute Lahore. In this study we also collaborate with Medicine department of General Hospital of Lahore. In this study we had taken 80 (Eighty) male and female obese patients. The patients have not taken any medicine during study. We have not considered pregnant women. The range of age was thirty to fifty five (35 to 55) years.

Results: In type 2 diabetic patients we found high level of Serum resistin i.e (38 ± 8 ng/ml) as compare to controls. Serum cholesterol (208 ± 70 mg/dl), serum triglycerides (188 ± 74 mg/dl), serum LDL (160 ± 37 mg/dl) was significantly higher in diabetic obese Patients. Serum HDL (38 ± 15) mg/dl was significantly low in diabetic subjects. Pearson's analysis revealed significant correlation between serum resistin and serum triglycerides in both groups. A negative correlation was seen between serum resistin and serum HDL in both groups.

Conclusion: Resistin may have a role in disrupting lipid parameters thus leading to insulin resistance in diabetes mellitus in obese subjects or vice versa. We should try to control hormone such as resistin it will be helpful to control diabetic obese patients with dyslipidemia

Key Words: Diabetes mellitus, Dyslipidemia, Resistin, Obesity

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INTRODUCTION

Lipotoxicity is result of accumulation of fat in pancreas, muscle and liver cells it is due to defects in lipid metabolism. Increased lipid anabolism and uptake of fatty acids involved in above mentioned abnormalities.¹ Uptake of fatty acids and oxidation of fatty acids abnormality caused accumulation of diacylglycerols, ceramide and acyl-CoA (metabolites of fatty acids) and fatty acids in cells of specified organs.² The metabolites inhibit the phosphorylation process of receptors (insulin receptor substrates) and tyrosine (IRS-1 and IRS-2) caused insulin resistance by inhibiting insulin-mediated glucose uptake.³ Type 2 diabetes mellitus one of many reason is abnormal lipid metabolism which caused increased serum FFA.⁴

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When in serum HDL (high density lipoprotein cholesterol) is high in combination of LDL (low density lipoproteins), FFA (free fatty acids) and TG (triglycerides) ultimately caused Dyslipidemia.⁵ Hormonal abnormality affects the lipid metabolism enzyme which caused excess circulation of FFA ultimately TG is accumulated in cells of (liver and muscle) which is the main reason of to insulin resistance.⁶ The abnormality of Lipoprotein such as (HDL) caused decreased level of HDL-C which is also link with decreased level of Apo-A.⁷

Apo-A production is decreased in liver cells due to high supply of TG and HDL particles with breakdown of HDL particles.^{8,9} One hormone which is found in adipose tissue of rodents and also in human beings Resistin (polypeptide cysteine-rich).¹⁰ It is said that this hormone which is protein in nature caused enhancement of FFA by different mechanism. It is also decreased the absorption of FFA from muscle cells and also affect fatty acid re-esterification in adipose tissue.^{11,12} The one of reason in many that AMPK i.e phosphorylation reduction decreased lipogenesis ultimately increased FFA.¹³

The aim of our study is to measure correlation, between serum resistin, insulin resistance, and dyslipidemia in obese non-diabetics and obese type 2 diabetics.

MATERIALS AND METHODS

This study was conducted in Physiology Department of Postgraduate Medical Institute Lahore. In this study we also collaborate with Medicine department of General Hospital of Lahore. In this study we had taken 80 (Eighty) male and female obese patients. The patients have not taken any medicine during study. We have not considered pregnant women. The range of age was thirty to fifty five (35 to 55) years.

Three ml fasting blood was taken in test tube with anticoagulant (sodium fluoride) was used. After taking blood, we centrifuged it for 20 mints. Take the serum and analysed the sample on Micro lab 300. We used all the kits of Merck.. We perform the test of Total Cholesterol, HDL, LDL, serum triglycerides, Serum Cholesterol

RESULTS

In type 2 diabetic patients we found high level of Serum resistin i.e (38 ± 8 ng/ml) as compare to controls. Serum cholesterol (208 ± 70 mg/dl), serum triglycerides (188 ± 74 mg/dl), serum LDL (160 ± 37 mg/dl) was significantly higher in diabetic obese Patients. Serum HDL (38 ± 15 mg/dl) was significantly low in diabetic subjects. Pearson's analysis revealed significant correlation between serum resistin and serum triglycerides in both groups. A negative correlation was seen between serum resistin and serum HDL in both groups.

In our study we found that in obese diabetic patients highly level of low density lipoprotein (LDL), triglyceride (TG) and cholesterol as compared to obese controls. The correlation was not exist significantly between LDL-cholesterol and total cholesterol and resistin in obese diabetic patients as compared to obese controls. However TG(triglycerides) and serum resistin showed significant positive correlation in obese diabetic patients as compared to obese controls. While HDL- cholesterol showed significant negative correlation in obese diabetic patients as compared to obese controls.

Table No.1: Lipid profile in the diabetic and non diabetic groups

Variables	Diabetics n= 40 Mean ±SD	Non Diabetics n=40 Mean ± SD	p value
Cholesterol mg/dl	208 ± 70	151 ± 36	**0.000
Triglycerides mg/dl	188 ± 74	124 ± 39	**0.0001
LDL mg/dl	160 ± 37	141 ± 35	*0.0229
HDL mg/dl	38 ± 15	54 ± 15	**0.000

n = number of subjects * = significant

** = highly significant

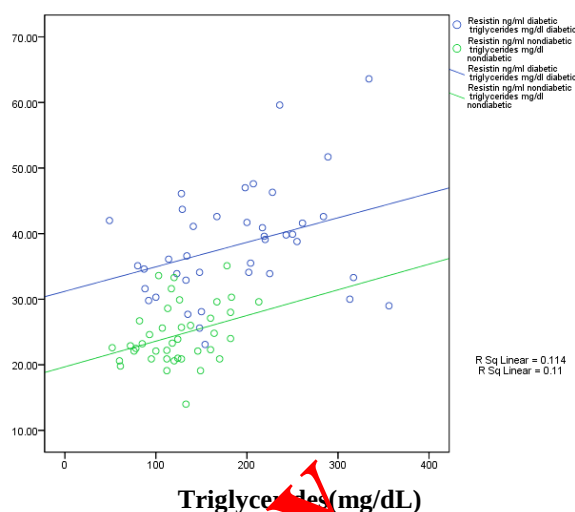


Figure No.1:

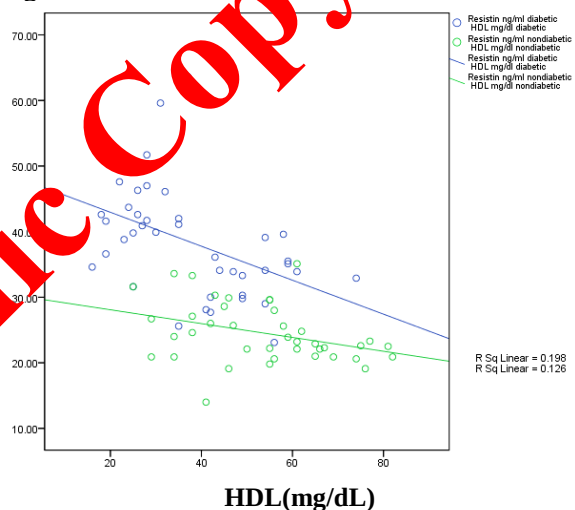


Figure No.2:

DISCUSSION

Dyslipidemia link is exist with obesity and also type 2 diabetes and insulin resistance metabolic abnormality are found worldwide as an epidemic.¹⁴ One reason of diabetes is lipid metabolism Abnormalities and also Insulin resistance cause T2DM and obesity.¹⁵

In our study we found that in obese diabetic patients highly level of low density lipoprotein (LDL), triglyceride (TG) and cholesterol as compared to obese controls. The correlation was not exist significantly between LDL-cholesterol and total cholesterol and resistin in obese diabetic patients as compared to obese controls. However TG(triglycerides) and serum resistin showed significant positive correlation in obese diabetic patients as compared to obese controls. While HDL- cholesterol showed significant negative correlation in obese diabetic patients as compared to obese controls.

The result is also supported with other studies such as Asano et al. (2010) which showed . The correlation was not exist significantly between LDL-cholesterol and total cholesterol and resistin in obese diabetic patients as compared to obese controls. However TG(triglycerides) and serum resistin showed significant positive correlation in obese diabetic patients as compared to obese controls.

Hoseen et al. (2010) study also supported he study in rodent that The correlation was not exist significantly between LDL-cholesterol and total cholesterol and resistin in obese diabetic patients as compared to obese controls. However TG(triglycerides) and serum resistin showed significant positive correlation in obese diabetic patients as compared to obese controls. While HDL- cholesterol showed significant negative correlation in obese diabetic patients as compared to obese controls in rodent

Contrary to this Qi et al. (2008) study also supported he study in in patients with metabolic syndrome his results showed no significant correlation between lipid and resistin level. Mohammadzadeh et al. (2008) study also supported he study in Metabolic syndrome he found that insulin resistance, dyslipidemia and obesity are linked with resistin concentration.

CONCLUSION

Resistin may have a role in disrupting lipid parameters thus leading to insulin resistance in diabetes mellitus in obese subjects or vice versa. . The correlation was not exist significantly between LDL-cholesterol and total cholesterol and resistin in obese diabetic patients as compared to obese controls. However TG (triglycerides) and serum resistin showed significant positive correlation in obese diabetic patients as compared to obese controls. While HDL cholesterol showed significant negative correlation in obese diabetic patients as compared to obese controls. We should try to control hormone such as resistin it will be helpful to control diabetic obese patients with dyslipidemia.

Author's Contribution:

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Revisiting Critically: Sadia Islam, Naghmana Lateef

Final Approval of version: Syeda Ijlal Zehra Zaidi

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

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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.

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