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Editorial

Mental Health Problems on the Rise

Mohsin Masud Jan
Editor

There is a great rise to the mental health problems within the past few years though the matter has not been given due attention as has been needed by any of the concerned authorities.

We have not planned any mental health policy on national level particularly in relation with impact of terrorism on general population including affected individuals. Also the impact on child and adolescent mental health has not been given attention in this context.

The Institute of Psychiatry organized the Clinico-Pathological Conference (CPC) at the New Teaching Block of Rawalpindi Medical College with an objective of apprising the medical students, psychologists, and various physicians and surgeons in attendance, about the mental health problems associated with the ever-growing problem of terrorism and natural disasters.

The pictorial representation of the 2005 earthquake brought back memories of how badly the nation was shaken. The pictures of the starving flood affectees lunging for packets of food moved the audience. Finally, the graphic depiction of the 16th December, 2014, terrorist attack on Army Public School in Peshawar, left most of the attendants in hall in tears. The pain the individuals unanimously felt on viewing the video clip reminded them of how much more horrifying it must have been for those who actually lived through those moments of terror.

There were two million people left homeless by the earthquake in 2005 with 87,000 deaths and over a hundred thousand left injured. The 2010 floods, he said, affected a flabbergasting 20 million people. Since 2001 the ceaseless wave of terrorism has taken the lives of over 45, 000 Pakistanis.

People inflicted with these disasters are twice likely to develop mental illness. Terrorists induce terror through violence against non combatant targets and exploit the media to magnify the impact of their actions and noble religious concepts are misconstrued and exploited for these evil ends.

The immediate aftermath of a disaster a raised interest can be seen in all concerned stakeholders. National departments as well as international agencies come forward to offer their help in the form of financial aid, logistic support and technical assistance for the rehabilitation of the affected. However, this raised interest and concern proves to be short lived and quickly abates over the ensuing period.

The psycho-social rehabilitation of those affected by disasters is not a task of weeks and months but of years and so far our half hearted and misdirected efforts have not been able to achieve the desired results.

The psycho-social rehabilitation should be an essential component of our response to disasters and that the National Disaster Management Cell should incorporate a national task force of mental health professionals who are able to provide these services to the communities affected by disasters in a systemized and sustained fashion.

The internationally verified tools which are available to help with the psychological rehabilitation of the people affected by disasters. The first of these interventions is known as Psychological First Aid (PFA) was developed by the National Centre for Post Traumatic Stress Disorder (NC-PTSD), a section of the United States Department of Veterans Affairs. This tool provides a modular approach to help in the immediate aftermath of disaster or terrorism. It is designed to reduce initial distress and foster short and long-term adaptive functioning and coping. The components of PFA include protecting the individual from further harm, presenting him with an opportunity to talk without pressure using the principles of active listening and compassion.

The management of mental health issues related to disasters in our country which may be a multi tier model that extends from policy making at the national level, strengthening of existing mental health services and capacity building by training and incorporating non mental health professionals to deliver psychosocial rehabilitation modules in their communities.

Original Article

Pulmonary Nodules

MDCT at LUMHS: Detection of the Small Pulmonary Nodules by Use of Maximum Intensity Projection Images

Adnan Ahmed[1], Suhail Ahmed Almani[2], Muhammad Iqbal[2] and Zubair Suhail Almani[2]

ABSTRACT

Objective: To assess the benefit of computed tomography by using Maximum Intensity Projection (MIP) compare to Volume Rendering (VR) reconstructions to study pulmonary metastases.
Study Design: Observational / descriptive study.
Place and Duration of Study: This study was conducted at Radiology Department of Liaquat Medical University Hospital Hyderabad from July 2015 to April 2016.
Materials and Methods: Computed tomography studies of 30 pulmonary metastatic cases were reviewed retrospectively. Images were evaluated as number of the nodules. Two viewers on VR & MIP reconstructions on axial-source images assessed these parameters. Independent evaluation of the MIP & VR images was done by well experienced chest radiologist. In the course of independent image assessment, each pulmonary nodule was indicated by an arrow as well as recorded in the Performa.
Results: A total of 30 cases were integrated in our study. The mean age of the cases was *52.12 ± 7.33* years. Out of 30 cases male were in majority 24(80%). Total 334 nodules were detected by MIP images, while out of them 276 were detected by VR images and 58 were missed, therefore MIP images is the significantly more detectable technique for pulmonary nodules detection. P= value 0.001. Following by central 253 nodules were detected by MIP images, out of them 40 nodules missed by VR images and 113 were detected, with significant difference P value = 0.001. Similarly all the peripheral nodules were also significantly more detected by MIP images, as compare to VR images. P value = 0.001
Conclusion: Maximum intensity projection is more useful and best technique, to detect the small pulmonary nodules especially in central lung.
Key Words: Small pulmonary nodules, MIP, VR

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INTRODUCTION

Lungs are important organs of the body for survival of human beings. The lungs may suffer from many fatal diseases. In radiology, it is a general clinical issue to detect pulmonary nodules through computed tomography in the assessment of cases with suspected malignancy of metastases to the lung as well as to detect tiny nodules as part of a CT-based lung cancer screening program. [1] In order to detect the nodule, Helical CT is an alternative technique;[2,3] though, failure of both helical CT to depict and the reviewer to detect small (< 6-7 mm in diameter) lesions is well known. Overall sensitivity is only 47-69% for such small nodules in clinical practice, even though viewing conditions and specific CT methods differ widely in the published studies. [4,5]

[1.] Department of Radiology / Medicine[2], LUMHS Jamshoro

Correspondence: *Dr.* Adnan Ahmed,
Assistant Professor of Radiology, LUMHS, Jamshoro
Contact No: 0333-2700192
Email: dr.saeedarain786@gmail.com

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Lung cancer screening failures also occur; half of the carcinomas detected on helical CT in one screening program have been existing in retrospect on a preceding screening assessment.[6] Both technical parameters (nodule depiction) and interobserver variability (nodule detection) are important determinants of overall CT sensitivity, although the relative importance of each factor is not well understood. Multidetector computed tomography (MDCT) enables concurrent increased *z*-axis exposure & thinner segment collimation in contrast to single-row-scanner helical computed tomography. Thin segments improve resolution as well as lower the volume averaging from segment-to-segment and must lead to further accurate depiction of small nodules. However, two major factors limit the observer for the detection of such nodules: substantial quantity of axial images is generated, which results in reviewer fatigue whilst interpretation; and, on each thin slice, normal vessels are imitated by nodules in cross-section and vice versa particularly in the central lung zones. [7,8] These contemplations limit apprehension of the real potential of MDCT in detecting the nodules in the lung. New computer-based image processing means can facilitate the full application of substantial volumetric multidetector CT data sets. One example is maximum-

intensity-projection (MIP) imaging, originally expressed by Napel & associates.[9] This tool applies ray projection methods via a mass of predefined axial images; the maximum density point met by the ray passing through the stack is pitched onto the ultimate image. MIP processing keeps a number of benefits: vascular structures come into view as noticeably branching & tubular structures instead of discreet nodules; the MIP piece conserves the resolution intrinsic to the axial images via which it is produced; and quantity of images are markedly decreased in comparison to the axial image set. In numerous earlier studies, researchers have exhibited that the nodules exposure rates of lung via post processing methods for example VR & MIP are higher to those accomplished via traditional transverse section analysis. [10,11] On other hand Peloschek et al. established VR to be better than MIP.[12] Therefore aim of our study was to assess the experience of CT by using MIP compare to VR reconstructions to study small lung nodules on multidetector CT data sets.

MATERIALS AND METHODS

This prospective study was conducted at radiology department of Liaquat medical University Hospital Hyderabad, and mostly cases were referred from medical department with the duration of time from July 2015 to April 2016. All the cases between ages of 20 to 60 years, either genders were selected for the study and all the cases less than 20 years and more than 60 years of the age and having coexisting lung disorder (e.g., interstitial lung disorder, consolidations) and those who were not agree to participate in the study were excluded. 30 patients with having pulmonary metastatic disease were retrospectively identified. Two senior reviewers interpreted all images on a workstation. Contrast agent was IV administrated in all selected cases. The scanning was started when CT decreases in the rising aorta assessed as 120 HU. Individual evaluation of the MIP and VR images was done by well experienced chest radiologist. While individual image evaluation, each pulmonary nodule was manifested via an arrow as well as was recorded on the Performa.

RESULTS

A total of 30 cases were integrated in our study. The mean age of the cases was *52.12 ± 7.33* years. Out of 30 cases male were in majority 24(80%), and 06(20%) were female with male to female ratio was 1:4 as shown in table 1.

Total 334 nodules were detected out of them 276 were detected by VR images and 58 were missed, while no missed nodules were noted by MIP images, therefore MIP images is the significantly more detectable technique for pulmonary nodules detection. P= value 0.001 table2.

Furthermore central nodules were 253 and totally were detected by MIP images, while 40 nodules missed by VR images and 113 were detected, with significant difference P value = 0.001 table 2.

Similarly all the peripheral nodules were also significantly more detected by MIP images, as compare to VR images, as: out of 181 nodules 163 were detected and 18 were missed. P value = 0.001 table 2.

Table. No.1. Demographic traits of cases (n=30)

Variables	Number of patients /(%)
AGE (mean+SD)	52.12 ± 7.33 years
Age groups	
20-40	02(6.66%)
41-60	28(93.34%)
GENDER	
Male	24(58%)
Female	06(42%)

Table No.2: distribution of pulmonary nodules *according to VR and MIP images (n=30)*

Pulmonary nodules	No. of patients /(%)		
	VR images	MIP images	P-value
All nodules			
Detected	276(82.63%)	334(100%)	0.001
Missed	58(17.37%)	00	
Central nodules			
Detected	113(33.83%)	153(45.80%)	0.001
Missed	40(11.97%)	00	
Peripheral nodules			
Detected	163(48.80%)	181(100%)	0.001
Missed	18(5.38%)	00	

DISCUSSION

At a workstation, viewing image stacks of computed tomographic assessments through a constant series rather than reading particular images on hard copies was an untimely most important technologic progression. Though, application of post processing methods, for instance MIP or VR, has been exhibited to enhance pulmonary nodules detection rates in contrast to cine viewing of non post processed axial images.[10-11,13]

In this study the mean age of the cases was *52.12 ± 7.33* years. Out of 30 cases male were in majority 24(80%), and 06(20%) were female. Similarly Peloschek P et al[12]

reported that from selected 20 cases (8 were females & 12 were males and mean age was 56±16 years). In another study of Kawe N et al[14] also found similar findings as from 8 8 case (55males, 33 females; mean age 59 yrs & age ranging from 18 to 81yrs).

In this study total 334 nodules were detected by MIP images out of them 276 were detected by VR images and 58 were missed, therefore MIP images is the significantly more detectable technique for pulmonary nodules detection. P= value 0.001. As well as in numerous preceding studies, researchers have exhibited that the diagnostic rates for lung nodules by the application of post-processing methods for instance VR & MIP are better to those accomplished via typical transverse section examining.[15,16] Diederich et al.[17] contrasted, among others, 15mm & 30mm MIP and established 15mm MIP to be somewhat better. Nonetheless, MIP images were restructured via CT record sets along 5mm &10mm collimation. Peloschek et al.[10] contrasted MIP & VR for just single fixed slice of thickness of 7 mm. As well as Yoneda et al.[12] assessed MIP & VR with a slab of 15 mm of thickness. Gruden et al.[15] contrasted 10mm MIP & 3.75mm axial images since the outcomes of their preceding examinations produced the postulation that 10mm MIP is better than 5 &30mm MIP.

253 central nodules were detected by MIP images, out of them 40 nodules missed by VR images and 113 were detected, with significant difference P value = 0.001. Similarly all the peripheral nodules were also significantly more detected by MIP images, as compare to VR images, P value = 0.001. Similarly Kawe N et al[14] reported that pulmonary nodules sensitivity was better in MIP images as well as MIP was significantly superior to the sensitivities of each further tested methods for both interpreters ($p < 0.001$ each) regardless of nodule size & localization. A greater sensitivity was accomplished via MIP contrasted with VR. P value 0.001.

CONCLUSION

Maximum intensity projection is more useful, less time consuming and best technique, to detect the small pulmonary nodules especially in central lung. Hence MIP reconstructions is most sensitive to detect tiny pulmonary nodules. More studies with big sample size are required to more accurate findings.

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

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Original Article

Nephrotoxic Effects of Omeprazole on Renal Vasculature of Albino Wister Rats By Histopathological Study

Amna Mubeen[1], Muhammad Javed[1] and Nusrat Manzoor[2]

ABSTRACT

Objective: To evaluate the nephrotoxicity of increasing doses of omeprazole on the renal blood vessels by the use of an animal model

Study design: Randomized control trial

Materials and Methods: A total of 45 albino wister rats were procured from the Veterinary University Lahore. The animals were randomly divided into three groups, a control group (n=15) that was given distilled water, 2nd group (n=15) was given omeprazole per oral at a dose of 0.3mg/Kg BD and the 3rd group (n=15) was feed with omeprazole at a dose of 0.6 mg/Kg BD. None of the rats died during the study. The animals were sacrificed after 6 weeks of drug administration and the kidneys were dissected out. Histopathology was done to evaluate the slides under the light microscope for glomerular congestion and atrophy, and congestion of blood vessels and haemorrhage in the interstitium. Judgment standards set were either absence or presence of these parameters.

Results: None of the rats in the control group (n=15) showed any evidence of injury to the kidneys. While in group 2 (n=15) who were given 0.3mg/Kg 60% (n=9) showed glomerular congestion (P value < 0.0001) while glomerular atrophy was noted in 13.33% (n=2). (P< 0.0001). Group 3 were given 0.6mg/Kg equivalent to dose of 40mg omeprazole BD of 70 Kg of human. This group showed glomerular congestion in 86.67% (n=13) (P< 0.0001) while glomerular atrophy was noted in 26.67% (n=4). (P< 0.0001).Histopathology of the interstitium also showed an increasing tendency of injury as the dose of the omeprazole is increased. In group 2 The injury to interstitium was observed in 33.33 % (n=5)(P= P< 0.0001) while in group 3 it was observed in 53.33% (n= 8)(P= P< 0.0001)

Conclusion: It was observed that omeprazole has toxic effects in the blood vessels of the kidney as shown by the glomerular congestion and atrophy along with the hemorrhage and congestion of the renal interstitium. The incidence of these toxic effects increases as the dose of the drug is increased.

Key Words: Nephrotoxicity, Histopathology, Congestion, Atrophy, Omeprazole,

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INTRODUCTION

Proton pump (H^+/K^+—ATPase) inhibitors belong to the group of the drugs frequently used for the treatment of the disorders related to the gastrointestinal tract such as the peptic ulcer, dyspepsia and gastro esophageal reflux disease. [1]

Proton pump inhibitors are considered as safe medicines but the number of the patients using them is continuously increasing and they are also taking it for the prolonged period of time. This trend has compelled to pay the attention to evaluate the potential hazards associated with this therapy. [2]

[1]Department of Anatomy, Sargodha Medical College Sargodha
[2]Department of Obs & Gynae Rai, Medical College Sargodha

Correspondence: Dr. Amna Mubeen, Assistant Professor of Anatomy, Sargodha Medical College Sargodha
Contact No: 0321-6028299
Email: hamnahabib2007@yahoo.com

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Omeprazole belongs to the group of proton pump inhibitors. It was introduced in 1989 and this made a breakthrough in the management of gastrointestinal disorders. Omeprazole is available as capsule of 20mg and 40mg. Powder form of it is also used for intravenous administration.

Charles S.Wingo [3] stated the observation about location of H/K ATPase pumps in the distal uriniferous tubules of kidney. It was found that these pumps are sensitive to omeprazole.

The renal toxicity of the drugs is frequently reported because of the primary role of the kidneys in the plasma filtration. The exact mechanism is unknown but an immunological basis is suspected for this nephrotoxic effect of the omeprazole. The histological examination of the tissue exposed to the drug shows the presence of inflammatory cells, variation of the normal structure and congestion of the blood vessels.[4,5]

MATERIALS AND METHODS

A total of 45 albino wister rats were procured from the Veterinary University Lahore. The rats were 80 – 100

days old weighting 180 – 240 g. The experimental procedure was carried out according to the international, natural and institutional guidelines for the animal care ethical regulations. [6] All the animals were placed in the cages with bar lids to hold the water bottles and feed. They were kept under constant environmental conditions with temperature of 28.0±2.0ºC and humidity (60±10%) under 12 hour light/dark cycles and well provided with food and water The procedure was carried out in compliance with the ethical consideration. [7, 8]

The animals were randomly divided into three groups **(Table 1).** a control group (n=15) that was given distilled water, 2nd group (n=15) was given omeprazole per oral at a dose of 0.3mg/Kg BD and the 3rd group (n=15) was feed with omeprazole at a dose of 0.6 mg/Kg. BD. None of the rats died during the study. Omeprazole used in this experiment was a product of GETZ Pharmaceuticals with the brand name of RISEK having Omeprazole as 20 mg and 40 mg.

Tissue preparation: The animals were sacrificed after 6 weeks of drug administration. The kidneys were dissected out and fixed in 10 % formalin. Tissue blocks were subjected to slide preparation and stained with hemotoxiline and eosine. [9]

Microscopic examination: Histopathologist who was blinded to the drug administration evaluated the slides under the light microscope for glomerular congestion and atrophy, and congestion of blood vessels and haemorrhage in the interstitium. Judgment standards set were either absence or presence of these parameters

Data entry and analysis: The observations were entered by using the MS Excel data sheet. Statistical analyses were performed using MedCal for Windows, version 12.5.0.0 (MedCal Software, Ostend, Belgium).

RESULTS

The sample size was 45, randomly divided into three groups. None of the rats in the control group (n=15) showed any evidence of injury to the kidneys while in group 2 (n=15) who were given 0.3mg/Kg equivalent to a dose of 20mg omeprazole BD of 70 Kg of human, 60% (n=9) showed glomerular congestion (p= P< 0.0001) while glomerular atrophy was noted in 13.33% (n=2) (p= P< 0.0001). Group 3 was given 0.6mg/Kg equivalent to dose of 40mg omeprazole BD of 70 Kg of human. This group showed glomerular congestion in 86.67% (n=13) (p= P< 0.0001) while glomerular atrophy was noted in 26.67% (n=4) (p= P< 0.0001).

Histopathology of the interstitium also showed an increasing tendency of injury as the dose of the omeprazole is increased. In group 2, the injury to intestiitum was observed in 33.33 % (n=5) (P= P< 0.0001) while in group 3 it was observed in 53.33% (n= 8) (P= P< 0.0001).

Table No.1: Table showing detail of animal groups

Group	Status	Dose	Duration of therapy
1	Control	Normal saline	6 Weeks
2	Treated	20 mg B.D	6 Weeks
3	Treated	40mg B.D	6 Weeks

Table No.2: Comparison of the glomerular congestion in control and treated groups. P value is compared to the control

Groups (n=15) In each group	Glomerular					
	Congestion			Atrophy		
	Absent	Present	χ2-test (p- value)	Absent	Present	χ2-test (p- value)
Group 1 (Control) (normal saline)	15	0		15	0	
Group 2 (20mg BD)	6 (40%)	9 (60%)	P< 0.0001	13 (86.67 %)	2 (13.33 %)	P< 0.0001
Group 3 (40mg BD)	2 (13. 33%)	13 (86. 67%)	P<0.0001	11 (73. 33%)	4 (26. 67%)	P< 0.0001

Table No.3: Comparison of the haemorrhage and congested blood vessels in the interstitium. P value is compared to the control

Groups (n=15) In each group	Interstitium		
	Congestion of blood vessels and hemorrhage		
	Absent	Present	χ2-test (p- value)
Group 1 (Control) (normal saline)	15	0	
Group 2 (20mg BD)	10 (66.67%)	5 (33.33%)	P< 0.0001
Group 3 (40mg BD)	7 (46.67%)	8 (53.33%)	P< 0.0001

DISCUSSION

Proton pump inhibitors are one of the commonly utilized agents for the relief of upper gastrointestinal disorders. They are considered to have a safe profile but their continuous use is associated with the health risks. [10, 11, 12]

In our study we have compared the dose related effects of omeprazole on the renal vasculature by using the albino wister rats as experimental animals. The histological observations of the treated group were compared with the control group. As compared with the control group statistically significant toxic effects evident as glomerular atrophy, glomerular congestion, hemorrhage and congested blood vessels in the interstitium (p=0.0001) are observed in all the rats receiving the omeprazole.

The incidence of the injury also increased when the dose of the omeprazole was increased from 0.3mg/Kg to 0.6mg/Kg (equivalent to 20 mg BD to 40mgBD in a

70 Kg of human) the incidence of glomerular atrophy increased from 13.33% (n=2) to 26.67%(n=2), glomerular congestion from 60% (n=9) to 86.67% (n=13), interstitial hemorrhage and congestion in blood vessels from 33.33%(n=5) to 53.33% (n=8).

Most of the previous studies are in favor of the adverse effects of omeprazole on the renal structure. A study done by the Harmark et al. in 2008 stated the relationship between the kidney damage and the use of omeprazole. [13, 14, 15]

Drug induced renal injury is thought to be responsible for 60- 70 % cases. Medicines induced toxic effects on kidney are frequently encountered. The renal vasculature is exposed to a quarter of resting cardiac output. As a result of it, renal structural cells have to bear significant amount of drug and also its metabolic products which can damage the renal tissue. [16, 17] Proton pump inhibitors are considered as the common causative agents. Another study by the Geevasinga in 2006 concluded that acute renal injury is a serious complication of treatment with the omeprazole which may even end up in renal failure. [18, 19]

Omeprazole acts on the proton pumps located in the distal nephron in addiition to the stomach. It was described by the research that omeprazole selectivity inhibits the H^+-K^+-ATPase and CA; enzymes that are in functional coupling indicating that omeprazole has organ specificity. [20, 21] So an immunological basis is suspected for renal histopathological effects of omeprazole. Drug acting as hapten leads to the development of antibodies. Interstitial inflammation produces the toxic lymphokines that are thought to be involved in the glomerular injury. [22] Histopathological study of the renal tissue showed the presence of cellular and stromal infiltrate. The renal interstitium is more prone to the damage because of the compromised peritubular flow allowing greater exposure time to the medicine.[23] Inflammatory mediators cause the endothelial cell activation leading to vascular permeability.[24]

Congested blood vessels and stromal hemorrhages are observed in the study resulting from weakness of renal vasculature structure by the degenerative effects of omeprazole.[25]

CONCLUSION

The aim of the present study was to evaluate nephrotoxic effects of omeprazole on renal vasculature. The observations showed that omeprazole leads to renal impairment by causing inflammation and congestion of the blood vessels. Therefore, its judicial use should be promoted by the clinicians and the common people to avoid its hazardous effects.

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

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Original Article

ORS

Knowledge, Practice and Attitude of Mothers Regarding Oral Rehydration Salt

Usman Ali Faisal, Alia Rubab and Shahzadi Asma Tahseen

ABSTRACT

Objective: To assess awareness about the knowledge; attitude and behaviour of mothers about use of ORS.
Study Design: Cross-sectional study
Place and Duration of Study: This study was conducted at the Pediatric Outpatient Department, Civil Hospital Bahawalpur from May 10, 2015 to July 25, 2015.
Methods and Materials: This study was conducted on mothers who attended Pediatric Outpatient Department, Civil Hospital Bahawalpur with 2 months to 5 years old child having history of diarrhea at the time of visit of the hospital or within the last two weeks. The mothers were interviewed by the one of the researchers using a structured questionnaire about ORS including the demographic data.
Results: There were 200 mothers included in this study. Their mean age ± SD was 27.78± 7.637years. Among the studied mothers 18.5% were having at least secondary school certificate and 90% mothers were house wives. 4.5% mothers did not hear about ORS, 50.5% heard it from medical practitioners, 33.5% from some family member/ neighbours while 16.5% from media. ORS use within the last two weeks was in 44.5% cases of diarrhea. 49% mother gave opinion that it 'stops diarrhea', 29.5% 'does not know' while 21.5% gave opinion that it 'stops dehydration.' 38% mothers knew the correct technique for making ORS solution. 75% mother were in the opinion of giving ORS to the child by 'cup and spoon' in 70 (35%), 34% by cup and 31% by feeding bottles. There were only 34% mothers could prepare ORS correctly. 33% mothers described the correct amount of ORS solution to be given to the child while 41.5% mothers replied to continue giving ORS even if child developed vomiting
Conclusion: The awareness of mothers about the use of ORS is moderate. Further community based research is needed in this respect.

Key Words: Oral rehydration salt; Awareness; dehydration; Diarrhea

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INTRODUCTION

Diarrheal diseases are the second most common cause of mortality among children below five years of age globally. There are about 1.5 million deaths per year due to diarrheal diseases[1]. In Pakistan 100-150 children die every day as a result of diarrheal-related illnesses[2]. Pakistan stands at number six among the highest mortality countries due to diarrheal diseases[1].

The World Health Organization goal is to end childhood deaths due to diarrhea by the year 2025. Most of the cases of diarrhea are simply managed by giving zinc and oral rehydration salt [ORS][3]. The current ORS use is, globally, decreasing the mortality due to diarrhea by 69% and it may reduce by 93% if 100% coverage is achieved[4]. The report published by the United Nations Children's Fund in 2016 mentioned that use of ORS in Pakistan was only in 38% cases of diarrhea[5].

Department of Pediatrics, The Civil Hospital, Bahawalpur

Correspondence: Dr. Shahzadi Asma Tahseen, Senior Registrar, Department of Pediatrics, The Civil Hospital, Bahawalpur.
Contact No: 0300-6848195
Email: asmatahseen013@gmail.com

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Keeping in mind above facts about ORS, this study was planned. The objective of this study was to assess awareness about the knowledge; attitude and behaviour of mothers about the use of ORS. This study will help us in future planning about use of ORS in the community

MATERIALS AND METHODS

This cross-sectional study was conducted on mothers who attended Pediatric Outpatient Department, Civil Hospital Bahawalpur from May 10, 2015 to July 25, 2015 with 2 months to 5 years old child having history of diarrhea at time of visit of the hospital or within the last two weeks. After explaining the study purpose and details, thereof, those who agreed to participate in the study were interviewed by the one of the researchers using a structured questionnaire about ORS including the demographic data. The interview was conducted in English, Urdu or in local languages according to the understanding of mother. The Performa was filled by the same researcher who conducted interview. The mothers who refused for the interview, or whose child was serious enough needing urgent admission were excluded from the study.

The data collected were entered and analyzed by using SPSS version 15. Data were expressed as percentages or proportions.

RESULTS

There were 200 mothers included in this study. Their mean age± SD was 27.78±7.637 years. Among the studied mothers 37 (18.5%) were having at least secondary school certificate, 106 (53%) were having education less than secondary school certificate while 57 (28.5%) did not go to school in their lives. There were 180 (90%) mothers who were house wives, 11(5.5%) were teachers, 8(4%) housemaid and I (0.5%) tailor.

In response to the question, 'did you hear about ORS and if yes then by whom?' 9 (4.5%) mothers reply was 'no' while 101 (50.5%) mothers heard it from some medical practitioners, 67 (33.5%) from some family member/neighbours while 33 (16.5%) from media.

In response to the question, 'have you used ORS within the last two weeks or using it for the present illness?' 89 (44.5%) mothers reply was 'yes' while 111(55.5%) mothers reply was 'no'.

In response to the question, 'what is the role of ORS in diarrhea?' 98 (49%) replied it 'stops diarrhea', 59 (29.5%) replied 'does not know' while 43 (21.5%) replied it 'stops dehydration '.

When asked 'how to prepare ORS solution?' 76 (38%) mothers described the correct technique, 99 (49.5%) the incorrect technique while 25(12.5%) told they 'do not know',

When asked 'how to give ORS to the child?' the response was 'cup and spoon' in 70 (35%), 'by cup only' in 68(34%) and by feeding bottles in 62 (31%) cases.

When asked 'how long can you keep prepared ORS?' 68 (34%) responded '24 hours', 102(51%) responded 'as long as it is not consumed' while 30(15%) responded 'do not know'.

When asked 'how much ORS solution to be given to the child?' 66 (33%) mothers described the correct amount, 99 (49.5%) incorrect amount while 35(17.5%) told they 'do not know'.

In response to question, 'what to do if child develops vomiting?' 83 (41.5%) mothers replied to 'continue giving ORS' 42(21%) replied to 'stop giving ORS' while the answer of 75 (38.5%) mothers was 'do not know'.

DISCUSSION

In the developing countries the incidence of diarrhea remains unchanged and in such cases oral rehydration therapy is the treatment of first choice.

The mean age of mothers in this study was 27.78± 7.64 years while it was 28.7 ± 3.7 in the study conducted in Karachi[6]. The mean age of mothers was 23.68 (±4.89) years in the study done in India[7].

Among the studied mothers 18.5% were having at least secondary school certificate. The other studies done in Rawalpindi[8] and Karachi[6] showed that 29% and 64% mothers were having at least secondary school certificate. The study done in Lahore[9] showed that 56.9% mothers were uneducated. The study conducted in Nepal[10] showed only 1% mother possessed secondary school certificate while 96.8% mothers were having secondary school certificate in the study conducted in South Africa[11].

There were 90% mothers who were house wives in our study. The studies conducted in Rawalpindi (8) and Karachi[6] showed nearly similar results. The study done in South Africa[11] showed that 60.6% mothers were not doing any job.

There were 4.5% mothers who did not hear about ORS, 50.5% heard it from medical practitioners, 33.5% from some family member/ neighbours in our study. The study conducted in Karachi[6] showed that that 49% mothers did not know about ORS while the study done in South Africa[11] showed that 10.6% mothers did not hear about ORS. The main source of information was medical practitioners. The study conducted at Lahore[12] showed that in 73% cases ORS use was advised by medical practitioner/ specialist.

The ORS use was in 44.5% cases in our study. The studies conducted at Lahore[9,12] showed that 49.67% - 84.7% mothers used ORS. The studies done in South Africa[11] and in India[7] showed that use of ORS was 66% and 94.4% respectively.

There were 21.5% mothers who gave the opinion that it 'stops dehydration' and 49% that it 'stops diarrhea' while the study conducted at Rawalpindi (8) showed that 75% mothers gave opinion that it 'stops dehydration'. The study conducted in Nepal[10] and in South Africa[11] showed that only 8.5% and 18.3% mothers, respectively, were in the opinion that ORS 'stops dehydration'.

There were 38% mothers knowing the correct technique for making ORS solution in our study. The studies conducted in Lahore[9,12] showed that 42.8%-62.5% mothers knew the correct technique while the studies conducted in Karachi[6,13] showed that 80%-82% mothers were able to make ORS solution correctly. There were only 6% mothers in Nepal[10] while 34% in South Africa[11] who knew the correct technique.

There were 34% mothers who knew the correct answer to give ORS by cup in our study while 51.8% mothers gave ORS by cup in the study done in South Africa[11].

There were only 34% mothers who gave the correct answer that prepared ORS should be used within 24 hours and similar results were noted in the study conducted in Karachi[6].

There were 33% mothers who described the correct amount of ORS solution to be given to the child in our study. There were only 1% mothers in the study conducted in Nepal[10] while 68.5% mothers in the study done in India[7] who knew the correct amount of ORS to be given.

There were 41.5% mothers who gave the correct answer 'to continue giving ORS even if child develops vomiting'. The study conducted in Karachi[6] showed that 36% and the study done in South Africa[11] showed that 45.8% mothers were in the opinion of continuing ORS therapy even in the presence of vomiting.
There is variable awareness both nationally and internationally and needs improvement.

CONCLUSION

The awareness of mothers about the use of ORS is moderate. Further community based research is needed in this respect.

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

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Original Article

Retinopathy

Frequency of Retinopathy in Newly Diagnosed Diabetes Mellitus Type II Patients

Shamsullah Bazai[1], Shahid Mahmood[2] and Rehan Anwar[3]

ABSTRACT

Objective: To record the frequency of retinopathy in newly diagnosed diabetes mellitus type II patients.
Study Design: Cross Sectional survey
Place and Duration of Study: This study was conducted at the Department of Ophthalmology, Helper's Eye Hospital, Quetta from 1st July 2015 to 31st December 2016.
Materials and Methods: A total of 200 newly diagnosed Type II diabetes mellitus patients of both gender and age between 30-65 years were enrolled in the study. Fundoscopy was performed by single consultant ophthalmologist to avoid any biasness while diagnosing retinopathy. The frequency of retinopathy in cases with newly diagnosed diabetes mellitus type II was noted.
Results: In our study, out of 200 cases, 80%(n=160) were between 30-50 years of age while 20%(n=40) were between 51-70 years of age, mean age was 47.13±6.10 years, 55% (n=110) were male and 45% (n=90) were females, 19.5%(n=39) had diabetic retinopathy in newly diagnosed cases of type II diabetics.
Conclusion: Frequency of diabetic retinopathy shows a significant incidence in type 2 diabetes mellitus, these findings will be helpful for timely management of the morbidity for saving our patients from visual loss.
Key Words: Type II diabetes mellitus, Newly diagnosed, Frequency, Diabetic retinopathy

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INTRODUCTION

Diabetes mellitus is known as one of the chronic diseases; 1.82 out of every 1,000 young subjects are suffering with this disorder.[1] Pakistan stands at 7th position among those countries with the highest number of hyperglycemic cases.

The estimation of diabetics in our country was 6.3 million in 2007 and it was projected as 11.5 million by 2025 and it will improve the ranking in IDF list by reaching at 5th number. It also has association with micro-vascular complications, including diabetic retinopathy (DR). It is one of the major causes of visual loss in cases between the age of 20-60 years of age while it is found present in >70% of cases with diabetes mellitus type 2 who survived for more than two decades with this disease.[3]

In Western world, diabetic retinopathy is estimated between 4.7 to 13.3% of the partial sight and blind registered population.

1. Department of Ophthalmology, Bolan Medical College/Helper's Eye Hospital, Quetta
2. Department of Ophthalmology / Medicine[3], Khawaja Mohammad Safdar Medical College, Sialkot

Correspondence: Dr. Shamsullah Bazai, Associate Professor, Department of Ophthalmology, Bolan Medical College/Helper's Eye Hospital, Quetta
Contact No: 03337801470
Email: drshamsullahbazai@gmail.com

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The retinopathy is steadily progressive and advances from mild to moderate abnormalities then it advances to severe non-proliferative diabetic retinopathy and then lastly proliferative retinopathy.

This morbidity may ends up in haemorrhage of retina, retinal detachment, glaucoma and lastly blindness. Various factors include types and diabetes is identified as an element for the development of diabetic retinopathy and its progression.

Duration and types of diabetes mellitus, gender, age of the patients, glycosylated haemoglobin, BMI, hypertension, smoking and positive micro-albuminuria are included as risk factors of this morbidity.[4]

Increasing evidence also indicates that after 15 years with diabetes, around 2% of cases develop blindness, and around 10% may become visual handicapd.[5-6] Approximately all cases with type1 diabetes mellitus and >60% with type 2 during their first two decades of disease, have retinopathy irrespective of their control of glycemia.

The rate of visual loss is 25 times higher in diabetic patients. Among numerous markers of retinopathy, glycosylated hemoglobin level is an important factor. Vast majority of the patients remain undiagnosed or not diagnosed for retinopathy, however, this study was planned with the view that variability also exists regarding frequency of diabetic retinopathy in newly diagnosed diabetes mellitus in data on DR nationally and internationally, however, this trial was aimed to reassess the frequency of diabetic retinopathy in newly diagnosed type II diabetics, the results of our study will be helpful for timely management of the disease.

MATERIALS AND METHODS

In this cross Sectional survey, we enrolled 200 newly diagnosed Type II diabetes mellitus patients of both gender and age between 30-65 years. We excluded those cases already diagnosed with diabetic retinopathy. This study was conducted in Ophthalmology Department, Helper's Eye Hospital, Quetta from 1st July 2015 to 31st December 2016. An informed consent of the patients was obtained to include their data in the study. Demographic information like name, age, gender & address were noted, patient's detailed history about diabetes mellitus was asked and fundoscopy was performed by single consultant ophthalmologist to avoid any biasness for diagnosis of retinopathy. The frequency of retinopathy in cases with newly diagnosed diabetes mellitus type II was noted, all this information was taken on a proforma. SPSS 16.0 was used to compute the data of this study.

RESULTS

In our study, out of 200 cases, 80% (n=160) were between 30-50 years of age while 20% (n=40) were between 51-70 years of age, mean age was 47.13±6.10 years. There were 55% (n=110) were male and 45% (n=90) were females, 19.5%(n=39) had diabetic retinopathy.

Table No.1: Frequency and percentage of the patients

Variable	Number	Percentage
Age		
30-50	160	80.0
51-70	40	20.0
Gender		
Male	110	55.0
Female	90	45.0
Diabetic retinopathy		
Yes	39	19.5
No	161	80.5

DISCUSSION

According to World Health Organization(WHO) data, our country has 5.2 million diabetic patients, and this magnitude is forecasted to increase and reach upto 5th highest in the world by the year 2030.[7] The frequency of diabetic retinopathy in our setup was required to be re-evaluated so that timely management of the disease may be possible by setting a regular criteria of follow up to save our populations from this disability.

Majority of the patients in our study were between 30-50 years i.e. 80%(n=160) and 47.11±7.36 was mean age of the patients, it is in accordance with a local study conducted at Karachi recorded 58.32% of the cases between 30 to 40 years, mean±sd was 42 years.[8]

In our study, 55% of the cases were male and 45% were females, these findings are similar to Agarwal et al recorded male cases in (60%) and female in 40%.[9]

We recorded 19.5% (n=39) of the cases having diabetic retinopathy, these findings are comparatively slightly higher than reported in other trials. Agarwal et al[9] found 11.71% of the cases with diabetic retinopathy in newly diagnosed type II diabetic, which is comparable. Another study by Wahab and others 15% of the cases were having diabetic retinopathy within 60 days of diagnosis of type 2 diabetes mellitus(DM), this data is also near to our results.[10]

Many other trials are showing variant incidence; Abdollahi and co-workers[11] recorded 13.8%, while Rema and colleagues reported these findings as 5.1% and 7.3% respectively.[12,13] Klein et al recorded 10.2% cases of diabetic retinopathy in newly discovered type 2 diabetic cases in Beaver Dam Eye Study. Kohar and associates[14] reported 39% prevalence of retinopathy.

Two other studies conducted in Australia recorded 14%-20% diabetic retinopathy in newly diagnosed type 2 diabetics.

The variation in the literature regarding retinopathy in newly discovered type 2 diabetics might be due to the fact of variation in time duration between onset and detection of DM.

CONCLUSION

Frequency of diabetic retinopathy shows a significant incidence in type 2 diabetes mellitus, these findings will be helpful for timely management of the morbidity for saving our patients from visual loss.

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

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Original Article

Coronary Artery Disease

Frequency of Modifiable Risk Factors about Coronary Artery Disease in an Urban Female

Malik Tayyab Hussnain[1], Shehzad Aslam[2], Muhammad Khan[3], Syed Sultan Haider[4], Asma Abdul Razzaq[5], Shahid Abbas[6] andAamir Nazir[7]

ABSTRACT

Objective: To determine frequency of modifiable risk factors about coronary artery disease in an urban female population of Sargodha city of Punjab province of Pakistan.
Study Design: Descriptive / cross sectional study.
Place and Duration of Study: This study was conducted at the urban female population of Sargodha city of Punjab province of Pakistan from March, 1st to 30th 2016.
Materials and Methods: This study was carried out to identify frequency of modifiable risk factors about coronary artery disease in an urban female population of Sargodha city. All 100 married female apparently healthy participants; 25-60 years of age were included.
Results: The mean age of subjects was 36.02±10.02 years. The frequency of smoking (27%) was expressively advanced in study population, sedentary lifestyle (19%) obesity (25%), use of salt (16%) and use of fat (13%) respectively.
Conclusion: The current research concludes a reduced information related to modifiable threat aspects regarding coronary artery disease in the urban feminine populace. Consequently, there is a speedy prerequisite to initiate actions to educate peoples of this group in relation of changeable risk features so that those at high risk for upcoming patients of controllable coronary artery disease can be cope[d].
Key Words: Female, Modifiable risk factors, Urban populace.

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INTRODUCTION

Coronary artery disease is considered as a solitary and sole reason and the utmost collective causes of mortality and morbidity in the World together developed and developing nations. It is an important origin of loss, and its foremost influence in death is intensifying.[1] Majority of these distress from coronary artery disease go to the lower middle socioeconomic section of the people.

[1.] Consultant Physician, Mubarak Medical Complex, Sargodha.
[2.] Department of Cardiology, Sargodha Medical College Hospital, Sargodha.
[3.] Consultant Physician, DHQ Teaching Hospital Sargodha.
[4.] Medical College Lahore.
[5.] Department of Radiology, Niazi Medical Complex, Sargodha.
[6.] Department of Cardiology, Faisalabad Institute of Cardiology Faisalabad.
[7.] Department of Medicine, Sargodha Medical College Hospital, Sargodha.

Correspondence: Dr. Shehzad Aslam, Assistant Professor; Cardiology, Sargodha Medical College Hospital, Sargodha
Contact No: 0300-9603946
Email: dr_shehzad_aslam@yahoo.com

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The comparative threat of emerging coronary artery ailment in Pakistani population is premier in initial eternities. A research showed in a metropolitan part of Pakistan that concluded that individuals of middle age or older had a stroke. The average age of stroke was 50 years or 10 years or 10 years younger than in Western populaces.[2] The occurrence of Coronary artery disease is expected to intensification more on behalf of fast development and its associated existence variations, with modifications in nutrition, and lack of exercise.[3] Pakistani rsearchres[4] have reported a teenager, who grieved a cardiac problems, excluding for low levels of high density lipoprotein and slightly elevated homocysteine intensities. Generally, a third of Pakistani citizen above of 45 years have elevated blood pressure.[5] Typically tobacco berri/chillum/cigar/cigarette/hukka smoking, practice of using ghee, vegetable fat in cooking, elevated serum lipid are proved as evidence for such menace in the community especially young adults.[6]

In elevation of levels of homocysteine is conjoint and reflects very deprived dietetic practices such as not eating additional fruits and vegetal as well as burning and profound scorching that terminates maximum of the nutrients. Smoking is the maximum public menace and vibrant between the population as whole. In spite of its excessive popularity, awareness regarding coronary artery disease hazard issues is low.[7] Information about

coronary artery disease and its influencing characteristics are an imperative explanation for an individual to contrivance as social changes for coronary artery disease avoidance. Nearby conspicuous breaches in information of coronary artery disease, its menace influences, and symptoms in our populace resulting in inadequate precautionary behaviour patterns. Didactic courses are immediately essential to develop the close considerate of coronary artery disease in ourcommunity.[8]

The actual purpose was conducting this survey to determine frequency of knowledge of modifiable risk factors for Coronary artery disease in an urban female population of city Sargodha of Punjab province of Pakistan, to identify facts and figures to create awareness strategies among the group to control and overcome the burden of such kind of life threatening and curable disease. Avoidance and resistor of the risk factors for Coronary artery disease can decrease the proportion of Coronary artery disease. This needs changes in lifestyle and behaviour of the people individually and at the community level generally.

MATERIALS AND METHODS

It was a descriptive cross sectional study was conducted from March, 1st to 30th 2016. A total of 100 female respondents from urban population of Sargodha city were approached after written consent for interviewing about modifiable risk factors regarding Coronary artery disease. These respondents were selected through using 'non-probability' convenience sampling technique. Apparently healthy person living in area of city Sargodha, age 25 to 60 years and married female gender were included. Known to have coronary artery disease was excluded.

RESULTS

It was revealed that knowledge of modifiable risk factors about coronary artery disease in an urban female population of Sargodha city; Pakistan found as: The mean age of subjects was 36.02±10.02 years. The frequency of smoking (27%) was significantly higher in study population, sedentary lifestyle (19%) obesity (27%), use of salt (16%) and use of fat (13%) respectively (Table 1).

Table No.1: Frequency of risk factors

Risk Factor	Number	Percentage
Obesity	25	25.0
Smoking	27	27.0
Use of salt	16	16.0
Use of fat	13	13.0
Sedentary lifestyle	19	19.0

DISCUSSION

Our inquiry scrutinized the occurrence of modifiable threats and elements for Coronary artery disease in female study populace were as, smoking was significantly higher (27%), sedentary lifestyle (19%), obesity (25%), use of salt (16%), and use of fat (13%). The existing outcomes can be matched with the findings in the study that revealed 46.2% of populace were overweight. Related outcomes were initiated by a work conceded in India among people that shown overweight in 47%, as peril factors in the study group. Another study by Mohan and Deepa[9] exposed the overweight was 60.2%.

CONCLUSION

There is an instant requirement to increase consciousness amongst the overall populace about these danger aspects of such disease complex, so we have to encourage them for accurate nutrition and physical exercise, and at the same time improve strategies for transmission and protective satisfying events to pinpoint and accomplish community at great menace for future coronary artery disease.

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

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Original Article

Acute Appendicitis

The Combined Role of Alvarado Score and Ultrasonography for the Diagnosis of Acute Appendicitis

Zulfiqar Ali[1], Wasfa Gul[2], Allauddin[3] and Haroon Javaid Majid[4]

ABSTRACT

Objectives: Objective of the study was to evaluate use of Alvarado score and ultrasonography in diagnosis of acute appendicitis.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at Department of Surgery along with Department of Radiology at Shaikh Zayed Hospital Lahore from 1st January 2013 to 31st August 2013.

Materials and Methods: 250 patients of Alvarado Score were enrolled for the diagnosis of acute appendicitis attending out-patient, accident & emergency departments.

Results: There were 184 (74%) were males and 66 (26%) were females with mean age of 35.27±12.57 years. One hundred and seventy patients had anorexia while 76 patients had no anorexia. 49.6% patients while in 50.4% were reported anorexia. Right iliac fossa was noted in all patients. 95% patients had rebound tenderness 203 patients have elevated temperature.

Conclusion: Alvarado score is a simple and reliable non-invasive diagnosis modality without any extra cost and complication. It has also proved to be handy for our peripheral hospital settings where backup facilities not available. By application of Alvarado scoring system with non-invasive ultrasonography improves diagnosis accuracy by reducing negative appendicectomies hence reducing complications rate in our settings.

Key Words: Acute appendicitis, Alvarado score, Ultrasonographic and histopathology findings

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INTRODUCTION

The appendix is a worm like extension of the cecum. It is a structure without apparent function, although it is thought to be important cause of morbidity & mortality. It is process of treatment of appendix developed during the last about 80 years but knowledge of the disease is more older than a century back. Appendicitis is inflammation of the inner lining of the vermiform appendix that spreads to its other parts. Surgical conditions may occur for several reasons due to any infection of the appendix but the most common step is the obstructions of the appendiceal lumen.[1]

Appendicitis is also one of the most common surgical emergency and one of the most frequent cause of abdominal pain. It is the most frequent perform operation about 10% of all emergencis of the abdominal operations.[2] Being a very common disease condition with life time prevalence of 7 to 8%.[3,4] Its incidence is 1.5-1.9/1000 in male and female population[5]. Therefore much efforts need to be directed towards early diagnosis and the earliest possible intervention. The diagnosis of acute appendicitis is based mainly on patients medical history based on clinical examination and few laboratory investigation like white blood cell counts.[6] The diagnosis might be obtained at surgery and after histopathological examination of the surgical specimen.[7] The diagnostic accuracy in acute appendicitis (AA) has been improved by computer aided diagnosis, laparoscopy, computerized tomography scanning and even radioisotope imaging.[8,9] The surgical cause of acute abdomen to be the prompt diagnosis rewarded by marked decrease in morbidity and mortality. The decision to perform surgery is based mainly on clinical evaluation along with laboratory data. Therefore diagnostic errors are common, resulting the frequency of perforation of 20%, negative laparotomy rate ranging from 2-30%.[10]

In order to improve the diagnostic accuracy of acute appendicitis ultrasound and computed tomography include clinical aids ensuing in reduced unnecessary

1. Department of Surgery, Salmaniya Medical Complex, Kingdom of Bahrain
2. Department of Radiology, Mohtarma Benazir Bhutto Shaheed Medical College Mirpur Azad Kashmir
3. Department of Surgery, Bolan Medical College Quetta
4. Department of General Surgery, Shaikh Zayed Hospital, Lahore

Correspondence: Dr. Zulfiqar Ali, Surgical Specialist, Department of Surgery, Salmaniya Medical Complex, Kingdom of Bahrain.
Contact No: +973-35902498
Email: zulfi007@hotmail.com

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laparotomy rates.[11,12,13] While ultrasound in expert hands can achieve a high degree of accuracy, its dependence on the operator may result in significant inter-observer variability in the diagnosis of acute appendicitis. During the past few years, there has been a growing trend toward the use of formal probabilistic reasoning or quantitative data as a guide to clinical decision-making.[14]

The negative appendicectomy of 20 to 40% have been reported in literature search and most of the surgeon report rate of 30% as inevitable in our settings.[11] Misdiagnosis, delay in surgery usually lead to complication like perforations and peritonitis among patients suffering from this condition.[15] Incorrect diagnosis of these patients of appendicitis often subjects the patient to unnecessary laparotomy surgical procedures. Study results by Flum et al from USA, the length of patients hospital stay, complications and mortality came out to be statistically significant higher for the cases of negative appendectomy.[16,17] The vermiform appendix by graded compression sonography technique seem is helpful for detect and diagnosing acute appendicitis with sensitivity and specificity 86% and 81% respectively. Various systems have been devised to aid in the diagnosis.[18,19]

The 88.8% sensitivity with specificity of 75%,[20] while PPV of Alvarado score to be 84.3%[15] 88%[21] 95.2%[22] and 98.1% respectively.[23] By the experienced hand practitioners ultrasonography have reported sensitivities of 75 to 90% with specificities of 86 to100% Accuracies of 87 to 96% with positive predictive value of 91to 94% and a negative predictive value of 89 to 97% for diagnosis of acute appendicitis.

There are some other scoring systems like Ramirez and Dues, the Alvarado system rely upon on patients clinical history, their physical examinations, some lab investigation and is quite easy to use as compared to any other system. Where decision making of the acute appendicitis is difficult radiological investigation is not of much help through ultrasonoghraphy and laparoscopy and C.T scan may be carried out.[24]

MATERIALS AND METHODS

This cross sectional study was carried out from 01-01-2013 to 31-08-2013 at Departments of Surgery and Radiology, Shaikh Zayed Hospital Lahore. A total of 250 patients of Alvarado Score for diagnosis of acute appendicitis presenting from our out-patient and accident and the emergency departments were enrolled. The study subjects were explained the procedures and their consequence of our study. Adult patients were our in the study subjects.

RESULTS

The continuous variable like age, its mean and standard deviation were 35.27±12.57 years and there were males 184 (74%) and females 66 (26%) with 1.92:1 male to female ratio. There was anorexia among 174 study subject with its percentage 70% while 76 with its percentage 30% had no symptom. Out of total subjects 124 (49.6%) had Nausea and vomiting while 126 (50.4%) had no symptom of nausea or vomiting. Tenderness in right iliac fossa was found in all patients. 236 (95%) patients have rebound tenderness. Elevated temperature was observed in 203 with percentage of 81%. Among 220 (88%), the leukocytosis >10,000 cells/L was observed in only 117 (47%) patients with white cell count.

The score of appendicitis, 8 (3%) had score 5, 13 (5%) had score 6. 127 (51%) had 7-8 score and 102 (41%) patients who had score 9-10 (Table 4). Two hundred and thirty patients (92%) had appendicitis and 20 (8%) had no ultrasound finding of appendicitis Table 5). Two hundred forty one patients (96%) had acute appendicitis and 9 patients (4%) had normal appendicitis (Table 6).

Table No.1: Frequency of age (n=250)

Age (years)	Frequency	Percentage
< 20	29	12.0
21–40	139	55.0
41–60	77	31.0
> 60	5	2.0

Table No.2: Frequency of genders

Sex	Frequency	Percentage
Male	184	74.0
Female	66	26.0

Table No.3: Frequency of Alvarado score

Alvarado Score variable	Patients Score		
	0	1	2
Anorexia	76 (30%)	174 (70%)	-
Nausea and vomiting	126 (50.4%)	124 (49..6%)	-
Tenderness in right iliac fossa	-	-	250 (100%)
Rebound tenderness	13 (5%)	236 (95%)-	-
Elevated temperature	47 (19%)	203 (81%)	-
Leukocytosis >10,000 cells/L	21 (8%)	9 (4%)	220 (88%)
Shifting of white cell count to left	133 (53%)	117 (47%)	-

Table No.4: Frequency of total score of patients

Patient's score	No.	%age
5	8	3.0
6	13	5.0
7	45	18.0
8	53	21.0
9	57	23.0
10	74	30.0

Table No.5: Frequency of acute appendicitis on ultrasonography

Acute appendicitis	No.	%age
Yea	230	92.0
No	20	8.0

Table No.6: Frequency of Histopathology Finding of Patients

Histopathology findings	No.	%age
Acute appendicitis	241	96.0
Normal or chronic appendicitis	9	4.0

DISCUSSION

Good clinical acumen remains the mainstay of correct diagnosis of acute appendicitis.[25,26] In the present study the mean age was 35.27±12.57 years between 15-70 years. Khan[27] reported mean age was 20.2 years, Siddiqui[28] reported 28.7±11.9 years, Soomro[24] reported 20.47 years, Shah [29] reported 20.6 years and Almulbim[30] reported the mean 21.7 years which are comparable to the present study.

In the present study 184 (74%) males and 66 (26%) females with a male to female ratio was 1.92:1. Khan et al[27] reported male to female 1:1.4. Soomro[24] reported 150 (67%) male and 77 (34%) were female. Talukder[31] also reported that males were more susceptible than females with a male-female ratio of 1.38:1. Almulbim[30] 61% patients were male and 39% patients were female. The results are comparable to the present study. Anorexia in 147 (74%) patients, pain in right iliac fossa in all (250) patients, elevated temperature in 203 (81%), nausea and vomiting in all patients, rebound tenderness in 236 (95%) patients and Leucocytosis >10,000 cells/L, raised in 220 (88%) cases were recorded in the present study. Soomro[24] reported that pain in right iliac fossa (67.8%), fever (66.9%), nausea and vomiting (49.7%) and anorexia (62.7%). Of the signs in the patients undergoing surgery, tenderness in right iliac fossa was found in 170 (91.4%) cases, rebound tenderness in 149 (80.54%) cases, elevated temperature in 156 (84.32%) cases. Regarding investigations, TLC was raised in 140 (75.67%) cases.

Cobben[32] stated that the right lower quadrant pain, and vomiting occurs in only 50% of cases. Nausea is present in 61-92% of patients; anorexia is present in 74-78% of patients. Vomiting that precedes pain is suggestive of intestinal obstruction, and the diagnosis of appendicitis should be reconsidered. Old[33] reported that abdominal pain in 99-100% patients, right lower quadrant pain/tenderness in 96% of patients, anorexia in 24–99%, nausea 62–90% of patients, vomiting 32–75%, migration of pain to right iliac fossa in 50% of cases and rebound tenderness in 26% of patients.

In a study conducted in United States that ultrasound (US) had a sensitivity of 68.4%. The negative appendectomy rate in patients with positive ultrasound was 5.5%. So, a "first-pass" approach using ultrasound first and then computed tomography scan if ultrasound is not diagnostic may be desirable in some institutions.[34] In another retrospective study, carried out on 1,228 children with suspected appendicitis during 2003-2008 that children with suspected acute appendicitis, ultrasound first and then computed tomography scan was highly accurate (sensitivity, 98.6%; specificity; 90.6%). The negative appendicitis computed tomography rate was 8.1% (19 of 235 patients). The missed appendicitis rate was less than 0.5% (1 of 631 patients).[35] Poortman et al stated that primary graded-compression ultrasound and complementary multidete computed tomography or computed tomography scanning, yields a high diagnostic accuracy for acute appendicitis. Although ultrasound is less accurate than computed tomography scanning, it can be used as a primary imaging modality and avoids the disadvantages of computed tomography scanning.[36]

In the present study, 230 (92%) patients had acute appendicitis. Two hundred and forty one patients (96%) had acute appendicitis on histopathology and 9 (4%) patients had normal or chronic appendicitis which comparable to other study. Soomro[24] reported in his study inflamed appendix (58.37%), perforated appendix (24.32%), appendicular mass (4.3%) and gangrenous appendix (9.18%). In 7 cases (3.78%), the appendix was found normal, resulting in a negative appendicectomy.

In the present study, Alvarado scoring system showed that the accuracy of the diagnosis was very dependable and acceptable in higher scores but patients with lower scores should be under observation. Those patients who have 8 to 10 scores are almost certain to have appendicitis and they should undergo operation immediately, 5 to 7 scores indicate probable appendicitis and 4 or less scores are very unlikely but not impossible to have appendicitis and they can be discharged from hospital after giving initial conservative treatment.

CONCLUSION

The finding of acute appendicitis according to Alvarado score is a simple, reliable, non-invasive and safe diagnostic modality without extra expenses and complication.

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

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Original Article

Traditional Teaching Methodology

Reaffirming the Importance of Traditional Teaching Methodology from the Perspective of Faculty of Anatomy

Iram Tassadaq[1], Ruqqia Shafi Minhas[1] and Farheen Shaukat[2]

ABSTRACT

Objective: To reaffirm the importance of cadaveric dissection and prosected specimens in imparting knowledge of Anatomy to medical students from the perspective of faculty of anatomy.

Study Design: Cross sectional study

Place and Duration of Study: This study was carried out in the Anatomy Department of Fazaia Medical College, Islamabad from January 2016 to March 2016.

Materials and Methods: Data was collected from100 faculty members working in the Anatomy department of medical colleges of Rawalpindi and Islamabad having at least 2 years of teaching experience.

Results: In spite of facing certain limitations, 60 % of the faculty considered cadaveric dissection as an indispensable tool for teaching Anatomy while 70% of the participants were of the view that combination of dissection and prosection is the best technique.

Conclusion: The importance of traditional teaching methods in imparting knowledge of Anatomy cannot be undermined.

Key Words: Dissection, prosection, faculty

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INTRODUCTION

Anatomy has always been a backbone and cornerstone of medical education[1, 2] Medical practitioners use their knowledge of Anatomy to examine a patient, formulate differential diagnosis, undertake investigation and to perform a procedure.[3, 4].

The subject of Anatomy is taught traditionally either through dissection on cadavers or using prosected specimens. Dissection is the exploration of a embalmed human cadaver for the identification of structures present in the human body with the objective of learning of gross anatomy by visual and tactile experience.[5] In the process of 'dissection' students are actually involved in performing it themselves while in 'prosection' the students use the specimens dissected and preserved by embalmers and curators[6].

Now we have entered a time of paradigm shift, supported by new technologies where in addition to dissection and prosection, models and audiovisual techniques are also being incorporated for teaching Anatomy[7].

[1.] Department of Anatomy, Fazia Medical College, Islamabad.
[2.] Department of Anatomy, Margalla Institute of Dentistry, Islamabad.

Correspondence: Dr. Iram Tassadaq, Associate Professor, Department of Anatomy, Fazia Medical College, Islamabad.
Contact No.: 0333-5397573
E-mail: dociramtassaduq@gmail.com

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In the Anatomy departments of numerous medical colleges worldwide prosected specimen and models along with newer teaching modalities are being used as their primary learning tool to compensate for scarce resources and limited teaching time[8].

Many studies about the teaching modalities of anatomy have been conducted from student's perspective[9, 10.] We conducted this study to know about the opinion of teaching faculty of anatomy regarding the importance of dissection or prosection to convey knowledge. The purpose of our study is to assess the importance of cadaveric dissection as a basic teaching tool and to know whether prosected specimens can suffice it or not.

MATERIALS AND METHODS

Information was collected from the faculty of Anatomy having teaching experience of at least two or more than two years by using a specially designed questionnaire. The instructors having less than two years of teaching experience were excluded. The faculty was briefed about the questionnaire & asked to respond freely and fearlessly. They were informed that the information furnished by them is for the research and evaluation purpose only and will be absolutely confidential.

RESULTS

The questionnaire was given to the faculty in medical colleges of Rawalpindi and Islamabad region. The group comprised of 100 persons and all of them responded to the questionnaire. The questions and their response can be seen in the table.

Teaching on prosected specimen is considered to be a substitute for dissection by 51.7% of the faculty members while 48.3% were against this idea of complete replacement.

A hands on training on cadavers was supported by 62% of the group while only 38% of the participants gave opinion in favor of prosected specimens.

Dissection was considered as an indispensable tool by 60% of the faculty members. 72% of the faculty was of opinion that non availability of the cadavers and high maintenance cost of mortuary is the main reason for switching to prosected specimens and models.

Dissection is an important tool to enhance thinking in a logical manner as perceived by 75% of the faculty. Combination of dissection and prosection is considered the best teaching modality by 70% of the instructors.

Physical effects like nausea, allergies and lacrimation were experienced by 91.7 % of the contributors while only 45% of the teachers faced psychological problems.

Dissection was not acceptable ethically for 65% of the members but in spite of physiological, psychological and ethical issues 60% were of the opinion that it is still an essential method to teachanatomy.

Table No.1: Questionare

No.	Question	Agreed (%age)	Disagreed (%age)
1	Can teaching on specimen is a substitute to cadaveric dissection?	51.7	48.3
2	Do you think that actual hands on training on cadaver dissection gives better results than demonstration of prosected specimen?	61.7	38.3
3	Do you think that cadaver dissection is still considered important and indispensable in Anatomy learning?	60	40
5	Is nonavailability of cadavers having an impact on switching to new teaching modalities?	71.7	28.3
6	Do you think that dissection enhances the skill of thinking in a logical manner?	75	25
7	Do you think combination of both techniques is the best to teach Anatomy?	70	30
8	Were there any physical effects dissection?(Lacrimation, Nause	91	9
9	Were there any psychological effects of dissection?(Anxiety, Depression)	45	55
10	Do you think that cadaver dissection for anatomical learning is ethically acceptable?	35	65

DISCUSSION

Anatomy is obviously essential for surgeons but also has value for anyone who performs an invasive procedure on a patient; carries out emergency procedures; examines radio-logical imaging; performs a physical examination of a patient; refers a patient to another doctor; or explains a procedure to a patient. These tasks are common to all branches of medicine. One can perform all theseprocedures without having underlying knowledge of anatomy by following protocols and international guidelines. However learning and performing any procedure without baseline knowledge cannot be considered as a proper approach for adequate training of future doctors.

Dissection has been utilized as the best means for teaching anatomy to undergraduate medical students as shown in a study done by Omana et al in 2005.[11,12] Most of the participants (51.7%) in our study were in favor of dissecting cadavers as compared to prosected specimens for teaching Anatomy. This is in accordance with previous work done by Estai and Bunt in 2016[13]

Majority of the participants (91%) experienced physical effects like nausea, allergies and lacrimation while 45% suffered psychological effects like anxiety and depression in performing dissection. Though the faculty went through these difficulties, still 60% of them are in favor of dissection to be used as a major tool to teach anatomy. The medical students went through same difficulties as reported in a research work done by Huma Musarrat Khan[14].

A study done by Dinsmore et all regarding the modality preferred by students to learn anatomy demonstrated that most of the students liked prosected specimen rather than dissection on cadaver[15]. As our study was from the point of view of faculty it showed that most of them (61.7%) were in favor of performing dissection on cadavers.

Korf et al reinforced that dissection is necessary and indispensable for teaching anatomy to medical students in a paper published in 2008[16.] Our results augmented his view as most of the faculty (60%)considered dissection essential for imparting knowledge of anatomy.

Our research showed that 75% of the instructors wereof the opinion that logical thinking is enhanced by dissection in accordance to the previous work done by Izunya et al in 2010[17].

Our data suggested that dissection is an indispensable tool to train medical students in accordance to a study done by Deepa Somnath in 2015[18]. Dissection was ethically unacceptable to 65% of the group members , still they emphasized the importance of dissection. This is in accordance with the previous work done by Morar et al in 2008 and Saha et al in 2015.[19 20]

Our study mainly revolved around the comparison of dissection and prosection. Further research is

recommended to take the opinion of faculty whether dissection can be replaced by modern teaching modalities like models and audiovisual supports.

CONCLUSION

Till to date, no single teaching tool has been found to achieve all curriculum requirements. The best way to teach modern anatomy is by combining multiple resources for the benefit of students. However our study reconfirmed the dissection as an important tool for teaching Anatomy but combination of dissection and prosection is preferred more.

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

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Original Article

Frozen Shoulder Treatment

Functional Outcome of Frozen Shoulder Treated with Physiotherapy VS Intrarticular Injection of Corticosteroid

Abbas Memon, Shakeel Ahmed and Mehtab Ahmed Pirwani

ABSTRACT

Objective: To assess the functional outcome of frozen shoulder when treated with physiotherapy vs intrarticular injection of corticosteroid the department of Orthopaedics Surgery of LUH Hyderabad/ Jamshoro

Study Design: Observational / comparative study.

Place and Duration of Study: This study was carried out in the Orthopaedic Department of LUMHS, Hyderabad/ Jamshoro from August 2013 to March 2014.

Materials and Methods: In this study, 100 cases between age of 40-70 years selected after diagnosis of frozen shoulder or adhesive capsulitis. All the cases having pain into shoulder moving function for minimum 3 months of period, both gender and detected adhesive capsulitis or frozen shoulder were included in the study. Later on, subjects were isolated at random into groups, 48 cases of group A were underwent intrarticular injection of corticosteroid and the 52 cases of group B were underwent physiotherapy management. Result assessed at 4 and 8 weeks follow up continue at 16 weeks.

Results: In this study mean age was found 55.23±9.8 years. In this forth week follow up visit we found more improved patients 29/69% in Interarticular Injections group out of 42 cases, and in 23/50.5% cases found improvement in physiotherapy group out of 45 cases. Similarly 4th and 8th week follow-up on 16th week also some cases were missed, but on this follow up visit we found physiotherapy is the superior than Interarticular Injections group. As well as in this 16th week follow up visit we found improvement in the majority of patients 30/81.0% in physiotherapy group out of remaining total 37 cases, and in 17/58.6% cases found improvement in Interarticular Injections group out of remaining 29 cases.

Conclusion: Physiotherapy has better result in reduce pain and range of movement (ROM) exercise than Interarticular injections of cortisone plus home exercise in the long time.

Key Words: frozen shoulder, Physiotherapy, Interarticular injections of cortisone

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INTRODUCTION

The frozen shoulder called as adhesive capsulitis too, is a state where shoulder joint turn out to be extremely stiff, tight & painful. Additionally, joint of shoulder also inflames, which eventually causes pain in shoulder as well as limited ROM of shoulder within capsulitis pattern.[1] Patients at first suffer from the state of ache or freezing, afterwards the state of frozen & at last defrosting state distinguished by the restricted Range of Motion.[2,3] Within the shoulder, capsular pattern is distinguished generally with the restriction of passive lateral capture and revolving. Though, various authors notified frozen shoulder within prime frozen shoulder, which causes correspond to idiopathic. Secondary correspond to injured capsulitis or in case of any other medical state is present alongside.[4] In fact, it continues for extended period as contrasted to declared period, while, it doesn't cure entirely, it never achieves complete recovery. The treatment aims at getting the relief, maintaining the ROM & finally restoring function. The clinical syndrome comprises restricted ROM, muscular pain & weakness. Though, various researchers argued that frozen shoulder is self-limiting disorder persisting as short-term as 6 months; Moreover some other researchers suggested that frozen shoulder is further long-lasting disease leading to long-lasting disability. Bonding agent capsulitis is further reactive in; DM cases as contrasted to common population. It varies from 10 to 20 percent in DM cases.[5] But, as compared to that, it is just 2 to 5 percent in general populace.[6] Moreover, it is more frequent in women too, with age varying from 40 to 70 yrs, where the chance of reappearance is too low. A variety of treatments is present for adhesive capsulitis. Treatments ranging from analgesics & rest, open surgery/arthroscopic, electrotherapy, physical therapy, acupuncture, injections, exercise, manipulation under Corticosteroid & anesthesia, TENS, U/S, ice & deep heat, while, as

Department of Orthopaedic Surgery, LUMHS, Jamshoro

Correspondence: Dr. Shakeel Ahmed
Orthopaedics Surgery Unit 1, LUMHS, Jamshoro
Contact No: 0313- 2851728
Email: dr.sajidarain@gmail.com

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such no therapy is being regarded as standard treatment. This study targeted to assess the functional outcome of frozen shoulder when treated with physiotherapy vs intrarticular injection of corticosteroid.

MATERIALS AND METHODS

This retrospective and comparative study was conducted at orthopaedic department of LUMHS, with duration of time from august 2013 to March 2014. In this study, 100 cases between age of 40-70 years selected after diagnosis of frozen shoulder or adhesive capsulitis. All the cases having pain for at least 3 months while moving shoulder, both gender and diagnosed adhesive capsulitis/ frozen shoulder were included in the study. All the cases with Inflammatory arthritis, neurological involvement, post fracture complication, uncontrolled diabetes cases or any heart disease and patients chronic liver disease and women with pregnancy were excluded from the study. After that the subjects were isolated into groups at random, 48 cases of the group A were underwent intrarticular injection of corticosteroid and the 52 cases of group B were underwent physiotherapy management. Result assessed at 4 and 8 weeks follow up continue at 16 weeks. Result assessed on severity of pain on(VAS) and range of movement at shoulder joint. Data was analyzed on SPSS program version 16.0.

RESULTS

In this study mean age was found 55.23±9.8 years, female were found in majority 62(62.0%) as compare to males 38(38.0%). Table:1

In this study on 4th week follow-up 7 patients were loss in physiotherapy group and 6 patients were loss from follow-up in Interarticular Injections group. In this forth week follow up visit we found more improved patients 29/69% in Interarticular Injections group out of 42 cases, and in 23/50.5% cases found improvement in physiotherapy group out of 45 cases. Table:2

On 8th week follow-up 12 patients were loss in physiotherapy group and 11 patients were loss from follow-up in Interarticular Injections group. In this 8th week follow up visit we found improvement in the majority of patients 32/85.0% in physiotherapy group out of 40 cases, and in 23/50.5% cases found improvement in Interarticular Injections group out of 35 cases. Table:3

Similarly 4th and 8th week follow-up on 16th week also some cases were missed, but on this follow up visit we found physiotherapy is the superior than Interarticular Injections group. As well as in this 16th week follow up visit we found improvement in the majority of patients 30/81.0% in physiotherapy group out of remaining total 37 cases, and in 17/58.6% cases found improvement in Interarticular Injections group out of remaining 29 cases. Table:3.

Table No.1: Demographic characteristics of patients (n=100)

Variables	No. of patients /(%)
AGE (Mean±SD)	**55.23±9.8 years**
GENDER	
Male	**38(38.0%)**
Female	**62(62.0%)**
RESIDENCY	
Rural	44(44.0%)
Urban	56(56.0%)

Table No. 2: Assessment at forth weeks n=100

Groups	Total comes after 4 weeks	Assessment Result	
		Improved	Not improved
A. Physiotherapy (52 Patients)	45/100%	23/50.5%	22/49.5%
B. Interarticular Injections (48 patients)	42/100%	29/69%	13/31%

Table No. 3: Assessment at eight weeks n=100

Groups	Total comes after 8 weeks	Assessment Result	
		Improved	Not improved
A. Physiotherapy (52 Patients)	40/100%	32/85.0%	8/20.0%
B. Interarticular Injections (48 patients)	35/100%	22/62.8%	13/47.2%

Table No. 4: Assessment at 16 weeks n=100

Groups	**Total comes after 16 weeks**	**Assessment Result**	
		Improved	**Not improved**
A. Physiotherapy (52 Patients)	37/100%	30/81.0%	7/19.0%
B. Interarticular Injections (48 patients)	29/100%	17/58.6%	12/41.4%

DISCUSSION

This study was intended to recognize the efficacy of intrarticular injection of corticosteroid techniques in shoulder adhesive capsulitis treatment by contrasting with physiotherapy management. In our study mean age was found 55.23±9.8 years, female were found in majority 62(62.0%) as compare to males 38(38.0%). Similarly Mohammad Siraj et al.[7] reported that mean age of patients that were incorporated in this study was 49±9.3 yrs. Males were 62 (55%) and females were 51 (45%). In some other studies also reported that Frozen shoulder influences 2% to 5% of populace, commonly amid 4th to 6th decade of life. Generally female, Parkinson's disease, DM, hypo or hyperthyroidism, cardiovascular disorders and those with immobilized shoulder for extended period because of injury are at

higher risk.[8,9] The non prevailing side is usually influenced, 6% - 17% of patients have bilateral participation, with a male-to- female proportion of approximately 4:1.[10]

In this study on 4th week follow-up 7 patients were loss in physiotherapy group and 6 patients were loss from follow-up in Interarticular Injections group. In this forth week follow up visit we found more improved patients 29/69% in Interarticular Injections group out of 42 cases, and in 23/50.5% cases found improvement in physiotherapy group out of 45 cases. It makes the evidence stronger that endorses their short-lasting advantage. Similarly the authors' awareness, no prior systematic reviews directly contrasted physiotherapeutic interventions to corticosteroid injections in adhesive capsulitis treatment. One of the main issues is that study into shoulder syndrome frequently fails to be definite in terms of diagnoses. Though, a Cochrane review[11] was held that was believed to possess some significance to this piece of study, as they analyzed their findings via making sub-groups as per diagnosis. They accomplished that even though 2 studies had recommended a probable early advantage of injections[12,13] non of the studies had documented any long-lasting advantages. The findings of Cochrane review[14] in that corticosteroid injections were observed to be further efficient at improving both ROM & function at about 6 weeks to 7 weeks.

In our series on 16th week also some cases were missed, but on this follow up visit we found physiotherapy is the superior than Interarticular Injections group. As well as in this 16th week follow up visit we found improvement in the majority of patients 30/81.08% in physiotherapy group out of remaining total 37 cases, and in 17/58.6% cases found improvement in Interarticular Injections group out of remaining 29 cases. Similarly Ryans et al,[15] during 2005 contrasted 20 mg triamcinolone injection with 2 ml saline in twenty cases of physiotherapy in further 20 cases and saline injection among 19 cases and followed them up @ 6th and sixteenth weeks. They observed that physiotherapy is further beneficial as compare to corticosteroid injection in reduction of pain. Arslan S et al.[15] contrasted methyl prednisolone 40mg injection in 10 cases, with physiotherapy in further 10 cases and followed them up @ second and twelfth weeks. They did not observe any significant variation amid groups. One study stated that therapy with PNF exercises caused an instant, significant rise in ROM in cases with decreased shoulder's external rotation and injured overhead reach.[16]

In this study on forth week follow up visit we found more improved patients in Interarticular Injections group, while on 8th and 16th follow up visit majority of improved cases were found in physiotherapy group. As well as the findings of Victoria Blanchard et al[17] state that the adhesive capsulitis therapy with corticosteroid injections is further valuable as compare to physiotherapeutic interventions for short-term, and to a less extent in longer term. Physiotherapists are thus preferably kept to amalgamate the administration of injections to decrease the early pain, and further 'traditional' physiotherapeutic interventions, for instance exercise & mobilizations, to restore ROM & function.[18]

CONCLUSION

Physiotherapy with TENS, Ultrasound and range of movement (ROM) exercise has better result than Interarticular injections of cortisone plus home exercise in the long time. But still it is a doubtful that how many injections and what doses (20, 40, 80) is for effective outcome?. More long term and big sample studies are needed for more conformation.

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

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Original Article

EmONC Services in Pakistan

Assessment of Availability of Essential Human Resource for Health for EmONC Services in Public Sector of Pakistan

Naeem Uddin Mian, Ashraf Chaudhary, Shehzad Awan, Adeel Alvi, Umer Farooq, Mariam Zahid, Waseem Mirza, Sarosh Iqbal, Muhammad Afzal and Saleem Rana

ABSTRACT

Objective: To assess availability and establish the current situation of essential human resource shortage for provision of emergency obstetric and new born care in public sector health facilities.

Study Design: Observational / descriptive / cross sectional study.

Place and Duration of Study: This study was conducted at the Department of Public Health, Contech School of Public Health, Lahore from January 2013 to December 2013.

Materials and Methods: A robust surveys were conducted by stratified sampling technique by taking 100% samples. 20% sample of basic health units was taken to assess the availability of essential human resource for health to meet the progress of Millennium Development Goal 4 and 5.

Results: Situation of availability of essential human resources at district and tehsil level for provision of maternal and newborn health services was found only 33% at district head quarter hospitals and 3% at tehsil headquarter hospitals. This is an escorting cause of not reducing maternal and child mortality as per target.

ConclusionStudy results suggest accelerated provision of essential human resource for health to provide emergency obstetric and new born care to reducematernal and neonatal mortality in the country.

Key Words: Mortality,maternal, newborn, child, health facilities, Human resource for Health

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INTRODUCTION

Global shortage of health workforce has been unanimously considered as one of the key constraints in providing essential health services leading to poor performance of health system to deliver effective and evidence based interventions. This crisis is more pronounced in developing countries as Pakistan is among 57 countries globally that are facing acute shortage of health workforce.[1] Since the adaptation of Millennium Development Goals (MDGs) in year 2000, global health community has focused on reducing Maternal, Newborn, and Child (MNC) mortality through a sequence of initiatives taken for MNC Health in 2005.[2,3] Despite these efforts, there has been inadequate progress in reducing the number of global MNC deaths.

Department of Public Health, Contech School of Public Health, Lahore.

Correspondence: Dr. Muhammad Saleem Rana,
Department of Public Health, Contech School of Public Health, Lahore.
Contact No: 0300-04335628
Email: saleem.rana@contech.org.pk

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This led to serious efforts by the United Nations Secretary General through the initiative of Every Woman Every Child in 2010 and the following constitution of the Commission on accountability for Women& Children's Health.[4] A study to assess the global trends in MNC mortality in 2010 comprehensively reported that there had been slow, but important, declines of -1.3% per year in the mortality ratio since 1990.[5] Some estimates reported even larger rates of decline from -1.9% to -3.1%.[6,7]

Acute inadequate number of health workforce was found as most significant factor for not achieving MDGs 4 & 5 by many countries.[8] If strategic discussion regarding accelerating mortality declines were properly informed, including establishing target of maternal, neonatal and child health, the latest observe and check the progress levels and trends in MNC mortality are essential.[9]

In Pakistan, tracking of maternal mortality has been more difficult as compared to track child mortality.[10] Misclassification of maternal deaths is one of the major challenges in the country; a considerable important ceerror in sampling depend on recall survey because of small number of reported maternal deaths; large measurement demonstrate with repeated overlapping.. Variation in the demographic assessment of reproductive-aged mortality also reported from all causes particularly in 1990s. A need of models to synthesize data from multiple studies or generate estimates where data are scanty.[11,12,13] At times, a note

able differences between global modeling efforts highlight the effect of each of the methodical steps used to assess maternal mortality.[14] Political awareness is increasing regarding Millennium Development Goal (MDG) 5 targets.[15,16] Donor agencies, national & global health partners, and national program managers are expressing distress by the wide uncertainty or inexactness of meaning in language and variance of estimates from different analysts.[17]

Pakistan Demographic and Health Survey (PDHS) 2012-2013 states the Maternal Mortality Ratio (MMR) of Pakistan is 276 deaths per 100,000 live births, under-five mortality (U5MR) is 89 deaths per 1,000 live births and infant mortality rate (IMR) is 74 deaths per 1,000 live births. Over 60 percent of deaths under-five years occur during the neonatal period (55 per 1,000 live births). Almost three-quarters of mothers (73 percent) consult a skilled health provider at least once for antenatal care[18], while Nicholas *et al* (2013) reported 400.6 (233.0 to 560.8) in his article.[19]

Rationale: There is conclusive evidence that increased availability of skilled health workers can improve maternal and neonatal outcomes. Pakistan is far behind the MDGs targets as per commitment. Therefore this study was planned to find out the causes by assessing MNCH services being provided by the public sector in primary and secondary health care facilities of Pakistan.

MATERIALS AND METHODS

We took universal sample of the District Head Quarter Hospitals(DHQs), Tehsil Head Quarter Hospitals (THQs)and Rural Health Centers (RHCs)and 20% Basic Health Units (BHUs)for survey, province wise detailed data is given in Table 1.

Prepared a questionnaire containing questions regarding 6/6 preventive MCH services at BHUs, 24/7 Basic MCH services at RHCs and 24/7 comprehensive MCH services at THQs & DHQs being provided in public sector. The health facilities were assessed according to MNC package and services components of EmONC.

MNCH Services

Comprehensive EmONC services: In addition to basic services, following comprehensive EmONC services are mandatory to be provided 24/7 at District and Tehsil level hospitals, ensuring essential HR i.e. one Gynecologist, one Anesthetist, one Pediatrician and one Blood Transfusion Officer (BTO) available round the clock:

- Surgery (C-section), Blood transfusion, New-born resuscitation & incubation

Basic EmONC Services: Following seven basic EmONC services are mandatory to be provided 24/7 at RHCs, ensuring availability of essential HR i.e. one WMO & one LHV:

i. antibiotic administration, utero-tonic (e.g. oxytocin) administration, anticonvulsant (i.e. magnesium sulphate) administration, Manual removal of placenta, Remove retained products of conception (e.g. manual vacuum extraction and D&C), Perform assisted vaginal delivery (vacuum extraction, forceps), Basic neonatal resuscitation (with bag & Mask)

Preventive MNCH Services: Preventive MNCH Services are mandatory to be provided8/6 at BHUs, ensuring availability of essential HR i.e. one Medical Officer (MO) and one LHV for Antenatal check-up, Urine test for pregnancy, sugar & protein, Blood test for Hb, malaria, family planning services (at least 3 methods), TT immunization, Nutrition counseling, NVD, EPI vaccination and Growth monitoring.

RESULTS

A total of 2,018 (33.5%) primary and secondary health

Table No.1: Province wise and type of facility wise total and surveyed number of health facilities in Pakistan

Name of Province/Region		Number of Health Facilities by type				
		DHQH	THQH/CHs	RHC	BHU	Total
Azad Jammu & Kashmir	Total HFs	6	12	34	208	260
	Surveyed HFs	6	12	34	40	92
Baluchistan	Total HFs	27	10	82	549	668
	Surveyed HFs	27	10	82	111	230
FATA	Total HFs	4	14	9	174	201
	Surveyed HFs	4	14	9	28	55
Gilgit Baltistan	Total HFs	5	27	2	15	49
	Surveyed HFs	5	27	2	7	41
Khyber Pakhtunkhwa	Total HFs	21	77	90	822	1,010
	Surveyed HFs	21	77	90	162	350
Punjab	Total HFs	34	84	291	2,454	2,863
	Surveyed HFs	34	84	291	493	902
Sindh	Total HFs	11	56	130	774	970
	Surveyed HFs	11	56	130	151	348
Pakistan	Total HFs	108	280	638	4996	6021
	Surveyed HFs	108	280	638	992	2018
Percentage surveyed		100	100	100	19.9	33.5

Table No.2: 2Showing the percentage facilities where essential HR available and percentage of services provided

Name of Area	%age of facilities where essential HR is availableDistrict Head Quarter Hospitals	%age of facilities where essential HR is available Tehsil Head Quarter Hospitals	%age of facilities where essential HR is availableRural Health Centers	%age of facilities where essential HR is availableBasic Health Units
Azad Jammu & Kashmir	100	8	41	70
Baluchistan	22	0	20	69
FATA	0	0	22	79
Gilgit Baltistan	40	0	0	71
Khyber Pakhtunkhwa	24	0	38	89
Punjab	44	7	66	94
Sindh	18	5	62	83
Pakistan	33	3	36	79

Table No.3: Showing MMR/ number of maternal deaths/ annualized rate of change in maternal mortality ratio (%) of World and Pakistan for the year 1990, 2003 and 2013

Place	Maternal mortality ratio (Per 100 000 live births)			Number of maternal deaths			Annualized rate of change in Maternal mortality ratio (%)		
	1990	2003	2013	1990	2003	2013	1990–2003	2003–13	1990–2013
World	283·2 (258·6 to 306·9)	273·4 (251·1 to 296·6)	209·1 (186·3 to 233·9)	376 034 (343 483 to 407 574)	361 706 (332 230 to 392 393)	292 982 (261 017 to 327 [illegible]92)	–0·3% (–1·1 to 0·6)	–2·7% (–3·9 to –1·5)	–1·3% (–1·9 to –0·8)
Pakistan	423·9 (317·2 to 521·6)	486·5 (360·7 to 595·6)	400·6 (233·0 to 560·8)	18 673 (13 973 to 22 976)	20 87[illegible] (15 47[illegible] to 25 557	17 876 (10 397 to 25 026	1·1% (–1·6 to F3·7)	–2·1% (–7·7 to 2·4)	–0·3% (–2·9 to 1·8)

care facilities were surveyed to establish the existing situation of HRH shortage for essential EmONC services. Universal sample of DHQs, THQs and RHCs were taken, while 19.9% BHU were randomly surveyed (Table.1), to assess and entail the two main variables.

a) Availability of essential human resource.
b) Provision of MNCH services.

Distribution of the percentage of facilities where essential HR available and percentage of services provided is given in table 2.

Total Health Facilities in Pakistan

Availability was determined to be 4%,33%, 53% and 86% at THQs, DHQs, RHCs and BHUs respectively. It is construed that essential HR at THQs and DHQs is not as desirable, which needs special consideration of authorities because it is the main impediment to achieve MDG goals (4 &5) 2015.

DISCUSSION

In global scenario, a fairly optimistic forecast for maternal deaths is 184, 100 (95% UI 133 600–244 700) in 2030. 53 countries including Pakistan will still have MMRs of more than 100. Global MMR decreased from 283.2 (258.6 to 306.9) in 1990 to 209.1 (186.3 to 233.9) in 2013 with annualized rate of change 1.3% of MMR from 1990 to 2013, in comparison to Pakistan MMR in 1990 was reported to be 423.9 (317.2 to 521.6) and 400.6(233.0 to 560.8)in 2013 with annualized rate of change 0.3% of MMR from 1990 to 2013[20] (Table 3). According to this data published in lancet May 2013, situation is not satisfactory and major cause of this [illegible] situation seems lack of essential HR at district and tehsil level hospitals.

In 2013, 26 countries accounted for 80% of child deaths worldwide including Pakistan. Globally there are nine countries with slower than expected decrease includingPakistan.[20]

Refined data showed the association between essential HR and mortality, worldwide mortality has decreased by -1·3% per year from 1990-2013. Inspite of decrease in the number of deaths from 1990 to 2013, only few countries achieved the MDG target by 2015. It has been noted that pattern in Pakistan showed, very low annual rate of change in maternal mortality ratio (%), identifying non- availability of essential HR in provision of comprehensive and basic EmONC services at district and tehsil levels as the one of the cause. Determination for progress to decrease the mortality in the next 15–20 years in Pakistan have been deemed technically feasible by providing required staff. A gloomy situation at the hospitals regarding the essential HR and the services provided by them drags us further away from attaining the set targets & goals for the maternal, neonatal & child health. In our assessment, only 33% of DHQ and 3% THQ hospitals in Pakistan had essential HR. Situation at the level of RHC hospitals showed that 36% had essential HR in Pakistan, situation in Punjab and Sindh is comparatively is better(66 and 62% respectively).

While taking BHUs in consideration in Pakistan, the situation seems satisfactory and found essential HR in 79% BHUs. Situation of HR in BHUs in all provinces found in the range of 69% (Baluchistan) to 94% (Punjab).

CONCLUSION

There is acute shortage of essential human resource for health at secondary level health facilities especially in THQ hospitals. DHQ hospitals are also not adequately staffed for Comprehensive EmONC servicesprovision, being a major impediment of not achieving MDGs 4 &5 in Pakistan.

Recommendation: There is a need to provide skilled human resource at secondary level health facilities (THQ and DHQ hospital) for prompt EmONC services for future SDGs achievement.

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Original Article

Normal Anatomical Variations of Renal Artery Pedicle: A Review of 100 Renal Angiograms of Healthy Proposed Renal Donors

Shazia Kadri, Inayat Ullah and Zahid Anwar Khan

ABSTRACT

Objectives: To present variations in renal arterial anatomy. To document renal artery number, source, course and patterns.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was **conducted at the** Angiography suite, Radiology Department, Sindh Institute of Urology and Transplantation from May 2011 to Oct 2011.

Materials and Methods: A total of 100 healthy adultswho underwent renal angiography for renal donor assessment in living related transplant programwere included. Both male and female with age group between 20-50 years having normal clotting profile, renal function and normal morphology on IVP were fully evaluated by predesigned performa including number, source, course and pattern of renal artery.

Results: Out of 100 cases of healthy renal donors, 66 were male and 34 were female. Fifty four percent were in 20 – 30 years of age group while 30% between 31 – 40 years and 16% in between 41 – 50 years. In 56% right renal artery found to be higher than left, where as 40% had both the arteries at same level. Right renal artery longer in 52% and left in 46%. Only 2% had same length of both renal arteries. Regarding the number, 66% had bilateral single, 24% unilateral double, 6% bilateral double and only 4 % unilateral triple.

Out of 100 renal donors with 200 renal pedicles (each donor having 2kidneys), single hilar artery seen in 75% in single hilum with inferior polar aortic branch in 14% and single hilar with suspicious polar aortic branch seen in only 4%. Double hilar arteries seen in 1% and hilar with extrahilar branch in 4% . Triple vessels found in 4% cases.

Conclusion: The study shows that normal variation of vascular anatomy of renal pedicle is clinically very important to perform urological interventional procedures and transplantation. This study providesinformation concerning renal artery anatomy not only for interventional radiologists but also to urologic surgeon.

Key Words: Angiography, Renal artery, Renal donor.

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INTRODUCTION

The knowledge of variations of renal arterial anatomy has importance not only in exploration and treatment of renal trauma[1] but also in renovascular hypertension, renal artery embolization, angioplasty or vascular reconstruction for congenital and acquiredlesions.

Evaluation of living potential renal donors routinely involves preoperative imaging of the kidneys and their vascular anatomy[2]. The conventional angiograms enable identification of the number, length and location of renal arteries. Intrinsic disease of arteries may be identified. The kidney best suited for removal is selected on the basis of angiographic findings[3].

Department of Radiology, Cyberknife JPMC, Karachi.

Correspondence: Dr. Shazia Kadri,
Consultant Radiologist, Cyberknife JPMC, Karachi.
Contact No: 0300-2135110
Email: Shaziaum_wk@yhaoo.com

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Evaluations of conditions affecting the renal vasculature constitute a major focus of Digital subtraction angiography, which has documented utility for demonstrating both arterial and venous disease. DSA accurately displays the normal and variant renal vascular anatomy, that is crucial todetermine before partial or laparoscopic nephrectomy.

Renal artery variations including their number, source and course are very common (35%). The most common is the presence of an additional vessel (28%)[4].

Variations of renal artery have their origin in embryonic development[5]. Initially, the kidneys are in the pelvis, but they gradually come to lie in the abdomen. During development urogenital tissue is supplied by a wide network of small aortic branches called the retearteriosumurogenitale. As the kidneys move out of pelvis, they are supplied by successively higher vessels[6,7]. While the lower vessels normally degenerate. Therefore, arterial variations result from persistence of embryonic arteries that normally disappears.

Each kidney is supplied by a single renal artery arising from abdominal aorta[8]. The renal arteries arise opposite

each other from the lateral or anterolateral aspect of the aorta at the L1-L2 level[9] about 2 cm below the superior mesenteric artery. This single artery divides into anterior and posterior trunks anywhere along arterycourse to kidney hilum. The right renal artery course posterior to the inferior venacava[10].

Multiple renal arteries occur in about 20% of cases, more often on left[11]. Most frequently they arise from the aorta below the main artery, although their origin may be above the main renal artery or even aberrantly fromnearest pointthe iliac arteries. They usually enter the kidney parenchyma accompanying the main artery into the hilum (so called accessory branches).

Current terminology of renal arteries include hilar artery which traverse the renal hilum and pierce renal substance from within the sinus but may sometime enter the kidney medially directly either above or below called polar arteries. The extra hilar artery is a renal artery branch that has extra hilar penetration (superior pole) in the kidney where as precocious bifurcation is the one in which renal truck has < 1 cm length before branching off[12].

Accessory renal arteries may enter the kidneys at any point and vary in size and are generally derived from aorta (26 – 30%) in all reported kidneys studied.

In different studies renal arteries were reported to be located between lower third of first lumber vertebra and cranialthird of second lumbar vertebra. The right and left renal arteries can be at same level but usually right is higher than the left in most of the cases. A single renal artery on one side and multiple 2-4 renal arteries on the other is not unusual.

The right renal artery usually courses behind the inferior vena cava andis longer than the left. When multiple, the more caudal arteries often take a precaval course. The right renal artery may measures up to 0.5 to 8 cm from its aortic origin to the point of division, while left may vary from 0.5 to 6 cm. In most cases, the division of single renal artery into anterior and posterior trunks may be anywhere along course of the artery reaching the kidney hilum. Precocious[13] (near to its origin) division may be interpreted mistakenly, as dual or even multiple renal arteries. The number of renal arteries may vary from two to four, although there may be, rarely five or six, branches arrange either unilaterally or bilaterally.

Accessory renal arteries can arise from aorta as high as (superiorly) as the diaphragm or as low (inferior) as the internal iliac artery. But a superior accessory artery is a segmental apical artery and an inferior accessory artery is a separate lower segmental artery.

Double renal arteries may be side by side, one in front of the other, or spaced so that they enter the kidney at opposite ends of hilum. In cases of double renal arteries, there may be primary aortic hilar renal and renal polar artery. Rarely three hilar renal arteries are derived from the aorta, twohilar (of aortic origin) and a superior or a lower renal polar branch are typical triple renal artery pattern.

Quadruple renal may exist as two hilar and two polar, three hilar and one polar or one hilar and three polar renal arteries usually only one of these is large and other are smaller and distributed to the superior or inferior extremities of the kidney. Therefore detailed knowledge about renal artery variation is very important in order not be misinterpret normal variations as renal pathology.

MATERIALS AND METHODS

A descriptive study including100 healthy adults who underwent renal angiography for renal donor assessment in living related transplant programdone from May 2011 to Oct 2011. , at Angiography suite of .Radiology Department ,Sindh Institute of Urology and Transplantation.

Both male and female with age group between 20-50 years having normal clotting profile, renal function and normal morphology on IVP were fully evaluated by predesigned performa including number, source, course and pattern of renal artery.Angiograms withInadequate visualization of accessory vessels were excluded.

We analyzed the renal arterial pattern in 100 adults with 200 renal pedicles.

Renal angiography of the patient was performed by Digital Fluorography system Toshiba DFP-2000A with computerized advantage of the subtraction of precontrast film from a radiographic film after contrast medium injection in the arteries. The subtraction is made in real time while the contrast injection is being recorded.

DSA angiography of the patients were performed in order to analyze the normal variations of renal arterial pattern. No inferential test was applicable for this descriptive study.

RESULTS

Out of 100 renal donors, 66 were male and 34 were female in which 54% were in age group between 20 – 30 years, 30 % were between 31 – 40 years. 16 % were in between 41 – 50 years.

In our study most of the right and left renal arteries found to be at same level in 40 % of cases while right was higher in 56 % and left was higher in 4 % of cases. This indicates gradual ascend of kidneys from pelvis to abdomen during embryologic development and results in different level of origin of both renal arteries. Renal arteries were found to be located between first lumbar vertebra and second lumbar vertebra in 91% cases.

The longer right renal artery courses its way behind the inferior vena cava. 52 % cases presented with right renal artery longer (from aortic origin to its division) and 46 % with left longer. 2 % cases found with same length of both renal arteries.

The number of renal arteries i.e. single on one side and multiple renal arteries on the other is not unusual. 66 % presented with bilateral single renal arteries, 6 % with bilateral double (hilar with polar aortic branch), 24 % with unilateral double and 4 % with unilateral triple (figure 1).

Regarding pattern of renal arteries (figure. 2), out of 100 donors with 200 renal pedicles (each donor having 2 kidneys), single hilar artery found in 75 %. 4 % presented with single hilar with extra hilar branch and 1 % with double hilar arteries. Extra hilar branch is ramification of main trunk of renal artery and has surgical importance similar to polar aortic branch, since this vessel can be injured during mobilization or other procedures on superior pole. 4% of renal pedicles found to have single hilar with superior polar aortic branch and 14% with single hilar inferior polar aortic branch and 2% showed single hilar with superior and inferior polar aortic branch.

Precocious bifurcation of renal artery seen in 6 % of renal pedicles and considered to be equivalent of multiple blood supply in surgical terms because to ligate safely and perform anastomosis in living donors, main renal artery should be at least 1 cm in length.

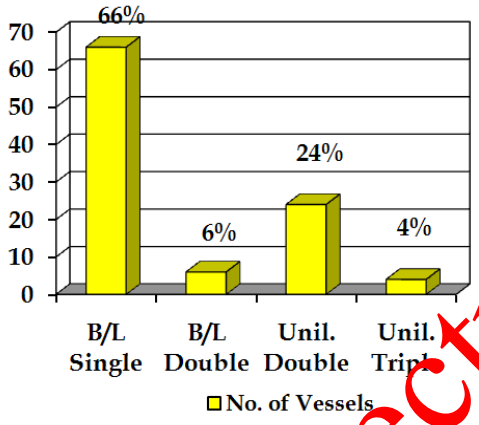


Figure No.1: Number of Renal Arteries (n=200)

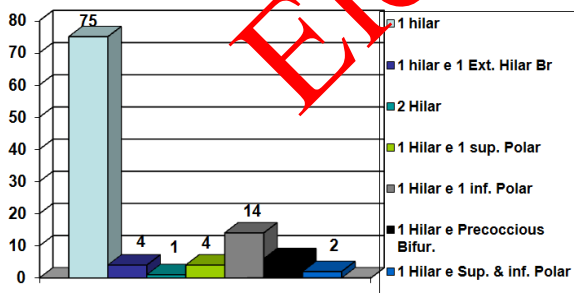
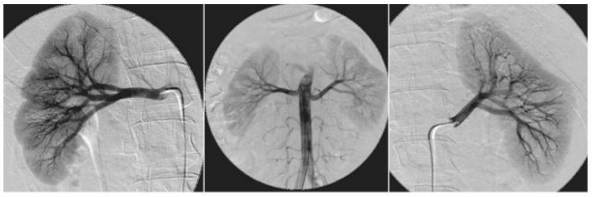
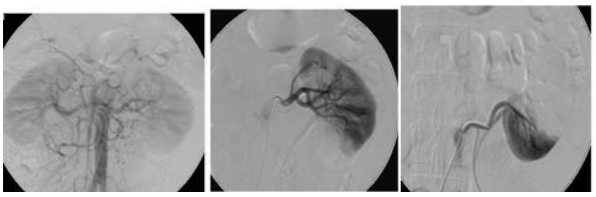


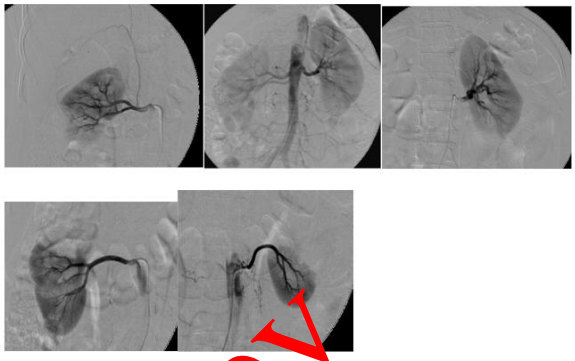
Figure No.2: Patterns of Renal Arterial Anatomy



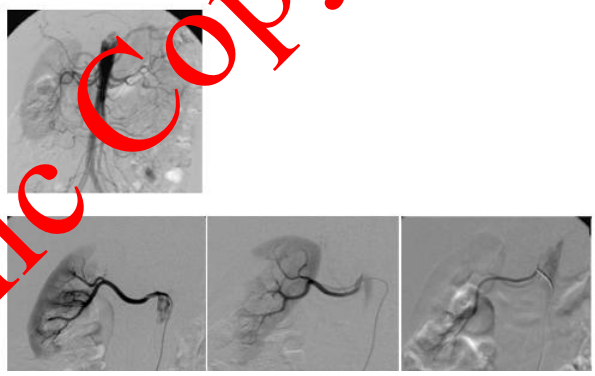
Bilateral Single Renal Arteries (Aortogram with Selective Images)



Double Renal Artery (Single Hilar with Inferior Polar Aortic Branch)



Bilateral Double Renal Arteries



Triple Renal Arteries

DISCUSSION

End stage renal disease is a devastating, physical, economical and social problem for patients and their family. The prevalence of it has increased over last few decades which has led to tremendous rise in number of renal transplant surgery. Therefore, meticulous screening and selection of renal donors is of primary importance.[14]

Kidney transplant from living donors have become increasingly common. A major reason for this increase in living donor transplant is better outcome obtained with living donors as opposed to cadaveric kidneys.[15]

Anatomic assessment of the donor kidney is performed prior to transplantation to help select the kidney to be used and plan the surgical approach. The preoperative diagnosis becomes even more pertinent due to increasing use of laparoscopic donor nephrectomy as the details of arterial and venous anatomy may be more demanding to appreciate during laparoscopic surgery[16].

Angiography occupies a unique place in medicine. It is invaluable aid in diagnosis of diseases of viscera and definitive method of showing vascular anatomy.

Nowadays the imaging techniques have been supplanted largely by computed tomography[17,18] (CT) or magnetic resonance (MR) angiography but still Digital subtraction angiography (DSA) is the idealand most accurate technique for visualization of renal vascular system not only to identify the number, position and patency of the renal arteries but also to identify proximal branches of main renal artery presence.[19] By means of DSA unit the image of bones and soft tissues is blotted out and a subtractive picture of contrasted vessels alone emerges[20]. Small renal arteries can be missed on multi-slice CT usually due to interpretation errors and rarely from non visualization of the artery as compared to DSA.

Differences between the renal pedicles, depending on the side, are accounted for chiefly by adult asymmetry in the renal venous drainage. it is regularly stated that the right renal artery is longer than the left; and the left renal vein longer than the right.[21]

The study of normal variations of renal arterial anatomy is very important because for renal transplants as surgeons usually avoid the kidney with more complex anatomy. Therefore, failure to distinguish between normal variants of renal artery can result not only in renal transplant failure but also in treatment of renal trauma, embolization, angioplasty and reconstruction for congenital and acquired lesion and conservative or radial renal surgery.

Our results suggest that multiple renal arteries supply approximately one third of all kidneys. The length right renal artery from aortic origin to its division point measured between 0.2 – 7.4 cm. with right renal artery higher in 56% as compared to left. Single hilar arteries seen in majority (66%). 24% had unilateral double and only 4% had unilateral triple vessels having pattern of single hilar with superior and inferior polar aortic branch. The most common presentation of normal variation is single hilar with inferior polar aortic branch in 48 %.

CONCLUSION

The study highlights the normal variations of renal artery in order to provide thorough understanding of such anatomy so that the urologic surgery and uroradiologic interventional procedures can be performed safely and efficiently.

Accessory renal arteries are the most common and clinically important renal vascular variantionseen in upto one third of patients , so it is just as important today as it was few years ago to have detailed knowledge about renal angiogram in order not to misinterpret the many normal variations as renal pathology. This normal and variant vascular anatomy can be viewed easily and accurately by surgeons on CD, similar to that seen in surgery. Digital subtraction angiography identifies the vascular anatomy of kidney donorsaccurately. It is the preferred imaging study for preoperative evaluation of kidney donors.

As it provides accurate assessment of renal vasculature in efficient manner, it is more beneficial to recipient for long term survival and viability of renal graft. The vascular map provided by DSA facilities the technical performance of live donor nephrectomy

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

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Original Article

Consent in Surgery

Current Practice of Informed Consent in Surgery Department at Tertiary Care Hospital

Farkhanda Jabeen Dahri[1], Abdul Hakeem Jamali[1] and Muhammad Khan[2]

ABSTRACT

Objective: To determine the current preoperative informed consent practice in cases undergoing surgical procedures.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at the Surgery Department of PMC Hospital and PUMHS Nawabshah Sindh from Jan-2014 to April-2015.

Materials and Methods: Following informed consent, 165 cases were incorporated in this study. Cases were randomly selected with suitable sampling technique and their surgical procedure was done electively, whereas those cases, which were treated conservatively and not capable of answering because of unconsciousness, eclampsia and shock, were not included in this study. Data was recorded on preplanned proforma concerning demographic information of cases, their knowledge regarding surgery carried out on them & the extent of data supplied them regarding risk, advantages of surgical procedure and other treatment choices.

Results: Twenty nine (15%) cases were of age group of 20-35 yrs, whereas 104(53.86%) were of age group of 36-50 yrs. Well-versed consent was obtained from the cases by surgeon in 63(32.64%) cases, by inhabitants in 105(54.40%), house officers in 10(5.18%) and by nurses in 15(7.77%) cases. This was ensured from the records of patients. When/ the patients were inquired, weather they completely grasped the data given to them, 86(44.55%) declared "yes" whereas 107(55.44%) did not grasp the data offered to them.

Conclusion: Our study concluded that the majority of our contributors were conscious regarding the surgery done on them however they were provided little facts about risk, complications & advantages of the surgery.

Key Words: Informed consent, surgery, patients, preoperative.

Citation of article: Dahri FJ, Jamali AH, Khan M. Current Practice of Informed Consent in Surgery Department at Tertiary Care Hospital. Med Forum 2016;27(8):40-43.

INTRODUCTION

Autonomy of cases is a significant problem in the health service region. Well-versed consent is the autonomous approval collected from the patient following the description and explanation of surgeons regarding the optional treatment, nature of issue, anticipated therapeutic advantages, therapeutic side effects & risks as well as outcomes of no treatment. Ability to participation in one's own health care decisions is a basic right of human. The treating physician's concern in this procedure cannot be minimized while in practice, usually the "consent signatures' are received by a junior doctor or a health worker without any understanding on the part of the vulnerable patient.

It is the responsibility of the treating physician to discuss with the patient and obtain consent about the procedure or treatment, how it is carried out, and the risks attached to it. The treating doctor should give a balanced view of the options and explain the need for informed consent and let the patient decide. This is important in the context that the patient himself may have limited awareness of the legal implications of signing or not signing consent forms, and they may not recognize written consent as primarily serving their interests[1] Patients may feel scared and stressed by having to give written consent, and may report that they do not read or understand the consent form.[2,3], In addition there are assumed myths regarding informed consent that have not been explored or documented.[4] Ethics teaching has been shown to have a profound influence on medical professionals' attitudes.[5,6], In Pakistan ethics is sometimes not given the due importance at the undergraduate or postgraduate level, though the PMDC guidelines clearly state that medical students must be taught ethics and evaluated.[7]On the other hand, the Pakistani milieu also offers challenges to this process because crucial decision making is often done by family members or is left entirely up to the attending physician.[8]

[1.] Department of Surgery, People Medical College / PUMHS Nawabshah.
[2.] Department of Urology, Gambat Institute of Medical Sciences, district Gambat.

Correspondence: Abdul Hakeem Jamali, Senior Registrar of Surgery Unit III, PMC hospital and PUMHS Nawabshah
Contact No: 0333-2700192
Email: dr.saeedarain786@gmail.com

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Informed consent for medical interventions must include the nature of the proposed intervention, the alternatives to it, the risk and benefits of the proposed intervention as well as the alternatives, an assessment of the patient's ability to understand the discussion, and the patient's voluntary acceptance of the proposed intervention [9]. The requirement for an informed consent is well established in all decision making situations in clinical practice.[10] Patient himself may have limited awareness of the legal implications of consent forms[11] informed consent has not been taken seriously sometimes by the care takers s& sometimes by the patients themselves especially in the field of psychotherapy.[12] This has been evident even in the situations at community health centers, even in presence of very stringent institutional policies.[13] In Pakistan health care is being provided through public sector as well as through private sector. The general practitioners are considered as the back bone for the health care delivery system in our country. In the medical profession, a general practitioner (GP) is a medical doctor who although does not qualify / specialize in a particular field but he cares for the general health of the community by treating acute and chronic illnesses and by providing preventive care and health education to patients. Regarding general practitioners' perception about bioethics, it is apparent that although they feel that patients have a right to knowledge about their disease status but a high proportion of general practitioners do not consider it necessary to explain the details of the treatment advised to patients.[13]

On many occasions, it has been noted that the respect for physicians inhibits the individuals from questioning the purpose and benefits of research [14] but still many studies conclude that it was imperative that individuals understand what health information sharing entails.[15] Informed consent is the simplest way of sharing of sufficient medical knowledge by communication between doctor & patient. This is more important in our setting where most of the times, the patients have very wrong concepts about the informed consent.[16]

The purpose of this study was to find out current preoperative informed consent practice in patients undergoing surgical procedures.

MATERIALS AND METHODS

This study was conducted in the s surgery department of PMC hospital and PUMHS Nawabshah Sindh from Jan-2014 to April-2015. After taking informed consent, 165 patients were included in the study. Patients were selected randomly by convenient sampling technique.

Patients, whose elective surgery was performed, were included in the study, while patients who were treated conservatively, who were operated in emergency and those patients who were brought in state of unconsciousness / shock or patients who were unable to answer the questions due to pain were excluded from the study.

Questions were asked from patients on 3rd[d] or 4th postoperative day when they were pain free. Information was collected on predesigned proforma regarding demographic data of patient, their awareness regarding surgical procedures performed on them & the extent of information given to them about risk, benefits of surgery and alternative treatment options. All data was analyzed on SPSS version 19. Frequency & percentages were calculated to describe the results.

RESULTS

Total 165 patients were included in the study. 19(11.51%) patients belonged to age group of 15-25 year while 95(57.57%) belonged to age group of 26-45 years and 51(30.90%) had age of more than 45 years (Table 1).

90(54.54%) patients were illiterate while 40(24.24%) had done the matric and 15(9.09%) were graduate (Table 1).

Regarding socioeconomic condition, 82(49.69%) cases belonged from poor class while 64(38.78%) belonged to middle class (Table 1).

Informed consent was taken from the patients by surgeon in 25(15.15%) patients, by residents in 73(44.24%) and by paramedics in 67(40.60%) patients.

When patients were asked, weather they fully understood the information provided to them, 76(46%) said yes while 89(53.93%) did not understand the information provided to them.

136(82.42%) patients knew the reason of surgery performed on them while 29(17.57%) were not told about the reason of surgery performed on them. Only 98(59.39%) patients were told about alternative of surgery while 67(40.60%) patients were not (Table 2).

Table No.1: Demographic data (n= 165)

Variables	Number	Percentage
Age (years) 20-35	19	11.51%
36-50	**95**	**57.57%**
>50	51	30.90%
Education Uneducated	90	54.54%
Middle	**20**	**12.12%**
Matric	40	24.24%
Graduate	15	9.09%
S.E.C Poor class	82	49.69%
Middle class	64	38.78%
Upper class	19	11.51%

Table No.2: Questions asked regarding information provided to patients before surgery n=165

1. Did you fully understood the information provided to you
• Yes 76(46%)
• No 89(53.93%)
2. Do you know why surgery was performed on you
• Yes 136 (82.42%)
• No 29(17.57%)
3. Before surgery were you informed about the surgical procedure
• Yes 123(74.54%)
• No 42(25.45%)
4. Did doctor informed you about side effect and complication of surgery
• Yes 41(24.84%)
• No 124(75.15%)
5. Was you told about cost of surgery
• Yes 153(92.72%)
• No 12(7.27%)
6. Was you told about duration of post operative hospital stay
• Yes 74(44.84%)
• No 91(55.15%)
7. Were you told about alternative of surgery
• Yes 98 (59.39%)
• No 67(40.60%)
8. Did doctor informed you about the benefits of surgery
• Yes 120(72.72 %)
• No 45(27.27 %)
9. Was you told about anesthesia type, its complications,
• Yes 74(44.84%)
• No 91(55.15%)

Table No.3: Consent taken by

Variables	Number	Percentage
Consultant	25	15.15
Junior residents/ medical officers	**73**	**44.24**
paramedics	67	40.60

DISCUSSION

The informed consent is a universally recognized procedure to ensure safeguarding the patients' rights.[17] It is now throughout the world that the requirement for an informed consent is well established in all decision making situations in the clinical practice. Currently it is a well-established fact that a fully informed patient can participate in choices about his/her health care.[18] Being a developing country, Pakistan still lacks in some of the crucial health innovations; the informed consent of the patient prior to some medical or surgical intervention is one of them.

In our study, only 46% patients understood the information provided to them, 17.57 % patients did not know the reason of surgery and 25.45% did not know about the surgical procedure performed on them. Same is seen in study conducted by Amin MF *et al*, 71.5% and 45% patients received information regarding their medical condition and the nature of the proposed intervention respectively[19].

In our study only 24.84% patients knew about side effects and complications of surgery while rest of patients was not given any information. Vessey *et al*., in their study, report that although majority of patients understood that an operation was being planned, 28 out of 49 (57.1%) patients undergoing surgery for acute abdomen did not receive any information about the complications before undergoing surgery.[20] In another study, 69.3% patients reported receiving no information about the potential risks.[21] The doctor's desire to protect patients against anxiety is usually cited as the reason for not divulging the complications associated with surgery. This notion, no matter how good-intentioned, is unfounded. Marco *et al*. refute this baseless impression by reporting that none of their patients undergoing coronary artery bypass surgery (CABG) or percutaneous coronary intervention (PCI) identified any of the explained risks as a reason to reconsider having the surgery with majority (80%) of the patients wanting to be informed of all the risks of surgery.[22] It is observed that although patients are usually notified that an operation was being planned, there is a clear need for improved discussion on common and important complications.[23]

In our study, only 44.84% patients got information about type of anesthesia for surgery and its complications while rest patients were not given any information. Amin *et al*. report only 15% patients receiving information about the complications a associated with anaesthesia.[19] In current medical practice, patients who have consented to a surgical procedure are routinely considered to have given an implied consent to undergo anaesthesia. It is usually regarded unacceptable for doctors, other than anaesthetists, to disclose the nature of the complications when they will neither be administering it nor have adequate knowledge of what is involved. Anaesthetists, therefore, have a duty to explain to the patient the nature, purpose and material risk of the proposed anaesthetic procedure. There is a dire need for designing specific guidelines by the anaesthetic departments for the process of taking consent.

In our study only 15.15% of consent was taken by consultant, operating surgeon while in 44.24% consent was taken by junior residents and medical officers. Same is seen in study conducted by Siddiqui et al. [24] We found a lack of communication between general

practitioners & their patients which is needed to be improved Nievelstein et al also concluded in a research on this issue that efforts should be directed towards improved information and communication between the doctors & patients for the betterment of the patients.[25]

CONCLUSION

This study reveals that most of our participants were aware about the surgical procedures performed on them but they were given little information regarding risk, complications & benefits of the surgery. Apart from educating the public, the healthcare professionals also need to be educated about the importance of patient's rights and the value of their informed consent so that the patients can fully participate in their disease management & to avoid litigation.

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

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Original Article

Runaway in Girls

A Study of Propensity Factors Leading to the Runaway in Girls

Shazia Shahzadi[1] and Hanif Khilji[2]

ABSTRACT

Objective: The study was conducted to identify the causes and features of women for seeking shelter at Dar-ul-Aman located in Quetta city.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at Department of Behavioral Sciences and Community Medicine Quetta Institute of Medical Sciences (QIMS), Quetta Cantt from July 2015 to December 2015.

Materials and Methods: The sample of 20 girls was taken from Dar-ul-Aman and interview schedule was administered, to assess the cause of the various variables was taken along with the case histories.

Results: After collection of the data the results were analyzed in the light of the objective to the study. It can said that conflict in family, unhealthy influence of mass media, marriage problem bettering wife or abusive husband are the factors or reasons leading to runaway.

Conclusion: Sample can be collected from different Dar-ul-Aman and should not only collected from Dar-ul-Aman but also from various other places such as polices stations film studious, red light areas and from those houses where such girls reach. To get more reliable result. It may be suggested that sample should be large enough to get more valid results.

Key Words: Propensity, Runaway, Girls

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INTRODUCTION

The present study conducted to find out the different reasons that why woman come in Dar-ul-Aman. Women have to play while living different roles in a society which is divided into the men sphere of the household and the outer world of finance, markets, polities and power.[1]

Prior to Islam the social status of women was very inferior. She has no status except maid servant or slave. People utterly disliked the birth of daughters in their homes. This was an era when the daughter had been engraved alive. The Islam, fourteen hundred ago equalized the woman with man and released her from the slivery of men, is which she had bee entrapped for centuries. Islam recognized the veneration of woman by declaring her most respectable because she keeps the bees qualities as mother, sister, daughter and wife.[2]

[1.]Department of Behavioral Sciences, Quetta Institute of Medical Sciences (QIMS), Quetta Cantt

[2.]Department of Community Medicine, Quetta Institute of Medical Sciences (QIMS), Quetta Cantt

Correspondence: Dr. Hanif Khilji, Head of Department, Community Medicine, QIMS, Quetta Cantt
Contact No: 0321-8039497
Email: dr.khanifkhilji@yahoo.com

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Pakistan is an Islamic country but according to the other Asian countries woman is also considered as second class citizen here too. She does not have such rights which she deserved. The role of woman is of prominent importance in development of every society but woman can play their role effectively only when they are provided with the opportunity. This fact is bash less for an Islamic slate that woman is being exploited in every sphere of life. Woman is prey of unjust treatment whether it is playground, field of education, facilities of health, chances of employment and domestic problems and now this era. [3]

So women like other family members must as rightful members of the family, rejection, and physical or emotional, exploitation creates feelings of insecurity and inferiority and may compel them to leave the safety of home. In Pakistani society it is taboo for female to leave their home without the permission of parents or husbands. Women who dare to do this are ostracized for life. They have violated the "Izzat" and honor of the family and such condemned women is Dar-ul-Aman. [4]

The age limits of subjects were 15 to 22 years old. This period is called adolescence period. Adolescence is a bridge between childhood and adulthood and widely recognized as a stage associated with substantial changes. [5]

This period of age which is selected for study, is important because this period is traditionally been

represented as a stormy, transitional period of development and ready to carryout and desire, they must have formed into action. They are passionate, energetic, rebellious often idealistic, they are slaved of their passions, According to psychoanalytical theory the adolescent displace oedipal conflict into love objects, outside the family. This period is often marked by considerable turmoil and even delinquency.[6] Girls left their home due to physical, mental and emotional torture and conflict with their parents.[7]

Dar-ul- Aman

It is a home, established by social welfare department of the government to provided shelter to women, who are compelled to level their homes, because they are either not acceptable to their relative or they lose their economic support. The main role of Dar-ul-Aman is to look after and feed these women and try for their physical and economical rehabilitation. The social worker and the field officer working under the women, persuade their relatives to accept them back in the family and also make arrangement for their marriage. Instructors are engaged to teach sewing, knitting and dress making to these inmates, who wish to learn a profitable craft. So, Dar-ul-Aman is the only place where the girls feel secure and get all the necessities like home.

MATERIALS AND METHODS

A purposive technique was used in this study. The sample was selected in the Dar-ul-Aman Quetta. It was consisted of 20 females and belongs to different rural and urban areas. The age range is 15-22.

Hypothesis:

1. Conflict in the family greater the chance of running away.
2. Low socio economic status is factor of girls running away.
3. Unhealthy influence of mass media increases the tendency of running away.
4. Marriage decision increases the chance of running away.
5. Battering wife increase the tendency of running away.

Procedure: Having specified the problem, the suitable sample was taken from Dar-ul-aman. a special written permission for data collection obtained from superintendent of Dar-ul-Aman. The researcher interviewed the individual in private, to remove the possible of their answers being affected, rapport was developed by telling them that is for their help and their identification will never be disclosed. Approximately half an hour was spent on each subject. Although the schedule was made of Urdu but according the demand of subjects' questions was asked in Pashto.

RESULTS

Table No.1: Conflict in the family greater the chance of running away.

Variables	Yes	No
Divorce + Separation of Parents	14 (70 %)	6 (30%)
Death of Parents	12(60%)	8(40%)

Table No.2: Low socio economic status is a factor of running.

Variable	Yes	No
Facilities of life available in home	14 (70%)	6 (30%)
Need Fulfillment	13 (65%)	7 (35%)
Joint family System	8(40%)	12(60%)

Table No.3: Unhealthy influence of mass media increases the tendency of running away.

Variable	Yes	No
Showing romantic type of movies	13 (65%)	7 (35%)
Becoming a heroin	15 (75%)	5 (25%)
Adaptation of heroin character in near	12 60%)	8 (40%)

Table No.4: Marriage decision increases the chance of running away.

Variable	Yes	No
Parents interested in their marriage	10 (50%)	10 (50%)
Conflict with parents in the choice of life Partner	12 (60%)	8 (40%)

Table No.5: Battering wife increase the tendency of running away

Variable	Yes	No
Unpleasant relation with husband	12 (60%)	8 (40%)
Usually quarrel with husband	13 (65%)	7 (35%)
Physically abused by her husband	15 (75%)	5 (25%)
Husband were not fulfill their need	14 (70%)	6(30%)

DISCUSSION

In this study five hypothesis are tested. The purpose of the study is to find out the reason of running away. The 1st hypothesis is conflict in the family greater the chance of running away. This hypothesis is supported because 14(70%) girls left their homes due to family conflict. 2nd hypothesis "low socio economic status is a

Factors of running away from homes. After the calculation and analysis of data it appears that most of runaway girls were not left their house due to low socio economic status, (4600, 5000) 3% girls belongs to low socio economic status (600-1000). 3rd hypothesis is, mass media increase the tendency of running away. This hypothesis is supported because calculations show that girls were influenced by the heroine characters of films and tried to adopt those characters in actual life. Data shows 13 (65 %) of runaway girls used to see romantic films and 15(75 %) wanted to become a heroine like them. After seeing films 12 (60%) girls wanted to adopt that character in real life. This percentage indicates that girls of this age 15-22 usually impressed negatively by movies. That is why it can be said that the unhealthy influence of mass media increase the tendency of running away. 4th hypothesis is the problems related to marriage decision increase the tendency of running away. This hypothesis also gains support. This study shows that 10 (50%) of girls thought that their parents were not interested is their marriage and 10(50 %) of girls had conflict with their parents in the choice of life partner. So when parents impose their decision girls rebel and leave the home. So marriage problem increase the inclination of running away. 5th hypothesis is battering wife increase the tendency of running away. This hypothesis is supported 12(60%) of girls had unpleasant relation with husbands. 13(65 %) girls had quarreled usually with husbands. 15(75 %) girls had abusive husbands, 14(70 %) husbands were not fulfilled their need. Every girl wanted to enjoy the life after marriage, but when their wish is not fulfilled and they had abusive, drug addictive, sexual husband then they leave the home.

It can said that conflict in family, unhealthy influence of mass media, marriage problem battering wife or abusive husband are the factors or reasons leading to runaway.

CONCLUSION

An intensive study be conducted on wide scale to get more reliable result, for this purpose following sampling strategies can be adopted.

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- Sample can be collected from different Dar-ul-Aman and should not only collected from Dar-ul-Aman but also from various other places such as polices stations film studious, red light areas and from those houses where such girls reach. To get more reliable result.
- It may be suggested that sample should be large enough to get more valid results.
- It may be recommended that to increase the validity of results both the husbands and wife should be interviewed.
- In order to get significant result, researcher should include equal number of subjects for reach group.

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

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Original Article

The Effect of Prenatal Administration of Sodium Phenytoin on the Survival and Hatching of Chick Embryos

Hamd Binte Shahab Syed and M. Yunus Khan

ABSTRACT

Objective: To determine the effects of prenatal exposure to sodium phenytoin on survival and hatching of chick embryos.

Study Design: Experimental study.

Place and Duration of Study: This study was carried out in the Anatomy Department, Regional Centre of College of Physicians and Surgeons, Islamabad from January 2012 to January 2013.

Materials and Methods: The study was carried out on three experimental (B1,B2,B3) and three control (A1,A2,A3) groups. The chick embryos of the experimental groups were injected with 3.5 mg of sodium phenytoin per egg whereas the controls were administered same volume of normal saline just before incubation. The experimental group was dissected on day 4, day 9 and day 22 or hatching whichever was earlier. The survivability was compared with age-matched controls.

Results: Survival was less in the experimental groups as compared to the controls. The percentage of mortality was 3.84% in group B1, 14.28% in group B2 and 21.42% in group B3. This difference between control and experimental groups was found to be statistically significant ($p<0.05$). In group B3, 90% of the live chicks were able to crack open the shell on their own. Rest of the chicks had to be assisted after waiting till 22nd day of the incubation. All of the chicks belonging to the control group A3 cracked open the shell on their own on the 21st day of incubation but this difference between groups A3 and B3 regarding mode of hatching was found to be statistically insignificant (p 0.1812).

Conclusion: In this study, prenatal sodium phenytoin exposure resulted in decreased chick embryo survival with increasing embryonic age and increased duration of exposure but there was no significant effect on the hatching of the chicks.

Key Words: Chick Embryo, Phenytoin, Survival, Hatching

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INTRODUCTION

Women with a history of seizure-related illnesses require antiepileptic medication throughout pregnancy. Phenytoin is a widely used non-sedative antiepileptic drug included in pregnancy category 'D' of teratogenic potential according to the FDA (United States Food and Drug Administration) which justifies the use of this drug if the potential therapeutic benefits outweigh the potential risks.[1]

Intrauterine exposure to phenytoin leads to a broad spectrum of fetal anomalies collectively known as the 'fetal hydantoin syndrome'. It comprises a number of birth defects including facial dysmorphism, mental retardation, neurobehavioural disorders, heart defects, abdominal wall defects and limb abnormalities.[2,3]

Department of Anatomy, Regional Centre of College of Physicians and Surgeons, Islamabad

Correspondence: Dr. Hamd Binte Shahab Syed, Department of Anatomy, Regional Centre of College of Physicians and Surgeons, Islamabad.
Contact No.: 03317839298
E-mail: hamdsyed@hotmail.com

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The chicken (Gallus domesticus) embryo develops and hatches in 20 to 21 days and has been extensively used in embryological studies due to completion of developmental processes over a short period of time. A large numbers of eggs can be incubated at one time to obtain embryos at the precise stages of development.[4]

This research was conducted to expose chick embryos to sodium phenytoin to determine the number of dead and alive embryos and compare it with age-matched controls. Poor development of the nervous system can lead to troublesome hatching, therefore the mode of hatching was also observed and noted to be natural or assisted.

MATERIALS AND METHODS

This study was carried out on two main groups A and B, each having 90 eggs. These groups were further subdivided into three experimental (B1,B2,B3) and three control (A1,A2,A3) subgroups. There were 30 eggs in each subgroup. The freshly laid chicken eggs of 'Egyptian fayoumi' breed were collected from Poultry Research Institute (PRI) Rawalpindi. Eggs stored for more than 3 days and cracked eggs were excluded. The eggs were randomly selected according to the random

selection table. All the eggs were first wiped clean with swabs soaked in 70% alcohol and then placed in racks with the blunt end facing upward for ten minutes. This gave the eggs time to dry and allowed the blastoderm to float upward and settle at the blunt end just beneath the air sac. This prevented damage to the embryo from drug injection at the lower pointed end. Two holes were drilled into each egg with the help of a thumbpin, one at the upper blunt end and the other a fingerbreadth above the pointed lower end. The hole at the upper end allowed air to escape from the egg creating a space for the entrance of the drug or normal saline at the lower end. A sterile insulin syringe (needle length 8 mm, 30 gauge) was used to inject 3.5 mg sodium phenytoin per egg in the experimental group and an equivalent amount of normal saline in the control group directly into the egg albumen.[5] The holes were immediately sealed with melted wax and eggs were placed in the incubator. The day the eggs were placed in the incubator was taken as day 0. The temperature inside the incubator was kept at 38±0.5ºC. The relative humidity was kept between 60 and 70%. Adequate ventilation was also maintained. The eggs were rotated ½ turn twice daily.

On day 4 of development the eggs belonging to subgroups A1 and B1 were taken out of the incubator and placed horizontally on a table for ten minutes. This allowed the blastoderm to float upward and take a position over the yolk sac just beneath the shell. The eggs were then broken open in a bowl of warm normal saline. This was a delicate procedure.[6] Starting from the broader end, the shell cap was removed exposing the underlying embryo. Survivability was noted and easily determined by observing the pulsatile beating of the heart, cleanly dissected out and transferred to a petri dish avoiding unnecessary traction and hence, trauma.

On day 9 of development the eggs belonging to subgroups A2 and B2 were taken out of the incubator and the embryos were extracted by the same method as mentioned before. The protective membranes were cleanly dissected away from the embryos. Survivability was noted and the embryos were carefully observed for any gross anomalies.

Chicks belonging to subgroups A3 and B3 were allowed to hatch by themselves till the 22nd day after incubation, after which shells of the chicks, which failed to hatch from the shells on their own were cracked open. Once again the number of dead and alive chicks was noted and recorded. The data was analysed statistically with Statistical Package for Social Sciences (SPSS) computer software program, version 16. Chi-square test was applied to detect any significant difference in survivability between the control and experimental groups. To detect any significant difference between mode of hatching, Fisher's Exact test was applied. A p-value of ≤0.05 was considered to be statistically significant.

RESULTS

The percentage of mortality in each subgroup was calculated from the total number of fertilized eggs.

Percentage of mortality = (no. of dead embryos/total no. of fertilized eggs) x 100

All the chicks belonging to the control subgroups A1, A2 and A3 were alive and well. From the 26 fertilized eggs in subgroup B1, 25 survived and 1 was found dead indicated by a coagulated mass of blood on opening the egg shell. The percentage of mortality calculated for subgroup B1 was 3.84%. In subgroup B2, from 28 fertilized eggs, 24 were alive and 4 died. Of the four dead embryos in the experimental subgroup B2, three showed drastically reduced size and restricted development while one was only macerated blastoderm. The percentage of mortality was found to be 14.28% in subgroup B2. In subgroup B3, from 28 fertilized eggs, 22 survived and 6 were found dead. All the 6 dead chicks exhibited gross reduction in size, whereas 4 of them had abdominal wall defects and one had limb deformities. The percentage of mortality in this subgroup B3 was calculated to be 21.42%. The difference of survival between chick embryos belonging to control and experimental subgroups was found to be statistically significant ($p<0.05$). Also, the rate of survival of the chick embryos decreased with increasing age and duration of exposure. (Table-1)

Table No.1: Comparison of control and experimental subgroups regarding mortality in chick embryos.

Subgroup	Total	Fertilized	Alive	Dead	p-value
A1	30	27	27	0	0.491
B1	30	26	25	1	
A2	30	26	26	0	0.112
B2	30	28	24	4	
A3	30	29	29	0	0.010*
B3	30	28	22	6	

*= statistically significant

Table No.2: Comparison between subgroups A3 and B3 regarding mode of hatching.

Subgroups	Mode of Hatching		
	Natural	Assisted	Total
A3	29	0	29
B3	20	2	22

p=0.181

In subgroup B3, 90% of the live chicks were able to crack open the shell on their own. Rest of the chicks had to be assisted after waiting till 22nd day of the incubation. All the chicks in control subgroup A3 opened the shell on their own on the 21st day of incubation. This difference between subgroups A3 and B3 regarding mode of hatching was found to be statistically insignificant (p 0.1812). (Table-2)

DISCUSSION

The teratogenicity of phenytoin has already been well-documented. Exposure to this anticonvulsant drug during pregnancy leads to increased rate of mortality, growth retardation, dysmorphogenesis and neurobehavioural problems in the newborn.[7,8]

In the present study, the experimental chick embryos exposed to sodium phenytoin showed decreased survival which was statistically significant in comparison to the controls. This is in accordance with a previous study conducted by Singh and Shah[9] in which they directly injected a single dose of 3 mg sodium phenytoin in each egg. This resulted in death of embryos whereas the surviving embryos showed several birth defects including craniofacial, limb and abdominal wall abnormalities.

Several mechanisms have been proposed to explain the cause behind the lethal effects of this drug on the developing embryo. Phenytoin may act as a folic acid antagonist since it produces folic acid deficiency anemia in many patients. The folic acid deficiency can cause neural tube and limb defects with increased mortality rate. The incidence of malformations has been seen to decrease with folic acid supplementation in the diet.[10]

Many developmental processes are directly linked to the redox status of the embryo. Disturbance in the oxidative metabolism by sodium phenytoin increases the production of free radicals and reduces glutathione levels. This oxidative stress can lead to increased mortality in the embryo.[11,12]

Sodium phenytoin exposure can also lead to decreased embryo survival by causing fetal hypoxia, edema and vascular disruption as shown by previous studies.[13,14]

Another proposed mechanism of the phenytoin teratogenicity is the disturbed retinoid metabolism. Retinoic acid is a key player in numerous developmental processes.[15] Previous studies have shown that phenytoin causes an altered expression of genes involved in key morphogenetic events of embryological development including the retinoic acid receptor (RAR) isoforms.[16] Also the plasma levels of retinoic acids were found to be markedly decreased in patients treated with phenytoin.[17]

All of these previous studies throw light on the fact that prenatal exposure to sodium phenytoin leads to teratogenicity and increased mortality of embryo which could occur by a number of different mechanisms. Therefore in our study there was decreased survival of the chick embryos exposed to this drug. Also, the normal gestational period in chicks is 21 days. On day 20 of incubation, the process of pipping begins in which the chick breaks through the eggshell with the help of its beak, the allantois ceases to function and dries up. The process of hatching is completed on day 21 of incubation. In our study, regarding hatching, most of the chicks in experimental group were able to hatch on their own. In the remainder, the delayed hatching was either due to mortality or weakness and diminished mobility in the surviving chicks.

CONCLUSION

Prenatal exposure to sodium phenytoin decreased survivability in chick embryos with increasing age and increased duration of exposure but there was no significant effect on hatching of chicks.

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

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Original Article

Surgical Management of Thyroid Diseases: An Experience at Sandeman (Provincial) Hospital, Quetta

Muhammad Siddique

ABSTRACT

Objective: To evaluate the surgical management of thyroid disease.
Study Design: Observational / descriptive study.
Place and Duration of Study: This study was conducted at the Otorhinolaryngology and Head& Neck Surgery Department Sandeman (Provincial) Hospital, Quetta from March 2014 to May, 2016.
Materials and Methods: This study included 43 patients of thyroid disease of the afore-said period. Medical records of patients were reviewed retrospectively and results were analyzed.
Results: The mean age of the patients was 34.95±11.97 (S.D) years and male to female ratio was 1:7.6.The benign lesions were 88.63% and malignant lesions were 11.63%. Simple multi nodular goiter was 39.53% and was most common cause of thyroid enlargement. Near total thyroidectomy was performed in 34.88% and total thyroidectomy in 30.23%. Other procedures performed were lobectomy with isthmusectomy (27.91%), subtotal thyroidectomy (4.65%) and total thyroidectomy with central compartment lymph node dissection (2.33). The overall complication rate was 16.29%. Hypocalcemia was most frequent complication followed by recurrent laryngeal nerve palsy.
Conclusion: Thyroid disorders are more common in females. Simple multinodular goiter is the most frequent cause of thyroid enlargement. Near total thyroidectomy seems to be optimal procedure for benign thyroid lesions while total thyroidectomy for malignant lesions. Hypoparathyroirdism and recurrent laryngeal nerve palsy are common complications.
Key Words: Thyroid, Goiter, Solitary thyroid nodule, Multi nodular goiter, Thyroid cancer, Thyroidectomy

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INTRODUCTION

Surgery has been the treatment of choice for many disorders of the thyroid gland, both benign and malignant for many decades. Current indications for surgery are compression induced symptoms, malignancy, suspected malignancy, hyperthyroidism and cosmesis.[1-4] The conventional surgical procedures include lobectomy, hemi thyroidectomy, subtotal thyroidectomy, near total thyroidectomy, total thyroidectomy. However, the choice of surgical approach and the extent of tissue resection for the benign thyroid diseases remain controversial.[5] Recent studies have reported total thyroidectomy to be the gold standard treatment for thyroid cancer, multinodular goiter and Grave's disease. However, due to its associated risk of postoperative complications, most surgeons avoid the procedure for the treatment of benign thyroid diseases.[6, 7]

[1.] Department of ENT, Bolan Medical College, Quetta.

Correspondence: Muhammad Siddique,
Associate Professor of ENT Department, Bolan Medical College, Quetta.
Contact No: 0333-7880860
Email: msiddique570@gmail.com

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Near total thyroidectomy has been reported to achieve both low recurrence and complication rates when compared with the rates reported in the literature for total thyroidectomy and has shown to be an effective and safe surgical treatment option for various benign thyroid diseases. However, its long term follow up has not been documented in literature.[6, 8] Thyroidectomy is associated with specific morbidities which are related to the experience of the surgeon, however.[9] The main postoperative complications of this operation are injury to the recurrent laryngeal nerve and hypocalcaemia.[10] The aim of this study was to evaluate the surgical management of thyroid diseases at Otorhinolaryngology and Head & Neck Surgery Department, Sandeman (provincial) Hospital, Quetta.

MATERIALS AND METHODS

This retrospective study was conducted at Otorhinolaryngology and Head&Neck Surgery Department Sandeman (Provincial) Hospital, Quetta from March 2014 to May 2016. Forty three patients of both genders with thyroid diseases were included in this study. Demographic data, clinical features, investigations, surgical management details and complications were noted. All findings were tabulated and results were analyzed statistically to draw inferences.

RESULTS

There were 43 patients of age 16 to 65years with a mean age of 34.95±11.97(S.D) years. Patients included 5 males and 38 females and male to female ratio was 1:7.6. Twenty eight (65.11%) patients presented with goiter and 15(34.88%) patients with solitary thyroid nodules (Figure 1).A total of 38 (88.37%) lesions were benign and 5(11.63%) were malignant. Out of 43patients 17 (39.53%) were simple multinodular goiter cases and it was the most frequent cause of thyroid enlargement. Other causes of goiter were diffuse toxic goiter in 6(13.95%) cases, simple colloid goiter in 3(6.97%) cases, toxic nodular goiter in 1(2.33%)case and papillary carcinoma in 1(2.33) case. Causes of solitary thyroid nodules were papillary adenoma 5(11.63%), follicular adenoma 5(11.63%), papillary carcinoma 2(4.65%), follicular carcinoma 1 (2.33%) and Hurthle cell carcinoma 1 (2.33%) and Hashimoto's thyroiditis 1(2.33%) as given in Table 1. Indications for thyroidectomy were cosmetic reasons in16(37.21%) patients, pressure symptoms in 4 (9.30%) cases, toxic goiter in 7 (16.28%) cases, solitary thyroid nodules in 11 (25.58%) cases and malignancy in 5 (11.63%) as shown in Table 2.

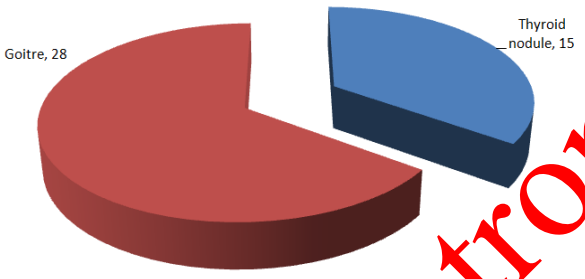

Figure No.1: Presentation of thyroid swelling

Table No.1: Histopathological diagnosis.

Sr. No.	Histopathological diagnosis	Frequency	%age
1.	Simple multinodular goiter	17	39.53%
2.	Simple colloid goiter	3	6.97%
3.	Diffuse toxic goiter	6	13.95%
4.	Toxic nodular goiter	1	2.33%
5.	Papillary adenoma	5	11.63%
6.	Follicular adenoma	5	11.63%
7.	Papillary carcinoma	3	6.97%
8.	Follicular carcinoma	1	2.33%
9.	Hurthle cell carcinoma	1	2.33%
10.	Hashimoto Thyroiditis	1	2.33%

Procedures performed were 12(27.91%) lobectomy with isthmusectomy, 2 (4.65%) subtotal thyroidectomy, 15 (34.88%) near total thyroidectomy, 13 (30.23%) total thyroidectomy and 1 (2.33%) total thyroidectomy with central compartment lymph node dissection (Table 3). Complications of thyroidectomy were seen in 7 (16.28%) cases. Permanent vocal cord palsy was observed in 2 (4.65%) cases, hypoparathyroidism in 3 (6.97%) cases, haematoma formation in 1 (2.33%) case and wound infection in 1 (2.33%) case.

Table No.2: Indications for surgery.

Sr. No.	Indications	No.of patients	%age
1.	Cosmetic reasons	16	37.21%
2.	Pressure symptoms	4	9.30%
3.	Toxic goiter	7	16.28%
4.	Solitary thyroid nodules	11	25.58%
5.	Malignancy	5	11.63%

Table No.3: Surgical procedures performed. (N=43)

Sr. No.	Operation	No. of patients	%age
1.	Lobectomy plus isthmusectomy	12	27.91%
2.	Subtotal thyroidectomy	2	4.65%
3.	Near total thyroidectomy	15	34.88%
4.	Total thyroidectomy	13	30.23%
5.	Total thyroidectomy plus central compartment lymph node dissection	1	2.33%

DISCUSSION

Thyroid surgery offers definitive treatment for thyroid diseases with relatively low complication rates. In this study the mean age was 34.95±11.97 (S.D) years, which is comparable to that reported by Jawaid M A et al., in which observed mean age to be 35.45±15.16 (S.D) years[9], while mean age reported by KhanzadaTW et al., was 32±8.224 (S.D) years.[10]In contrast Bakheit M A et al., observed mean age to be 42 years.[11] Thyroid diseases are common in females than males. In this study the male to female ratio was 1:7.6 which is comparable to other studies.Mizrakarimov F et al, observed a male to female ratio of 1:7.8[12] while Khanzada TW et al, observed a male to female ratio of 1:9.[10] In this review 88.37% lesions were benign and 11.63% lesions were malignant. In our study simple multinodular goiter (39.53%) was the commonest cause of goiter followed by diffuse toxic goiter (13.95%) and simple colloid goiter(6.97%).This is consistent with some local studies in which multinodular goiter was found to be the commonest cause of thyroid enlargement.[9,10,13,14,15] We found solitary thyroid

nodules in 34.88% cases. Papillary and follicular adenomas were common causes of solitary thyroid nodules, which is comparable with the study of Khanzada TW et al.[10] The large majority of thyroid nodules are benign, with an overall reported risk of malignancy from 5% to 15%.[16] The overall frequency of malignancy in this study was about 11.63%. This is comparable to Khanzada's study, reporting 11% malignancy.[10]However, Jawaid MA et al., and Hussain N et al., observed14.7% and14.3% malignancy in their studies respectively.[9,17] In this study papillary carcinoma was 6.97%, follicular carcinoma was 2.33% and Hurthle cell carcinoma was 2.33%.

Thyroidectomy is a common operation with an extremely low mortality.[18] Indications for this operationinclude cosmetic problems, obstructive symptoms, hyperthyroidism, malignancy and clinical suspicion for malignancy. In this study cosmetic reasons was the most common indication for thyroidectomy. This finding is similar to studies done elsewhere.[8,19,20] In contras Acun et al, reported toxic symptoms as the most common indication for thyroidectomy.[6]All patients were managed surgically. In this study neartotalthyroidectomy (34.88%) was the commonest surgical procedure performed. Other procedures were total thyroidectomy(30.23%), lobectomy with isthmusectomy (27.91%), subtotal thyroidectomy (4.65%), and total thyroidectomy with central compartment lymph node dissection (2.33%). In study of JawaidMA, et al, the surgical procedures performed included 35.9% lobectomy with isthmusectomy, 31% subtotal thyroidectomy, 23.3% total thyroidectomy, and 9.8% near total thyroidectomy.[9] Khanzada T W, et a., reported 37.1% hemi thyroidectomy, 40.7% subtotal thyroidectomy, 7.8% neartotalthyroidectomy and 13.5% total thyroidectomy[10], while in study of Baliz et al, thyroid lobectomy was carried out in 20.8% and total thyroidectomy in 79.2% cases. Tezelman S ,et al.,recommended total or near total thyroidectomy in benign multinodular goiter to prevent recurrence and to eliminate the necessity for early completion thyroidectomy in case of final diagnosis of thyroid carcinoma.[22] Near total thyroidectomy for toxic goiter seems to reduce the rate of recurrent hyperthyroidism compared to subtotal thyroidectomy.[23]Initial total thyroidectomy can be safely performed for both benign and malignant thyroid diseases in a less-developed region. The morbidity of a secondary surgical procedure after subtotal thyroidectomy is significantly high as compared to first-time surgery.[24] However, near total thyroidectomy causes a significantly lower rate of hypoparathyroidism compared to total thyroidectomy.[25] Complications of thyroidectomy are largely related to the magnitude of the operation and the experience of the surgeon involved.[26] The overall postoperative complication rate in this study was 16.29%. Permanent vocal cord palsy was observed in 4.65% cases, hypoparathyroidism in 6.97% cases, haematoma formation in 2.33% cases and wound infection in 2.33% cases. Chalya PL et al., observed a postoperative complication rate of 7.9%.[27]While Khanzada TW et al., observed a complication rate of 10.7% and Jawaid MA et al., observed 6.5% complication rate.[9,10]Sancho JJ et al., stated that branched inferior laryngeal nerves suffer more surgical injuries and are twice as likely to be associated with vocal cord dysfunction.[28]Incidence of hypoparathyroidism is high after thyroidectomy for cancer.[23]

CONCLUSION

Thyroid diseases are more common in females. Simple multinodular goiter is the most common cause of thyroid enlargement. Near total thyroidectomy seems to be optimal surgical procedure for benign thyroid lesions and total thyroidectomy for malignant lesions.Recurrent laryngeal nerve palsy and hypoparathyroidism are common complications of thyroidectomy.

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

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Original Article

Modular System of Education

Teacher's Perspective on the Modular System of Education - A Study on Government Medical College Teachers and Their Views on Educational Systems

Kiran Mehtab[1], Saima Hamid[2], Tafazuul H. Zaidi[1] and Sheh Mureed[2]

ABSTRACT

Objective: To assess the level of satisfaction about different systems among medical college teachers. To compare their preference among the modular and annular system and to assess percentage of faculty in favor of reverting back to old system.

Study Design: Cross sectional study.

Place and Duration of Study: This study was conducted at the Department of Community Medicine, SMC, JSMU, Karachi from January to May 2016.

Materials and Methods: A study was conducted on a sample of 122 teachers from 3 government medical colleges (DMC, SMC and DIMC). Of these, 65 were male and 57 were female. From DMC 52, SMC 43 and DIMC 27 teachers participated in filling the questionnaire. The sample was taken through Non-Probability Purposive sampling from the three medical colleges. An informed verbal consent was taken from the candidates. Pilot study was conducted to assess the authenticity of the questionnaire. A structured questionnaire was then distributed, got filled, data was entered and analyzed using SPSS version 21, with 95% confidence interval and 0.05 p-value.

Results: A total of 122 teachers from 3 government medical colleges (DMC, SMC and DIMC) were asked to fill the questionnaire. From the total teachers 54.7% believed that modular system focused more on theoretical learning while 42.6% said that it focused on practical learning. 72.6% of teachers said that modular system is more stressful compared to 27.04% who disagreed. 51.6% said that the stress affected their teaching and 48.4% said otherwise. 91% teachers said that there was a need that teachers should be trained on how to teach according to the modular system while 9% said there was no need for training the teachers. 62.3% teachers said that the modular system did not allocate enough time to each subject as allotted by PMDC while 37.7% disagreed. 69.3% teachers said that the annual system gives sufficient time to each subject per PMDC guidelines while 30.7% disagreed. 64.8% teachers said that their institute should revert back to annual system of teaching while 35.2% disagreed. 64.8% teachers chose 'annual system' as their preferred system of education while 35.2% opted for the 'modular system'.

Conclusion: The study concluded that the teachers of government medical colleges where module system has been implemented would like their institutions to revert back to the 'annual system' of teaching, declaring the latter their preferred system of teaching. They believed that the modular system was more stressful and focuses more on theoretical learning rather than practical learning.

Key Words: Modular system, annual system, teaching, teachers perspective, system, medical education

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INTRODUCTION

The transition of the medical curriculum from a classical didactic and discipline-based approach to integrated PBL has been adopted by many institutions around the globe and it is in process of implementation in Pakistan as well.[1]

Modular system allows students to concentrate on only one course for an entire term. The modular system enhances learning by providing students with intensive and focused time on each topic[2].

It involves Problem-based learning (PBL) which is a student-centered pedagogy in which students learn about a subject through the experience of problem solving. Students learn both thinking strategies and domain knowledge[3]. Problem-based learning (PBL), an instructional method of hands-on active learning, is centered on the investigation and resolution of simulated real-world problems[4] .Also this new system offers a better learning experience as PBL students were significantly more successful in the knowledge test[5] according to a research spending a lot of academic

1. Department of Community Medicine, Sindh Medical College, JSMU, Karachi
2. Health Services Academy, Islamabad

Correspondence: Dr Tafazuul H. Zaidi, Assistant Professor, Sindh Medical College, JSMU, Karachi
Contact No: 0300-9232695
Email: drtaf2002@yahoo.com

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time on developing new material for integrated self-directed learning was the worst part, the transition period with double teaching (which stretched our resources to the limits) was even worse[6].Centers that have adopted a PBL approach have found improved student motivation and enjoyment, but there has been no convincing evidence of improved learning. [7] According to an article, PBL appears to devalue academic expertise. Students will not achieve the "gold highest ratings in the areas of student interest, clinical preparation, and medical reasoning and its lowest ratings in the teaching of factual knowledge in the basic sciences and efficiency of learning.[8]

The annular system in contrast was more of a didactic method of teaching A didactic is a teaching method that follows a consistent scientific approach or educational style to engage the student's mind [9]. It is often suggested that the traditional didactic lecture is more passive in nature and less effective as a teaching tool. However, a well-organized lecture remains one of the most effective ways to integrate and present information from multiple sources on complex topics [10]

The conventional old teaching system gives the instructor the chance to expose students to unpublished or not readily available material and to allow the instructor to precisely determine the aims, content, organization, pace and direction of a presentation[11]

According to a study comparing the outcome of the conventional curricula and the problem based curricula it was noted that Students in the PBLC produced extensive elaborations using relevant biomedical information, which was relatively absent from the CC students' explanations. However, these elaborations were accompanied by a tendency to generate errors. These results have important implications regarding the strengths and weaknesses of the two types of curricula[12]

Our study aims to identify the perception of our teachers towards the transition from the conventional curricula to the new problem based, integrated modular learning, as Faculty perceptions of the educational environment will have a strong bearing on the learning environment of the students.

There are several difficulties in implementing an integrated approach. However, not integrating is detrimental to statistics and research methods teaching, which is of particular concern in the age of evidence-based medicine[14] so here we are trying to find out whether the teaching staff is comfortable with the new ways of teaching?[15]

MATERIALS AND METHODS

A Cross-sectional study was conducted on a sample of 122 teachers from 3 government medical colleges (DMC, SMC and DIMC). Of these, 65 were male and 57 were female. From DMC 52, SMC 43 and DIMC 27 teachers participated in filling the questionnaire. The sample was taken through Non-Probability Purposive sampling from the 3 medical colleges. The study was carried out within a period of 8 months from January to May 2016. An informed verbal consent was taken from the candidates. Pilot study was conducted to assess the authenticity of the questionnaire. A structured questionnaire was then distributed, got filled, data was entered and analyzed using SPSS version 21, with 95% confidence interval and 0.05 p-value.

RESULTS

A total of 122 teachers from 3 government medical colleges (DMC, SMC and DIMC) were asked to fill the questionnaire. From the total teachers 54.7% believed that modular system focused more on theoretical learning while 42.6% said that it focused on practical learning. 72.6% of teachers said that modular system is more stressful compared to 27.04% who disagreed. 51.6% said that the stress affected their teaching and 48.4% said otherwise. 91% teachers said that there was a need that teachers should be trained on how to teach according to the modular system while 9% said there was no need for training the teachers. 62.3% teachers said that the modular system did not allocate enough time to each subject as allotted by PMDC while 37.7% disagreed. 69.3% teachers said that the annual system gives sufficient time to each subject per PMDC guidelines.

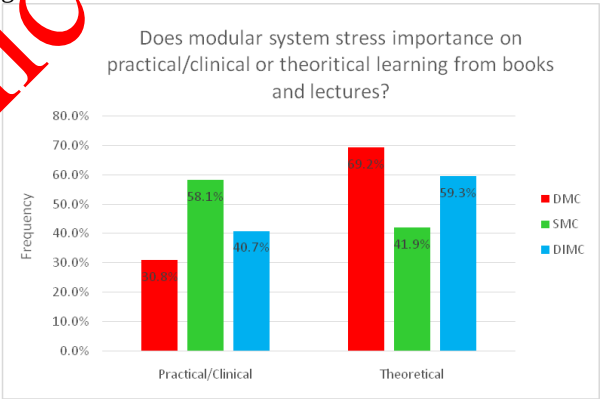

Figure No.1. Modular System gives more importance to Practical learning or Theoretical

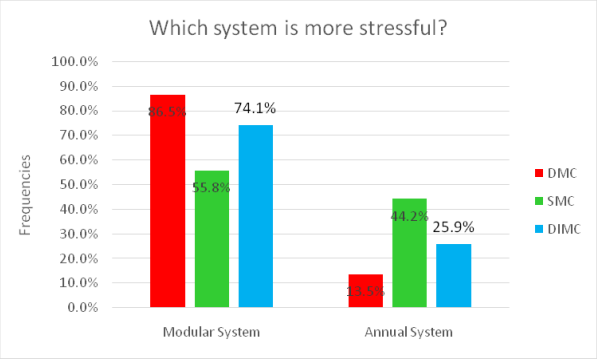

Figure No. 2: System stressful for faculty members

while 30.7% disagreed. 64.8% teachers said that their institute should revert back to annual system of

teaching while 35.2% disagreed. 64.8% teachers chose 'annual system' as their preferred system of education while 35.2% opted for the 'modular system'.

DISCUSSION

Practical learning is basically the clinical skills a doctor has, and his approach to treat the same disease in different patients. Practical learning sharpens one's capability and capacity to perform skills, while the theoretical knowledge is only the bookish knowledge which a student learned during his 5 year course of M.B.B.S, it doesn't involve any interaction with the patients nor any practical skills. Practical learning holds quite a lot of importance as a doctor who actually deals with the patients and their lives does he has to be perfect in his clinical skills not just aiming to take high grades during his MBBS course. As per students point of view this comparison between theoretical knowledge and practical skills is very important as he is the one who has to pursue what he has been taught in his carrier afterwards. The students study a lot of modules throughout the course which aim to develop their knowledge, understanding and practical skills in quantitative and qualitative manner. Problem-based learning (PBL), which incorporates principles of adult learning, is an important innovation in medical education. The use of PBL in health professional curricula is becoming more widespread. The curriculum design and the ways of implementing PBL are different among schools[16].

Upon the data analysis 57.4% of the teachers have this view that modular system just focuses on the bookish knowledge and is not giving emphasis on students practical skills .On the other hand 42.6% of the teachers think that modular system is successful in sharpening the practical skills of the students along with their theoretical knowledge .

According to the data in this table 51.6% teachers agreed that stress affects their teaching.[17] this stress is due to the short period of time they got to cover a lengthy topic. They have to make sure that they cover all the main points regarding that topic and that every student understands it well. In most cases this becomes difficult for them to manage, especially in the modular system because there are a lot of subjects and lengthy topics to cover in a short period of time. As a result, students have to cram in a lot of things or refer to short books which do not clarify most of the concepts. This way, neither the teachers nor the students are satisfied. The imperative role of teachers as guide, mentor, reporter and program director in changing students' attitude by developing, activating, implementing, testing, and refining their ideas as well as making instructional decisions for educational policies cannot be overlooked.[17] The perception of faculty therefore, has to be evaluated in terms of program deficiencies, student's performance, personal learning and obstacles faced during the implementation of integrated learning strategies.[18]

For our research we went to different teaching faculties of SMC, DMC and DIMC. Our research is done to know about the difficulties teachers have face regarding the newly introduced system of education in our government medical universities i.e., modular system which is being followed since 2009. One of the several problems teachers had to face was their inability to understand and teach the modular system as all the faculty members who participated in our research had learnt under the annual system and have taught annual system till 2009 when modular system was introduced so they had better understanding of annual system. Since the introduction of modular system the teaching faculty was not satisfied with this system because its introduction and implication was sudden and they were not trained for modular system prior to its implication. In other parts of world effective teachers training programs are done to keep the teachers up to date and understand the modular system completely.[19] Still now there is no facility available to train these faculty members that is why the teaching faculty is not satisfied with modular system which is reflected in our results as 91% teachers were not in favor of teaching modular system without being trained on how t teach according to the new curriculum. Since the teachers are not trained according to this system they are unable to deliver their knowledge to students properly.

Each subject holds its equal importance in medical study and all are interlinked to one another, so necessary time should be allocated to each subject[20] .This point is really important as it's a natural practice to allot specific time to each subject being taught in the education systems all over the world, and even not in just medical teaching, rather all walks of teaching. Likewise, the European system of education has also built up a chart for the recommended time period for every subject so that the universities, colleges and schools under it can properly follow that.[21] it is no doubt mandatory for the education systems to abide by these set rules. Therefore we raised this question in our research paper, so that we can get to know that whether a student can hold a solid grip of each subject, whether he/she can retain the bulk of that knowledge given to him and then link his/her previously studied knowledge with what he/she will study in the upcoming years and to finally be able to practice all this during years of his/her medical profession. 37.7% teachers felt that modular system does allocate each subject necessary time[22]. While 62.3% teachers disagreed and answered no to the question. As for students point of view they also feel that modular system focuses on major subjects and minor subjects are left behind. The time allotted by PMDC to each subject is not sufficient in modular system to cover the course outline.

In order to know does the annual system allocate the necessary time to each subject, we access and evaluate the time distribution given to each subject individually in the 5 year course of MBBS, from a teacher's aspect, compare the efficacy of annual system in imparting enough knowledge in the designated time period to each subject being taught. Apart from the teachers' point of view, a student also personally feels that the time allotted in annual system for each subject is enough for each subject and the student can easily reproduce of what he has been taught. Upon the data analysis, (referred to table 1), 69.7 % teachers think that yes the time given in annual system is sufficsient for the student to understand each subject to its depth. While 30.3 % teachers feel that no, the time given in annual system for each subject is not enough for grasping the taught knowledge wholly, rather all subjects are taught in a hurry and a student cannot actually succeed in understanding all subjects in the due period of time. [23]

The purpose of our study was to evaluate which system of medical education is preferred by the teaching staff of medical universities which have implemented both modular and annual system of education in the past, based on their own teaching experiences. Institutions that follow modular system, implement a teaching methodology in which clinical and more practical subjects are started from the initial years. This methodology aims at introducing practical approach from the beginning to improve the understanding of clinical knowledge and concepts. But this is done at the behest of further increase in study load, while the traditional burdens associated with notorious medical education system are still there. The situation is further exacerbated due to inappropriate integration of the subjects and lack of management and planning. [24]

Hence, taking into account the stress of teaching, the time factor, and the training required to perform well under a newer system of education, our questionnaire included the option to revert back to the previous method of teaching. 64.8% of the teachers who filled the questionnaires opted to revert back to the annual system, while 35.2% wished to continue with the current modular system. [25]

In order to implement and practice an effective system of education in medical schools amongst modular and annual systems, teachers' perspective is the key. Teachers with their knowledge and plenty of experience in teaching, in both the systems of education, are well aware of benefits and drawbacks of these systems. Knowing teachers' preferred system of education is significant because it is their job to impart knowledge, to cover the whole syllabus in designated period of time and since both these systems follow a completely different method of teaching, and its teacher's responsibility to make students accomplished and capable of practicing the knowledge in the field. In our research on data analysis we observed that 35.2% of teachers' preferred system of teaching is modular while the rest i.e., 64.8% favored annual system.[26]

Adopting a modular approach can disrupt the provision of a coherent and developmental course. In modular system, courses examined in stages, with the ability to take exams an unlimited number of times is unfair to those who have to take a annual exam and work hard to achieve a good result the first time, as they haven't had the same opportunity to simply re-sit if they are unhappy with their grade. So the return to a linear structure will help reduce the dangers of over-assessment of young people, give more time to teachers for teaching and increase the opportunities to teach whole subjects in a joined up way rather than in bite-sized chunks because the deadlines on units can limit a teacher's ability to teach important topics in the way that he or she would choose. [27]

Implementing PBL in schools and Universities is a demanding process that requires resources, a lot of planning and organization. [28] Prepare faculty members for change, establish a new curriculum committee and working group designing the new PBL curriculum and defining educational outcomes.[29] Seeking advice from experts in PBL. Planning, Organizing and Managing Training PBL facilitators and defining the objectives of a facilitator introducing Students to the PBL Program using 3-learning to support the delivery of the PBL program, changing the assessment to suit the PBL curriculum.[30] Encouraging feedback from students and teaching staff. Managing learning resources and facilities that support self-directed learning and continuing evaluation and making changes.[31] although difficult the changes could go a long way in improving the quality of medical education in Pakistan and producing efficient doctors for the country.

CONCLUSION

The study concluded that the teachers of government medical colleges where module system has been implemented would like their institutions to revert back to the 'annual system' of teaching, declaring the latter their preferred system of teaching. They believed that the modular system was more stressful and focuses more on theoretical learning rather than practical learning.

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

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