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Editorial

Olive: its medicinal qualities, some religious connotations and its commercial benefits

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**&
Editor in Chief**

There is a thick growth of Olive trees on the hilly side of the road leading to Murree from Islamabad. However, these trees are wild and only give fruit after 50 years. Considering the beneficial value of the Olive oil for the massage of hair, body and aching joints, it was a pleasant surprise learn that the Government of Pakistan, in collaboration with the Embassy of Italy in Islamabad, has initiated a project to harness the wild Olive and make them productive.

The increasing demand for edible oils in Pakistan has made the Government realize that it has to increase and support their national production from traditional crops – such as canola, sunflower and soybean – as well as explore the possibility of ensuring a sustainable production of their other kind from palm, coconut and olive.

Unfortunately, large part of these national forests of wild olives were systematically destroyed over the last 20-30 years, and the wood was sold in the local markets as fuel.

Pakistan can earn about \$10bn by bringing its cultivable potential waste lands under olive cultivation besides converting eight million wild olive trees, present in different regions, into productive trees through grafting. Over 800,000 hectares of land, in 28 districts of Balochistan and Khyber-Pakhtunkhwa, has already been identified, after completion of a one-year project (Promotion, production and Commercialization of olive oil in Pakistan) with the Italian government's help for growing olive. If exploited, olive can considerably reduce the country's import bill for edible oils. The new plantation, according to experts, may earn for the nation \$9bn annually whereas the grafting of wild olive groves can yield an income of \$1bn annually.

The secret of the olive tree is in two things: its fruit – the olive itself and its over 20 feet massive underground root system, which enables the tree to withstand droughts.

An integral part of diet in the Mediterranean region, olive is believed to be one of the earliest trees cultivated by man. Native to Asia, olive belongs to oleaceae family and comprises 30 genera with 600 species. Olive oil is widely used in countries where fats are scarce. In South Asia, wild olive (*olea Cuspida*) is found within the northwest Himalayas and other adjoining hills, but cultivated olive (*olea Europea*) is not grown anywhere

on commercial scale. In Pakistan, olive is known as Zytoon in Urdu, Showan in Pushtu, Khat in Brahavi and Kow in Punjabi, Sindhi and Saraiki.

Mentioned seven times in the Holy Quran, the health benefits of olive have been propounded in Tibb-e-Nabvi (The Holy Prophet's system of medicine). According to Hazrat Abu Hurairah, the Holy Prophet Muhammad (PBUH) said, "Eat olive oil and apply it (locally), since there is cure for 70 diseases in it, one of them is leprosy." Hazrat Alqama Bin Amir quotes the Holy Prophet (PBUH), as saying "There is olive oil for you, eat it, massage over your body, since it is effective in Hemorrhoids (Piles)."

The Vitamin E contained in olives is the body's primary fat soluble antioxidant, which helps to strengthen the digestion and body's immune system, reducing cholesterol level, severity of asthma, cancer, osteoarthritis, rheumatoid arthritis, and premature ageing as well as delaying the effects of ageing, including wrinkles.

Olives contain compounds called polyphenols that appear to have significant anti-inflammatory properties. Used as balm, olive fortifies limbs and hair, keeping the later shiny and dandruff free. When applied to body, it fortifies and moisturizes the skin, softening it, combating inflammation and dry skin. It combats against acne, aches and pains from tired muscles.

Tea prepared from olive leaves helps against high blood pressure, while decoction of olive leaves in water is effective against mouth and lip ulcers and allergic dermatitis. The concentrated aqueous extract of olive leaves and fruits is effective against dental cavities and its application shows good effects on leukoplakia in mouth. When this solution is applied with vinegar on alopecia, it grows the hair and removes alopecia. Local application of this extract removes scabs of small pox and boils.

The oil procured by burning of olive wood is effective against fungal infections. The application of olive oil in eyes relieves inflammation, while its massage tones up the body muscles / organs and relieves muscular pains. Some physicians also advocate olive oil massage for epilepsy.

The ointments prepared from olive oil are good healing agents, which quickly heal sinus and fistula. A

conventional regimen, comprising of olive oil and herbal rugs, dissolves and expels gallbladder stones.

A chance testing at a scientific meeting in Sicily has led to another reason for including olive oil in your diet.

The pungent liquid turns out to contain a compound that has the same molecular action as ibuprofen, the widely used painkiller, researchers at the Monell Chemical Senses Center in Philadelphia report in the Sep. 1 issue of *Nature*.

And that similarity means that olive oil may offer the same health benefits as low-dose use of anti-inflammatory drugs such as ibuprofen, said research leader Paul A. S. Breslin. Those benefits include a reduced risk of heart attack, stroke, some cancers and Alzheimer's disease.

The research effort had its beginning at a meeting on molecular gastronomy, where Gary Beauchamp, director of Monell, was offered some newly pressed extra virgin olive oil.

"He tested it and it stung in his throat the same way as ibuprofen, a distinct sensation," Breslin said, "He brought that virgin olive oil back to us. We isolated a compound from it, synthesized it and tested it for activity."

The newly discovered compound has been named oleocanthal by the Monell researchers. Tests show that it inhibits cox-1 and cox-2, molecules associated with pain and inflammation, just as ibuprofen does.

But the action of oleocanthal is much weaker than that of ibuprofen. It would take 500 grams of olive oil to get the effect of the ibuprofen dose recommended for adult pain relief.

Breslin certainly is not recommending that high a daily dose of olive oil. But he did say the new finding offers another reason for Americans to adopt the Mediterranean diet, which is rich in fish, unsaturated fat, fresh vegetables and olive oil.

"You could take a baby aspirin every day, but the Mediterranean diet offers the same health benefits," he said.

Olive oil can be substituted for some of the fat-rich products that abound in the current American diet, Breslin said. "You can put butter on your toast or dip it in olive oil, he said. "It's a no-brainer."

The health benefits of olive oil already have official federal approval. Last November, the U.S. Food and Drug Administration authorized advertisements saying that olive oil helps reduce the risk of coronary disease.

The best olive production and fruit quality occurs in areas having mild winter and long warm dry summer. Olive trees can be planted during spring and fall. However, fall is best if there is no likelihood of frost during winter. Although olive is a hardy tree, it requires timely irrigation during the early two years. If it does not rain, trees should be irrigated twice or thrice in a

year, preferably before flowering, after flowering and 30-45 days before fruit maturing.

Currently Pakistan meets some 73 percent of its edible oil requirements of around 2.8 million tons from imports entailing an annual expenditure of US \$ 1.7 to 2.2 billion. To lessen dependence on edible oil imports, the government launched a programme, in 2001, envisaging increasing domestic production of sunflower, oil palm, canola and extra-virgin olive oil.

Adopting a two-pronged approach of grafting and new plantation, the government has converted most of the olive trees into oil-bearing species of the European type olive at a cost of about Rs.186.370 million.

Under new plantation, olive orchards have already been established over 955 acres of land in Khyber-Pakhtunkhwa (at Tarnab-Peshawar, Sangbhatti, Khawoo, Kandare and Toru Kas in Mardan district and Pirsabak in Nowshera district), Punjab (Potohar) and Balochistan launched in 2005, the project, which envisaged an expenditure of Rs.39.185 million, aimed at cultivating over 300,000 olive saplings in Khyber-Pakhtunkhwa, Punjab and Balochistan.

Now, the government is mulling a Rs.382 million project – "Commercialization and Promotion of olive and olive products for economic development and poverty alleviation" – with Italy's help and assistance, aimed at utilizing cultureable wastelands, forest lands and sub-mountainous areas for massive cultivation of olive. According to experts, one ton of oil can be extracted from olive trees spreading over one hectare of land.

The Italians have also provided training to 1,500 workers in olive cultivation/harvesting and provided an oil extraction plant, having a capacity of 400 kilogram per hour; under the earlier agreement. Meanwhile, the government has itself purchased four oil extraction units having a capacity of 50 kilogram per hour.

A time may not be far when the dream of using local olives as an edible oil becomes a reality

Original Article

Lipid Profile in non-obese and non-diabetic Hypertensive Patients

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ABSTRACT

Purpose of Study: To find out the frequency and pattern of lipid abnormalities in non-obese and non-patients suffering from essential hypertension.

Design of Study: This is the cross sectional descriptive study.

Place and Duration of Study: The study was conducted at the Department of Medicine and its OPD, Jinnah Hospital, Lahore from July 2009 to February 2010.

Materials and Methods: 100 patients were included in the study. Patients were taken randomly. Blood samples were checked in Pathology laboratory of the hospital.

Results: Increase in total serum cholesterol was seen in majority of patients. Increase in total cholesterol showed an increasing trend with the time duration of hypertension. Highly atherogenic LDL-cholesterol was increased in majority of patients. One patient of familial combined hyperlipidemia was also detected.

Conclusion: Physicians should be careful while treating hypertensive patients. Lipid profile should be advised not only in obese and diabetic but also in thin lean non-diabetic, hypertensive patients. If we treat dyslipidemia in hypertensive patients we can decrease the coronary artery disease risk to an appreciable level.

Key Words: Non-obese, Non-diabetic, hypertensive

INTRODUCTION

Hypertension is the leading cause of cardiovascular diseases worldwide ^[1]. In 2000 more than quarter population were hypertensive, a number totally one billion and suggests that by 2025 that number will climb up to 29% or i.56 billion people worldwide ^[2].

There is a myriad of factors playing their roles, directly or indirectly in the genesis of hypertension. Some of the worth mentioning include age, sex, occupation, amount of salt and alcohol intake, smoking, various hormone levels, amount of total cholesterol and pattern of lipid profile ^[3]. Obesity especially the central obesity and diabetes mellitus are among the key players and their role has been universally acknowledged ^[4].

Decreased HDL cholesterol is the most common variety of dyslipidemias in patient with essential hypertension and this frequently co-exist with essential hypertension^[5].

Hypercholesterolemia is associated with increased prevalence of cardiac events and is characterized by impaired coronary vascular function. This dysfunction is mediated partly through increased oxidative stress and partly through shift in oxidative stress ^[6].

It is the LDL-type of hypercholesterolemia which paves the way to hypertension. If LDL-particles are taken from patients with essential hypertension they exhibit enhanced susceptibility to oxidation in vitro. This is the abnormality which is thought to increase the cardiovascular risk. If Blood Pressure is controlled

effectively in non-obese non-diabetic hypertensive patients this abnormality can be reversed, though not fully but part of it ^[7].

Evidence suggests that hypertension may share similar pathophysiology with cardiovascular disease. Thus dyslipidemia is strong predictor of cardiovascular disease, may also predict incident hypertension ^[8]

Endothelial cell is no more considered just an architectural unit of blood vessel lining it is a large organ which secrete several growth factors and vasoactive substances include prostaglandins, thromboxane, nitric oxide and endothelins^[9]. Endothelial dysfunction is an important contributing factor in hypertension and is subject of extensive research which has proved that hypercholesterolemia is one of the predisposing factors in arterial dysfunction^[10].

The aim of my study was to see the lipid profile/lipid abnormality in selected hundred patients who are neither obese nor diabetic but are suffering from hypertension. Insulin resistance leading to dyslipidemia is also found in non-obese individuals. This insulin resistance dyslipidemia eventually leads to hypertension ^[11, 12]. Insulin resistance in non-obese individuals suffering from hypertension has been found in Africa ^[13]. It has also been mentioned in our part of world i.e. South East Asia ^[14]. The non-obese individuals can acquire this problem through inheritance ^[15].

At international level it was the Tromso study in which a cross-sectional relationship of total serum cholesterol, high density lipoprotein cholesterol, non HDL-cholesterol and triglyceride levels with blood pressure in a population of 8081 men, 20-50 years old, 7663 women of 20-49 years old were studied. In this study it was shown that total and non HDL cholesterol levels increased significantly with increasing systolic and diastolic blood pressure in both sexes ^[16].

At the national level a similar study was carried out in indigenous population of Multan in year 2003^[17]. As the indigenous population of Multan is different from the catchment population of Jinnah hospital Lahore it will be worthwhile and useful study to be carried out. It will help us in the understanding of abnormal lipid patterns, selection of drug for specific lipid abnormality and even in genetic counseling.

MATERIALS AND METHODS

This cross sectional descriptive study was carried out from July 2009 to February 2010 in Outpatient Department of Jinnah hospital Lahore. A total of 100 patients were included in the study. Patients were taken randomly. Blood samples were checked in Pathology laboratory.

RESULTS

Out of 100 patients, 51 (51%) were male and 49 (49%) were female (Table-1).

The maximum number of patients was in the age group 45-50 years and minimum number of patients was in the extreme range groups 35-40 years as shown in table-2.

Out of 100 patients, 18 (18%) were smokers and 82 (82%) were non-smoker (Table-3).

Majority of patients (55%) were having high blood pressure for more than 5 years duration (Table-4).

Forty six patients had cholesterol in the range of 151-200mg/100ml, 45 had cholesterol in range of 201-250mg/100ml. (Table-5).

Most of the patients with hypertension less than 5 years had mean TLC level 198.4 ± 20.8 (Table-6)

Twenty one patients had LDL cholesterol in range of 150-159mg/100ml. seven patients had LDL cholesterol in range of >159 (table-7).

Table 1: Distribution of cases by sex

N=100

Sex	Number	Percentage
Male	51	51.0
female	49	49.0
p-value	P>0.05	

Table 2: Distribution of cases by age

N=100

Age (year)	Number	Percentage
35-40	07	7.0
41-45	25	25.0
46-50	28	28.0
51-55	18	18.0
56-60	14	14.0
>60	08	08.0
Mean SD	46.4±13.3	

Table 3: Distribution of cases by smoking

N=100

Smoking	Number	Percentage
Yes	18	62.0
No	82	38.0
P value	P<0.001	

Table 4: Distribution of cases by duration of hypertension

N=100

Duration (year)	Number	Percentage
1-5	45	45.0
>5	55	55.0
Mean plus minus SD	6.2±4.2	
p-value	p>0.05	

Table 5: Duration of cases by total cholesterol

N=100

Total cholesterol Mg/100ml	Number	Percentage
<150	04	04.0
151-200	46	46.0
201-250	45	45.0
>251	05	05.0
Mean±SD	205.2±38.3	

Table 6: Effect of hypertension on TC, HDL, LDL

Duration (year)	No	T.C (mg/dl)	HDL (mg/dl)	LDL mg/dl
<5	55	198.4±20.8	43.8±6.8	141.5±9.5
6-10	27	204.9±20.9	45.9±7.2	142.0±13.2
>10	18	217.7±78.6	48.0±15.4	144.2±17.2

Table 7: Distribution of cases by total low density lipoprotein (LDL) Cholesterol

N=100

Low density lipoprotein	Number	Percentage
119-129	08	08.0
130-139	21	21.0
140-149	43	43.0
150-159	21	21.0
>159	07	07.0
Mean±SD	142.7±12.2	

DISCUSSION

The study in hand consisted of a limited population of men and women. Total number of patients included was one hundred. Out of these 51% were male and 49 % were female. Almost all groups were given representation. This study had allowed a detail analysis of the association between hypertension and lipid abnormalities which included three variables total cholesterol, low density cholesterol and high density cholesterol.

Majority of patients had mean total cholesterol 198.4 plus minus 20.8. Highest mean level of total cholesterol was found in the age group of 46-50 years with mean TC level 208.9 plus minus 30 and in the age group of 51-55 years with mean TC level 208.6 plus minus 12.6

Male and female had almost the same levels of total cholesterol. Smokers had relatively higher levels of total cholesterol. Patients with rural background had been found to have more total cholesterol than urban dwellers. LDL-cholesterol showed an increasing trend with increase in the duration of hypertension.

Highest level of LDL cholesterol was found in the age group of 41-45. Sex had no statistically significant effect on LDL cholesterol. Smokers had relatively high level of LDL cholesterol than non-smokers. Place to which patients belonged did not effect LDL cholesterol levels significantly. HDL increased with increase in duration of hypertension. Sex, smoking, place of living had no significant effect on HDL cholesterol.

Coronary artery disease has been emerged as one of the biggest concern of morbidity and mortality not only globally but also in our motherland. Diabetes mellitus, hypertension, smoking, gender, life style, dietary patterns, levels of certain hormones are the major contributors which have been universally acknowledged. Still some new ones are coming up like elevated levels of lipoprotein and cholesterol ester transfer protein.

This study had helped us to consider the timely evaluation of lipid profile in hypertensive patients so that we can counter the multiplicative effects of these risk factors as had been done in Australia where a decline of 83% from the 1968 peak by the year 2000 has been seen.

The study had allowed us a detailed analysis of the association between hypertension and total cholesterol. The consistent positive relation between blood pressure and cholesterol level within the population strata suggested that there is a biological interrelation between the two major coronary heart disease risk factors.

It is not a simple way of explaining that all hypertensive patients had high levels of total cholesterol. It is a continuous and graded relationship throughout the usual course of hypertension. Longer is the duration of

hypertension more is the level of total cholesterol. In this study the same had been observed. Total cholesterol has been shown to have increasing trend. The same has been proved in tromso study conducted by Bonna and Thelle¹⁶.

Age and total serum total cholesterol levels are interlinked in a different way as the clustering of cholesterol level with blood pressure is more pronounced in men 20-39 years age group than in women of similar age group and the clustering decreases with age in men increases with age in women. In our study a total cholesterol is seen to be 200.8 plus minus 17.8 in the age group of less than 35 years. This finding is consistent with Tromso study¹⁶ and also with Tassadaque et al¹⁷.

In our study the age adjusted levels of HDL cholesterol showed a slight increase with duration of hypertension. If BMI remain sonstant this relationship is more strengthened and is consistent with Bonna and Thelle¹⁶. Sex had no significant effect on HDL cholesterol and the same has been observed by Tassadaque et al¹⁷.

CONCLUSION

In non-obese, non-diabetic hypertensive patients, treating hypertension alone is one side of the coin. The other side is dyslipidemia which should neither be ignored nor underestimated because it's a potentially reversible risk factor for coronary artery and cerebrovascular diseases.

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Original Article

Role of Investigations and Alvarado Score in acute Appendicitis at Peoples Medical College Hospital Nawabshah

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ABSTRACT

Aim of Study: Role of investigations and Alvarado score in acute appendicitis at Peoples Medical College Hospital Nawabshah.

Study Design: Prospective observational study:

Place and Duration: Two years study from October 2008 to November 2010.

Was conducted in Peoples Medical College Nawabshah.

Patients and methods: The study comprises 50 patients all were admitted from OPD (Out Patients Department) and COD (Casulty Department).

The patients were evaluated fully after history, clinical examination and specific investigation, blood CP, X-Ray abdomen, supin & erect posture, X-Ray KUB, ultra sound of abdomen and general assessment. All Patients of pain in right iliac fossa included all patients were manage on the basis of Alvarado score, Complete Blood Picture and Ultra Sound report.

Result: In this study 50 patients of acute appendicitis in which 25 were female and 25 were male. The maximum of patients were in age group 15 to 40 years. Peak age group 25 years. Out of 50 patients 42 patients were present leucocytosis. On the behalf of Ultra sound report 38 patients were diagnose acute appendicitis. 10 patients were diagnose perforated appendix, 2 patients were diagnose appendicular abscess. 8 patients were present Alvarado score 3 to 4, 30 patients were present Alvarado score 6-7, 12 patients were present Alvarado score 8-9. Patients were operated through procedure of appendectomy then tissue sent for histopathology.

Conclusion: Acute appendicitis is a common cause of acute abdomen. Anorexia, migrating pain, tenderness and rebound tenderness are evidence of acute appendicitis.

Key words: Acute appendicitis, Complete Blood Picture, Ultra sound of abdomen Alvarado score.

INTRODUCTION

Acute appendicitis is the most, common surgical condition of the acute abdomen. It occurs at all age groups but most commonly seen in the second and third decades of life. Pain and vomiting is the most frequent feature of acute abdomen but migrating pain, rebound tenderness is helpful for diagnosis of appendicitis. Anorexia, nausea, rebound tenderness, and migrating pain are features of acute appendicitis. But some clinical tests are helpful for diagnosis of acute appendicitis. Such as psoas tests, obturator tests, rovsing sign, pointing sign. Some factors are responsible for inflammation of appendix such as fecolith, worm infestation and diabetes.

After history, clinical examination and some investigations are necessary for diagnosis of acute appendicitis. Such as Alvarado score, ultra sound of abdomen and Complete Blood Picture. Alvarado score

include anorexia, nausea, vomiting, temperature, migrating pain in right iliac fossa, tenderness, rebound tenderness, leucocytosis and shift to left. If Alvarado score 5 to 6 means possible diagnosis of acute appendicitis. If score 7 to 9 patients need surgical intervention. Ultra sound are helpful for diagnosis of appendicitis. As well as other pathologies like ectopic pregnancy overion cyst, iliocecal tuber culosis, appendicular lump and appendicular abscess. If ultra sound give a picture of appendicular lump so patients need conservative therapy, is called as oshenar shareen regime. If ultra sound give a picture of perforated appendicitis urgently patients need surgical intervention, (standard appendectomy) then tissue sent for histopathology. Complete Blood Picture have a role for management of acute inflammation as well as chronic inflammation.

MATERIALS AND METHODS

It was a prospective study carried out at surgical wards of People's Medical College Hospital, Nawabshah from October 2008 to November 2010.

Detailed history, clinical examination and Investigations were taken and recorded on a preformed designed for the study. Study variable used were age and sex on the basis of blood CP report, ultra sound findings and clinical correlate. 50 Patient were included in the study with pain in right iliac fossa on the behalf of clinical examination. Diagnose pathology of appendicitis included. Were pathology of ilem, cecum, ascending colon were excluded. All the patients were investigated for, Blood sugar, blood Urea, Serum Electrolyte/ creatinine, Blood Complete Picture, X-ray chest, ultra sound of abdomen ,X Ray abdomen supine and erect posture, pregnancy test, urine DR and General assessment. All patients were under went surgery.

Statistical package for social sciences SPSS version 10 was used for statistical analysis of the data.

RESULTS

This was a hospital based series study of 50 patients. Out of which 25 were female, 25 were male. The maximum numbers of patients were in age group of 15 to 40 years. Mean age 25 years. The peak incidence in second and third decades of life.

On the Ultra sound report 38 patients were diagnose acute appendicitis. 10 patients were diagnose perforated appendix, 2 patients were diagnose appendicular abscess. (Table 1)

42 patients were present with leucocytosis 8 patients were present with normal blood count (Table 2)

8 patients were present Alvarado score 3 to 4, 30 patients were present Alvarado score 6-7, 12 patients were present Alvarado score 8-9.(Table 3)

15 Patients were operated through lower midline incision, 30 patients were operated through gird iron incision, 5 patients were operated through lanz incision.(Table 4)

Table 1: Ultra Sound evidence

Ultra Sound	No of Pts	Percentage
Acute appendicitis	38	76%
Perforated Appendix	10	20%
Appendicular abscess	2	4%
Total	50	100%

48 patients were operated by appendectomy procedure, 2 patients were treated by drain. After surgery 46 patients were free from complication, 3 patients were

present post operative fever 1 patients were present with fecal fistula . (Table 5)

Table 2: Blood CP Report

Blood CP Report	No of Patients	Percentage
Leucocytosis	42	84%
Normal WBC	8	16%
Total	50	100%

Table 3: Alvarado Score

Alvarado Score	No of Patients	Percentage
Alvarado Score 3-4	8	16%
Alvarado Score 6-7	30	60%
Alvarado Score 8-9	12	24%
Total	50	100%

Table 4: Abdominal incision

Site of incision	No of Patients	Percentage
Lower midline incision	15	30%
Gird Iron incision	30	60%
Lanz incision	5	10%
Total	50	100%

Table 5: Post operative Complication

Complications	No of Patients	Percentage
Post operative fever	3	6%
Fecal fistula	1	2%
Free from Complication	46	92%
Total	50	100%

DISCUSSION

Appendicitis is regarded as the most common and frequent abnormality of mid gut seen all over the world. The over all incidence was reported to be increasing world wide with changing character stick. Mostly seen second to third decade of life. The diagnosis of acute appendicitis is easily made by Alvarado score, complete blood picture and ultra sound report. Those patients come with pain in abdomen mainly in right iliac fossa, initially pain arises around the umbilicus then pain shift in right iliac fossa with rebound tenderness positive, surgeon suspected pathology related to appendix. Surgeon wants to diagnose and manage the patient with help of Alvarado scoring system, complete blood picture and ultra sonography. Alvarado scoring system are helpful for conservative management as well as surgical intervention. Complete blood picture are helpful for treatment of acute and chronic infection.

Ultrasonography are helpful for diagnose of inflamed appendix, perforated appendix, appendicular lump, appendicular abscess and other pathology.

In this study On the bases of Ultra sound report 38 patients were diagnose acute appendicitis. 10 patients were diagnose perforated appendix, 2 patients were diagnose appendicular abscess.

In this study 42 patients were present with leucocytosis 8 patients were present with normal blood count.

In this study 8 patients were present Alvarado score 3 to 4, 30 patients were present Alvarado score 6-7, 12 patients were present Alvarado score 8-9.

In this study 15 Patients were operated through lower midline incision, 30 patients were operated through gird iron incision, 5 patients were operated through lanz incision.

In this study 48 patients were operated by appendectomy procedure, 2 patients were treated by drain. Post operatively 3 patients developed fever, 1 patients developed fecal fistula.

CONCLUSION

Appendicitis are most common condition of acute abdomen, commonly seen in second to third decade of life. Alvarado scoring system, complete blood picture and ultra sonography are helpful to keep patient either conservative treatment or patients need urgently surgical intervention.

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Original Article

Penetrating Colonic Injuries: Primary Repair Versus Colostomy

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ABSTRACT

Objectives: To compare the primary repair with colostomy in colonic injuries at tertiary care hospital in terms of morbidity and hospital stay.

Study Design: Quasi experimental study

Place and Duration of Study: This study was conducted in the Department of Surgery, Unit II BVH Bahawalpur from 27-01-2010 to 31-8-2010.

Patients and Methods: A total of sixty patients fulfilling the inclusion criteria were selected for this study. Patients were randomly allocated in two groups. Group A (Primary Repair) and Group B (Colostomy), 30 patients in each group. Follow up in group A patients was done twice after 2 weeks and after one month. The follow up in group B was done for multiple times. Initially the visit was advised after every two weeks until the patient was called back for colostomy closure.

Results: The mean age in group A was 28.9 ± 8.1 years and in group B was 30.1 ± 14.0 years. The mean hospital stay in group A was 8.9 ± 3.65 days and in group B was 11.0 ± 4.7 days. At two weeks follow up, in group A, there was one (3.3%) patient of abscess, one (3.3%) of suture repair leak, one (3.3%) patient of sepsis and 2 (6.7%) patients of wound infection. In group B, there were 2 (6.7%) patients of abscess, one (3.3%) patient of suture repair leak, 3 (10%) patients of sepsis and 4 (13.3%) patients of wound infection.

Conclusion: This is concluded from our study that primary repair was safe and effective treatment modality in the management of colonic injuries as compared to colostomy.

Key Words: Colonic injuries, primary repair, colostomy.

INTRODUCTION

The management of colon injuries has been one of the most controversial issues in trauma and has undergone many radical changes in the last few decades. The traditional management of penetrating colonic injuries is by exteriorization or proximal colostomy¹, however, in recent times, the idea of primary repair of colonic injury is gaining more acceptance. It was influenced by the experience that the primary repair has been a safe and effective treatment for colonic injuries during war times². The primary repair or resection and anastomosis can be performed with acceptable morbidity for the perforations of the colon and rectum³. Repair is with a single-layer, continuous, extra-mucosal, monofilament suture.

Primary repair of colonic injuries has less morbidity and is less expensive as compared to colostomy and is ideal method of management for colonic injuries.⁴ Primary repair is debatable, however, in the present antibiotic era, it is safe and less costly than the two-stage procedure of proximal colostomy followed by repair.⁵

The management of colonic injury has changed in recent years. The study by Bowley et al strengthens the validity of direct repair or resection and primary

anastomosis for colonic injury.⁶ Surgical care in the case of traumatic injury to the colon has changed significantly. Current trends favor primary repair. Questions remain as to whether primary repair is the safest option for all colon injuries.⁷

Primary repair is a safe method of managing penetrating colon injuries in carefully selected patients.

⁸ Penetrating colon injury carries a high rate of infectious morbidity. The developments of infectious complications is related to the injury severity and haemodynamic status of the patient, not the type of operation performed.⁹

Colon injury is still widely recognized as one of the most serious intra-abdominal injuries in civilian practice because of lethal consequences of peritoneal contamination.¹⁰ Colon is one of the most commonly injured viscera in the abdominal trauma.¹¹ Colonic injuries may occur in several ways:

1. Open injuries from penetrating wounds as in shotgun or stab injuries.
2. Closed lesions resulting from external violence as in crushing injuries or injuries due to blast in air or water without external wound.
3. Due to trauma applied from within the lumen of the bowel as in sigmoidoscopic, colonoscopic or pneumatic injuries to the upper rectum or lower

sigmoid. 5% colonic injuries are caused by blunt abdominal trauma and 95% colonic injuries are caused by gunshot and stab abdomen injuries.¹²

In order of frequency, colon comes to number four next to liver, small intestine and stomach.¹³ Colon is second to small bowel to get injured in gunshot abdominal wounds and third most common organ involved in stab injuries of abdomen.¹⁴

The incidence of trauma or injuries is on the increase and is a clinical problem of paramount importance. The geopolitical situations resulting in military conflicts continue to contribute to a wide variety of trauma even today.¹⁵ Since 1947, citizens of Pakistan traditionally have a large number of victims of firearms due to its specific cultural heritage.¹⁶

Before the time of First World War, the colonic injuries were treated by non-operative methods, for example, management like that of fecal fistula.¹⁷ In the World War 1, this method of treatment of colonic injuries was replaced by operative method of treatment. The operative method consisted of primary repair of colonic injury. The primary repair of colonic injury led mortality up to 60%.¹⁸

The survival rate in colonic injuries dramatically increased by exteriorization of injury as a colostomy during the Second World War. This led to strong support for its extensive use in civilian practice.¹⁹ With the passage of time, colostomy was accepted as a standard method of management for colonic injuries and in selected cases, primary repair with proximal colostomy was adopted as the chosen treatment.²⁰ The colostomy method of treatment has dual purpose. In exteriorization of the colonic injury, possible intra-abdominal sepsis is avoided followed by safe closure later on. In case of primary repair with colostomy, proximal decompression is achieved and chances of failure of anastomosis are eliminated.

In this study, the comparison of the primary repair versus colostomy in the colonic injury was evaluated to provide a better method of management of the patients with colonic injury.

PATIENTS AND METHODS

The objective of this study was to compare the primary repair with colostomy in colonic injuries at tertiary care hospital in terms of morbidity and hospital stay. This study was conducted at Department of surgery unit II, Bahawal Victoria Hospital, Bahawalpur. The study lasted from 27th January 2010 to 31st August 2010. A total of sixty patients were included in the study which were divided into two groups of 30 patients. They were randomly allocated in the two groups. Group A (primary repair), Group B (colostomy). Patients who presented within 10 hours after history of penetrating injury (i.e stab wound or fire arm injury) were included

in the study. Patients were fully resuscitated and stable at the time of operation. Those patients who sustained injury of more than two abdominal viscera were excluded from the study. Patients were asked to sign the informed consent. Detail history of presenting complaints if any were asked and physical examination were recorded. At the end of operation, operative variables were noted on a predesigned proforma. Follow up in group A was done twice after discharge. The first visit was after two weeks and the second visit was after one month. The follow up in group B was done for multiple times. Initially the visit was advised after every two weeks until the patient was called back for colostomy closure. After colostomy closure, the patient was advised follow up twice a month for one month. Confounding variables were controlled through matching. The study data was analysed with the help of SPSS ver 12. The variables included age, sex, hospital stay, type of injury, time interval between injury and operation, site of injury, anemia, jaundice, morbidities (abscess, suture repair leak, sepsis and wound infection). Student T test test was applied for hospital stay and time interval between injury and operation to find out the significance between the two groups. Chi square test was applied for the morbidities. P value less than 0.05 was considered as significant.

RESULTS

A total of 60 patients fulfilling the inclusion criteria were included in the study. Patients were randomly allocated two groups. Group A(primary repair), Group B (colostomy), with 30 patients in each group. The mean age in group A was 28.9 ± 8.1 years while in group B, it was 30.1 ± 14.0 . There were 27(90%) male patients and 3 (10%) females in Group A, while Group B consisted of 28 (93.3%) male and 2 (6.7%) female patients.

The mean hospital stay in Group A was 8.9 ± 3.65 days and in Group B, it was 11.0 ± 4.7 days. P value for the mean hospital stay was 0.04. In the distribution of type of injury, in group A, there were 25 (83.3%) patients of firearm injury and 5 (16.7%) patients of stab wound injury. In group B, there were 22 (73.3%) patients of firearm injury and 8 (26.7%) patients of stab wound injury.

The mean time interval between injury and operation in group A was 3.4 ± 2.7 hours while in group B, it was 4.5 ± 5.1 hours. P value was non significant, being 0.26. In the distribution of site of injury, in group A, there were 24 (80 %) patients of abdomen injury and six patients (20%) of buttock injury. In group B, there were 23 (76.7%) patients of abdomen injury, 5 (16.7%) patients of buttock injury and 2 (6.7%) patients of lower chest injury.

In the distribution of anemia, in group A, there were 18 (60%) patients who had anemia and in group B, there were 20 (66.7%) patients of anemia. In group A, there were 5 (16.7%) patients having jaundice while in group B, there were 3 patients (10%) having jaundice.

At two weeks follow up, in group A, there was one (3.3%) patient of abscess, one (3.3%) patient of suture repair leak, one (3.3%) patient of sepsis and 2 (6.7%) patients of wound infection. In group B, there were 2 (6.7%) patients of abscess, 1(3.3%) patient of suture repair leak, 3 (10%) patients of sepsis and 4 (13.3%) patients of wound infection.

At four weeks follow up, in group A, there was one (3.3%) patient of abscess and one (3.3%) patient of wound infection. In group B, there were 2 (6.7%) patients of abscess, 1(3.3%) patient of suture repair leak, 1 (3.3%) patients of sepsis and 2 (6.7%) patients of wound infection.

At six weeks follow up, in group B, there was one (3.3%) patient of abscess, one (3.3%) patient of sepsis and one patient (3.3%) of wound infection. At follow up of eight weeks, there was one (3.3%) patient of abscess and one (3.3%) patient of wound infection.

DISCUSSION

Colon injury has been associated with a high risk of septic complications and mortality. This study assessed the pattern, management, outcome and prognostic factors in patients. There is strong evidence that the vast majority of colonic injuries can be safely managed by primary repair. It seems, however, that there is a limited role for colostomy, particularly in high risk patients with destructive injuries of the left colon. Primary repair of colonic injuries has less morbidity and is less expensive as compared to colostomy and is ideal method of management for the colonic injury.⁴ Primary repair is debatable, however, in the present antibiotic era, it is safe and less costly than the two stage procedure of proximal colostomy with repair.⁵ Questions remain as to whether primary repair is the safest option for all colon injuries.

In our study, the mean age in group A patients was 28.9 ± 8.1 years and mean age in group B was 30.1 ± 14.0 years. As compared with the study of Kahya *et al*²¹, the mean age of patients of 30.1 years, which is same and comparable with our study.

In our study, in group a, there 90% male and 10% female patients. While in group B, there 93.3% male and 6.7% female patients. As compared with the study of Kahya *et al*²¹ which included 88% male and 12% female patients.

In our study, in group A, there were 83.3% patients of firearm injury and 16.7% patients of stab wound injury. In group B, there were 73.3% patients of firearm injury and 26.7% of stab wound injury. As compared with the

study of Adesanya and Ekanem²², the firearm injury were caused in 91.7% patients and stab wound injury were caused in 8.3% patients, which is comparable with our study. In another local study conducted at Lahore General Hospital, Lahore by Hussain *et al*⁸, there were 72% patients caused by firearm injury.

In our study, the mean time interval between injury and operation in group A was 3.4 ± 2.7 hours and in group B was 4.5 ± 5.1 hours. As compared with the local study conducted at Lahore General Hospital, Lahore by Hussain *et al*⁸, the mean time interval between injury and operation was seven hours, which is comparable with our study. Likewise, the mean hospital stay is also similar in both of above studies.

In group A of our study patients, there was 3.3% patient of intra abdominal abscess and in group B, there were 6.7% patients of intra abdominal abscess. As compared with the study of Bedirli *et al*²³, there were 6% patients of intra abdominal abscess complication, which is comparable with our study. In our study group A, there were 6.7% patients of wound infection and in group B, there 13.3% patients of wound infection. As compared with the study of Bedirli *et al*²³, there were 14% patients of wound infection, which is same and comparable with our study. In another study conducted by Busic *et al*²⁴, there were 14.3% patients of wound infection, which is also comparable with our study.

In this study, in group A, the complication of sepsis was found to be 3.3% in group B, 13.3% of patients. As compared with the study of Stagnitti *et al*²⁵, the complication of sepsis was found to be 14%, which is similar to our results. In our study, the complication of suture repair leak in group A was found in 3.3% patients and in group B, there also similar percentage of patients. As compared with the study of Miller *et al*²⁶, the complication of suture repair leak was found to be 7%, which is comparable with our study.

CONCLUSION

Primary repair group had significantly shorter hospital stay as compared to colostomy ($p=0.04$). Primary repair group had significantly lesser morbidities (abscess, suture repair leak, sepsis and wound infection) as compared to colostomy. Therefore, it is concluded from our study that primary repair was safe and effective treatment modality in the management of colonic injuries as compared to colostomy.

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Original Article

High Incidence of Dyslipidemia In Obese Type 2 Diabetics

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ABSTRACT

Objective: To ascertain the effect of Body Mass Index (BMI) on plasma lipid profile in type 2 diabetes mellitus (T2DM).

Study design: Comparative, observational study

Place and duration of study: Army Medical College, Rawalpindi from Jan 2007- June 2010.

Patients and Methods: Sample size was 60, subdivided in to two groups. Group 1 comprising on 30 type 2 diabetics with BMI ≤ 25 , whereas Group 2 consisted of 30 type 2 diabetics with BMI ≥ 28 . Blood glucose, HbA_{1c}, plasma cholesterol and triglyceride levels were determined.

Results: Group 1 consisted of 56% males and 44 % females, whereas Group 2 had 54 % males and 46 % females. Mean age to develop T2DM for group 1 was 44.60 ± 1.22 years and for group 2 was 42.13 ± 0.86 years. BMI of group 1 was 20.29 ± 0.56 and Group 2 was 28.95 ± 0.26 . Mean plasma cholesterol and plasma triglyceride levels of group 2 diabetics were significantly higher ($p < 0.001$) as compared with group 1 non obese diabetics. Whereas, mean plasma glucose ($p < 0.01$) and Glycosylated hemoglobin ($p < 0.05$) of group 2 diabetics were significantly higher as compared with group 1 non obese diabetics

Conclusion: Dyslipidemia was more marked in obese type 2 diabetics. Whereas diabetics with low BMI had plasma lipid profile within normal range.

Key Words: Body Mass Index (BMI), Type 2 Diabetes Mellitus (T2DM), Dyslipidemia, Coronary Artery Disease (CAD), Atherosclerosis

INTRODUCTION

Diabetes is emerging as a serious challenge for physicians everywhere in the world, particularly in developing countries. According to several epidemiological studies, T2DM is an independent risk factor for cardiovascular disease due to accompanying dyslipidemia (1). Framingham (2) recognized and several subsequent studies confirmed that T2DM is responsible for 50 – 200% increase in the mortality rate due to ischemic heart diseases associated with disturbed lipid profile. Dyslipidemia is mainly defined as the raised plasma levels of total cholesterol, triglycerides, or both (3). It is a characteristic feature of T2DM and an electrifying rise in the incidence of T2DM accompanied with dyslipidaemia is expected to occur in the near future (4). Dyslipidemia is readily associated with insulin resistance – another hallmark of T2DM, which leads to hyperinsulinemia, as a compensatory mechanism. It also leads to hepatic overproduction of VLDL, decrease clearance of triglycerides from lipoproteins and suppressed activity of lipoprotein lipase. Other factors contributing in disturbed lipid profile include increase availability of glucose and free fatty acids substrates in the blood, obesity, sedentary life styles, fatty food consumption, Hypothyroidism, tobacco smoking and alcohol consumption, thus

enhancing the risk to develop ischemic heart disease in the diabetics than non-diabetics (5). Therefore, the effective management of dyslipidemia is essential to reduce the risk of cardiovascular diseases in diabetic population. Several studies have revealed that obesity is strongly linked with dyslipidemia in diabetics (6). Recently, in 2009, a study in Pakistan revealed high incidence of dyslipidemia in obese diabetics (7). Moreover, other two Pakistani studies found dyslipidemia as the only significant feature in obese diabetics (8, 9). Abbasi MA et al (2007) reported raised levels of total cholesterol as the only main finding in type 2 diabetics (10). Few Canadian reports also confirmed these findings (11).

Hence, it can be concluded safely that obesity, T2DM and dyslipidemia form an established triad characterized by insulin resistance and atherosclerotic disorders increasing the morbidity and mortality in diabetics (12).

Obesity is usually labeled with reference to body weight (Kg) and height (m) i.e. BMI. In T2DM, the association between dyslipidemia and BMI has been extensively discussed during the past few decades (13). Undoubtedly, thorough assessment of all risk factors in the diabetics is essential to implement specific preventive measures to modify these factors and enabling the diabetics to live a life with minimum

complications. Fortunately, some of these risk factors are modifiable if given proper attention before the complications start to develop. One of these modifiable risk factors is obesity – a big problem which can trigger dyslipidemia, CAD, hypertension and many others disasters. Ghoddusi et al, 2008 (14) described BMI as a noteworthy predictor of CAD and T2DM. As raised BMI is related with dyslipidemia in T2DM, an important fact gets attention that if diabetics manage to reduce BMI, the lipid profile can be changed in to more favorable pattern. Thus, low BMI should reduce the chance to develop atherosclerotic disorders. The best way to achieve this target is by educating the diabetics about diabetes, its complications and the significance of preventive measures.

Aims & Objectives

This study was planned to evaluate the association of low and high BMI with lipid profiles in patients with T2DM in perspective of Rawalpindi and Multan Districts.

Statistical Analysis

All statistical calculations were done with computer software programme “Statistical Package for Social Sciences (SPSS)” for windows, version 15.00. Data was subsequently examined by Independent – Sample T-test. The results are phrased as mean $\pm$ s.e.m.

PATIENTS AND METHODS

This study was carried out in the Armed Forces Institute of Cardiology (AFIC) and Army Medical College, Rawalpindi. The study period was Jan 2008 to Jan 2010. Patients were randomly selected from government hospitals of Rawalpindi and Multan district. The study was conducted according to the declaration of Helsinki and approved by the Ethics committee of National University of Sciences and Technology (NUST).

Total sample size was 60. It was subdivided into two groups. Group 1, comprised of 30 confirmed cases of T2DM with BMI $\leq$ 25. Diabetics with other metabolic disorders were excluded. Group 2 comprised of 30 confirmed cases of T2DM with BMI $\geq$ 28. Every possible effort was made to exclude the probability of using lipid lowering drugs. Peripheral venous blood samples were analyzed for estimation of plasma glucose, plasma cholesterol and triglyceride levels by enzymatic colorimetric method and Glycosylated hemoglobin by ion exchange chromatograph (15). Plasma cholesterol level was interpreted according to the criterion established by National Cholesterol Education Program (NCEP) i.e. plasma cholesterol level $<$ 5.17 mmol/L (normal), 5.17 – 6.20 mmol/L (borderline) and $>$ 6.20 mmol/L as hypercholesterolemia. Plasma triglyceride level $>$ 1.82

mmol/L was taken as hypertriglyceridemia (16). BMI was calculated by measuring the weight (Kg) and height (m^2).

Weight of all the subjects was recorded by the same weighing machine, without shoes and minimum clothing. Height was measured by a vertical bar with a steel tape attached. BMI of 19 – 25 kg/m^2 was considered as normal, 25 – 28 acceptable but not desirable, 28 – 30 as overweight and $\geq$ 30 kg/m^2 as obese (17).

RESULTS

Group 1 comprised of 56% males and 44 % females. Group 2 consisted of 46 % females and 54% males (Table 1). Mean age at which Group 1 developed T2DM was found to be 44.60 ± 1.22 years and of group 2 was 42.13 ± 0.86 . BMI of group 1 was 20.29 ± 0.56 and found to be significantly lower as compared with Group 2 (28.95 ± 0.26). Mean plasma cholesterol and plasma triglyceride levels of group 2 diabetics were very significantly higher ($p < 0.001$) as compared with group 1. There was no significant statistical difference between males and females with regard to the plasma lipid levels. Mean plasma glucose ($p < 0.01$) and Glycosylated hemoglobin ($p < 0.05$) of group 2 diabetics were significantly higher as compared with group 1. This comparison is shown in Table 2.

Table-1: Age and sex distribution of Type 2 diabetics with high and low BMI. The number of subjects is given in parenthesis.

	Group 1 (30)	Group 2 (30)
Age in years (mean $\pm$ SD)	52.47 ± 1.77	54.20 ± 1.32
Sex distribution (%)		
Male	56 %	54 %
Females	44 %	46 %

DISCUSSION

In this study, comparison of two BMI groups (normal and overweight) with regard to serum total cholesterol and triglycerides in T2DM was evaluated. Study showed positive and remarkable association between BMI and serum lipid profiles in type 2 diabetics. Moreover, plasma triglyceride and total cholesterol levels were linearly associated with BMI both in males and females.

Table-2: Comparison of age of onset of diabetes, plasma glucose, HbA_{1c}, plasma cholesterol, plasma triglyceride and BMI of two groups of type 2 diabetics. The number of subjects is given in parenthesis. The values are mean $\pm$ s.e.m.

	Group 1 (30)	Group 2 (30)
Age of onset of T2DM(years)	44.60 $\pm$ 1.22	42.13 $\pm$ 0.86
Plasma glucose (mmol/L)	9.69 $\pm$ 0.80	12.47 $\pm$ 0.78**
Glycosylated hemoglobin (%)	7.49 $\pm$ 0.50	8.91 $\pm$ 0.34*
Plasma Cholesterol (mmol/L)	3.91 $\pm$ 0.23	6.19 $\pm$ 0.30***
Plasma Triglyceride (mmol/L)	1.36 $\pm$ 0.77	2.07 $\pm$ 0.23***
BMI (Kg/m²)	20.00 $\pm$ 0.44	28.95 $\pm$ 0.26***

*p < 0.05 as compared with group 1 (significant).

**p < 0.01 as compared with group 1 (highly significant).

***p < 0.001 as compared with group 1 (very highly significant).

Present study revealed that plasma cholesterol and triglycerides levels were significantly higher in overweight diabetics as compared to diabetics with low BMI. Hence the significant impact of low BMI on lipid profile cannot be overlooked. Moreover, it gives a satisfactory feeling to the patient and the doctor as well because one important and common risk factor responsible for CAD and other ischemic heart diseases i.e. lipid profile can be controlled if BMI is managed within normal range (17, 18). The significance of this finding can be better understood with an example of a case study (19) which showed that in spite of bringing blood glucose to the normal limit in obese diabetic, improvement in dyslipidemia was observed only after weight reduction.

American Diabetes Association (ADA) has also acknowledged that high BMI (> 27) can lead to type II diabetes and dyslipidemia. Hence, the condition can be labeled as a vicious cycle i.e. high BMI increases the chance to develop T2DM, which, along with raised BMI, sequentially increase the probability to develop dyslipidemia – a potent threat for CAD (20).

Much has been printed in recent years about the diabetes and its association to both obesity and dyslipidemia. The findings of our study were consistent with the earlier studies. Present study also showed that BMI could be used as an indicator of dyslipidemia in

selected study group and provided the evidence for the low incidence of dyslipidemia in type 2 diabetic patients with low BMI. This is consistent with the findings of Arora et al (2007) (21) and a study on Spanish population (22).

Moreover, poor glycaemic control in group 2 diabetics cannot be overlooked as their blood glucose and HbA_{1c} was higher as compared with group 1. Persistent hyperglycemia can also disturb lipid profile due to insulin resistance and hyperinsulinemia which in turn is associated with hypertriglyceridemia (6). This finding is statistically significant and needs to be evaluated on a bigger scale as there are studies which show that better glycaemic control can positively modify dyslipidemia in T2DM (23). Therefore, both factors i.e. high BMI and uncontrolled hyperglycemia may be taken as responsible for dyslipidemia in the selected study group.

Evaluation and assessment of plasma lipid profile in diabetics, by simple and non-invasive methods, can be resourcefully used in clinical practice to further see the relationship between BMI and dyslipidemia.

Hence, we can conclude that strict monitoring of BMI and glycaemic control in diabetic patients can keep lipid profile within normal limits which may alleviate the symptoms and improve the quality of life of type 2 diabetics. Otherwise, if hypercholesterolemia and hypertriglyceridemia co-exist with high BMI among diabetics, a high prevalence of atherosclerosis and CAD would be inevitable in future (24).

Unfortunately, low literacy rate and poverty is a great barrier for better understanding of the diabetes and its effective management in developing countries (3). To improve or eliminate obesity related diabetic complications, weight reducing measures must be given special attention. In addition, diabetic community must be educated about the hazards of high BMI. Moreover, reduced dietary intake of saturated fats (< 7% of total calories) and cholesterol and regular exercise should be promoted (25).

CONCLUSION

Type 2 diabetics having high BMI accompanied with uncontrolled hyperglycemia are more prone to develop dyslipidemia. Hence, in order to manage dyslipidemia, it is essential to identify its secondary contributing causes, like raised BMI and poor glycaemic control and then patients can be benefited by restricting caloric intake and achieving near-normal blood-glucose levels, hoping that this approach will also improve plasma lipid profile.

RECOMMENDATIONS

The immediate clinical goal in the management of T2DM should be to control hyperglycemia and the long

term objective must be to adopt preventive measures, like BMI control, in order to avoid future microvascular and macrovascular complications.

In spite of laborious studies done to explain the multifaceted pathogenesis of the dyslipidemia of high BMI, prospective statistics for such an effect is still lacking. Hence further research work on diabetics with different BMI values is still required to expedite dietary patterns and other measures which can be adopted to decrease BMI and control dyslipidemia in type 2 diabetics.

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Original Article

Frequency of Benign and Malignant Diseases of the Breast Lump in Females

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ABSTRACT

Objective: To determine the relative frequency of Benign and Malignant pathology of breast lump in female patients.

Design of Study: Experimental Study.

Place and Duration of Study: This study was conducted at Margalla Teaching Hospital Rawalpindi and United Medical Center Rawalpindi for the period of 01 year stated from March 2008 to March 2009.

Patients and Method: In this study, 100 Female patients, presented with breast lump. History of the patients, clinical finding of breast lump and Axillary lymph nodes and the results of FNAC or excisional biopsy were recorded in the prepared Performa.

Results: out of 100 female patients, 88 (88%) patients were found with the benign breast disease in 12 patients we found malignancy. In benign breast diseases fibroadenoma was the most common found in 38 patients followed by the fibrocystic disease, found in 26 patients remaining benign breast diseases were breast abscess and duct ectasia. Among the malignancy, Ductal cell carcinoma and lobular carcinoma were found in 8(8%) and 4(4%) patients respectively.

Conclusion: High incidence of carcinoma of breast is noted after 30 years and it is increased subsequently therefore a surgeon managing the breast lump after 30 years should be very careful and suspicious regarding the malignant breast lump. Early diagnosis and management of the carcinoma of the breast has the key role in terms of increased survival rate of the patients.

Key Words: Incidence, FNAC, Excisional Biopsy, Breast Lump

INTRODUCTION

Breast developmentally is a modified sweat gland. Breast goes through physiological changes throughout a woman's life. The main changes occur at puberty during each menstrual cycle, breast feeding and at the menopause. It has paramount importance functionally for the offspring, as benefits of breast feeding are well known. It is considered symbol of womanhood. That is why woman undergoing breast surgery is very conscious. About 20 to 30 % of the women suffer from the breast diseases, requiring the treatment at sometimes in their lives¹. Among the female population breast cancer is the second leading cause of cancer death, especially after the age of 30 years in USA and western world². In all female cancer, breast cancer accounts for about 27% in the western world and one in fourteen female patients can expect to develop breast cancer in their life time³. In Pakistan it accounts for almost 26%⁴ among female cancers.

In addition, higher incidence of breast cancer has been reported in younger age in our population⁵.

There are several factors including social, religious and fear of infertility have hindered the early diagnosis and delay the treatment in our setup⁶. Despite that, 80-90⁷ percent of breast lump are benign in nature. Various

studies show that benign lesions of the breast are more frequent than malignant⁸ tumor. Therefore every breast lump must be thoroughly evaluated by the surgeon to exclude malignancy⁹. It is worth mentioning regarding the breast cancer that early diagnosis is key to increased survival rate of the patient.

PATIENTS AND METHODS

This study included 100 female patients. It was conducted at Margalla teaching hospital and united medical centre Rawalpindi over the period of one year started from March 2008 to March 2009. All the female patients presenting with breast lump at surgical OPD of the Margalla teaching hospital and united medical centre were entertained in our study. It was ethically approved and patients were also informed about the study. These patients were thoroughly examined with special focus on breast lump and axillary lymph nodes. Chest and abdomen were also evaluated to exclude the metastasis in case of known or suspected malignancy. A detailed history of patients including OCP's (Oral contraceptive pills), menarche and menopausal status along with the family history of breast cancer were taken FNAC (fine needle aspiration cytology) of the breast lump was performed. In case of inconclusive FNAC, Excisional biopsy was carried out. Detailed

history, personal bio data, clinical findings of the breast lump, axillary lymph nodes and results of the FNAC or excisional biopsy were registered in the prepared performa.

RESULTS

In our study 24 (24%) patients were in the age group of 35 to 65 years and remaining 76 (76%) patients were in the age group of 18-33 years (shown in table 1). 22 (22%) patients were multiparous and 78(78%) were nuliparous (shown in table 2). In our study results, we found benign breast diseases in 88(88%) patients while in 12(12%) patients we noticed the malignancy (as shown table 3). Among the benign breast diseases fibroadenoma was the most common found in 38(38%) patients. Fibrocystic disease was the next common and it was found in 26(26%) patients while remaining benign breast diseases were breast abscess, cyst and duct ectasia were found 10(10%),8(8%) and 6(6%) patients respectively. In 12 patients of malignant breast lump, ductal cell carcinoma was found in

8(8%) patients followed by the lobular carcinoma in 4(4%) patients.

Table-I: Distribution of Patients According to Age

Number of Patients	Percentage %	Age Group in Years
24	24%	35 – 65
76	76%	18 – 33

Table-2: Distribution of Patients According to Parity Status

Number of Patients	Percentage %	Parity Status
22	22%	Multiparous
78	78%	Nuliparous

Table-3: Outcome of Our Study (N = 100)

Frequency of Benign Breast Diseases			Frequency of Malignant Breast Diseases		
Benign Diseases	Number of Patients	Percentage	Malignant diseases	Number of Patients	Percentage
Fibroaenoma	38	38%	Ductal Carcinoma	8	8%
Fibrocystic	26	26%	Labullar Carcinoma	4	4%
Breast Abcess	10	10%			
Cyst	8	8%			
Duct Ectasia	6	6%			
Total	88	88%	Total	12	12%

DISCUSSION

Female patient with the breast diseases attend the surgical clinic with the various symptoms but breast lump is the most common symptom. Other symptoms include breast pain, nodularity, skin ulcerations and nipple discharge. Our study showed incidence of malignancy 12% which was lower in comparisons to the other studies 26%¹⁰ reported by usmani and 24.8% by choudhary¹¹ in Pakistan. Even the incidence of the breast cancer found higher in western countries i.e. 19.6% reported at Australia by Fleming¹² et al.

Incidence of malignancy in UK as observed by Donegan¹³ WL and Bennett¹⁴ IC 21% and 15% respectively. The study result of Bennett closely

matched to our study result which was 12%.

Our study results revealed 88% of benign breast diseases which are consistent with the study of out AA¹⁵. Another study conducted by Ihekwa at western Africa showed 80.5% of benign diseases in females which almost resemble to our study results. Fibroadenoma(38%) was the most common in our study. The same observation was noted in two local study where they found fibroadenoma, common benign breast diseases with the incidence of 42% and 45% by Rasheed¹⁶ etal and Ali¹⁷ K etal. Murillo¹⁸ etal reported 38% of fibroadenoma in his study which is exactly same to our study results. Fibrocystic disease was the next common disease found in 26%patients in our study. Rasheed etal and Ali K etal noted the same

observation while stern¹⁹ et al reported the fibrocystic disease as most common in the females of middle age group.

Breast abscess was found in 26(26%) patients. Barton²⁰ et al found acute bacterial mastitis common at any age but most frequently effected are patients with lactating breast. The other benign breast diseases were cyst and duct ectasia which were 8% and 6% respectively.

Women reaction to any actual or suspected disease of the breast is disfigurement and loss sexual attractiveness. A significant number in our community are illiterate or poorly educated because of the Islamic belief and modesty. Female patients with the breast lump do not expose their self and avoid to attend the surgical clinic. As a result they present to surgeon when the disease is advance which carries the poor progresses. There is dire need to create the awareness among the female patients regarding breast cancer and they must be encouraged to attend the surgical clinic as early as possible whenever they notice their breast lump, discharge, skin ulceration, nipple retraction or any other abnormality. In this way we can expect to reduce the burden of disease in female population.

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Original Article

Thrombocytopenia and Platelets Transfusion in Dengue Fever

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ABSTRACT

Objective: This study was done to see how much prevalent is thrombocytopenia and need and indications of platelets transfusion in patients with dengue fever in our community hospitals.

Place and duration of study: This study was done from 1st, September 2010 to 15th, November 2010 in three different hospitals, two were urban and one was rural and all three were tertiary care hospitals.

Materials and methods: Our study was based on 200 patients who were serologically confirmed cases for Dengue fever (IgM +ive) and had symptoms and signs of dengue fever for more than four to seven days at the time of admission. Clinical data reports of hematological investigations, platelets requirements, and data obtained from daily follow up, were analyzed.

Results: There were 200 serologically confirmed Dengue fever patients, among them 176 were males, 24 females, 183 patients were urban and 17 were rural patients. Thrombocytopenia was found in 174 (87%) on the day of admission. Among them 48 (24%) patients had platelets count in between 20,000 to 40,000/cumm, 46 (23%) had platelets count <20,000/cumm, and 4 (2%) had platelets count <10,000/cumm. Patients having platelets count < 20,000/cumm all have hemorrhage manifestations. Out of 48 (24%) patients having platelets count in between 20,000 to 40,000/cumm, 21(43%) had hemorrhagic manifestations. 98(49%) patients were given platelets transfusion. None of these patients got platelets transfusion with platelets count above 40,000/cumm. 27 patients received platelets therapy inappropriately (platelets count < 40,000/cumm with no hemorrhagic manifestations. There was only 2 mortality in these patients.

Conclusion: Our study suggests that bleeding occurs more often in patients with severe thrombocytopenia (platelets count <20,000/cumm) and these patients need urgent platelets transfusion. Patients having platelets count in between 20,000-40,000/cumm are at moderate risk and these patients require platelets transfusion if they have hemorrhagic manifestation. Platelets count above 40,000/cumm are at low risk and no need of platelets transfusion in these patients, only these patients need careful monitoring.

Key words: Dengue patients, thrombocytopenia, platelets transfusion.

INTRODUCTION

Dengue is one of the most important emerging tropical virus illnesses of humans in the world today and its incidence has grown dramatically around the world in recent decades.¹⁻³ The disease is endemic in more than 100 countries in Africa, the America, south Asia and the western pacific and it is emerging as a Global health and financial threat.⁴ The South Asian countries such as Pakistan, India, Thailand, and Indonesia are at highest risk of Dengue fever, Dengue hemorrhagic fever and Dengue shock syndrome.⁵

There are some typical clinical manifestations of Dengue fever but bleeding and shock are more severe complications and are associated with high morbidity and mortality.⁶ Some times bleeding do not correlate with laboratory abnormalities.⁷ Most of these patients have hepatic functions derangements and some patients have co-infection also.⁸ Severe bleeding is associated with the severity of thrombocytopenia, so these patients

need platelets transfusion on urgent basis.⁹ There is very less mortality (0.5-1%) in dengue fever.^{10,6}

The aim of study is to know about the prevalence of thrombocytopenia in dengue fever and relationship between thrombocytopenia and need for platelets transfusion.

MATERIALS AND METHODS

This study was conducted on patients with high suspicion of Dengue fever who presented either in OPD or in Emergency department in three different hospitals, two urban and one rural tertiary care hospitals. The study was done from 1st, September 2010 to 15th, November 2010. According to specific WHO criteria 218 patients were included with history of fever (presented 4-7days after the onset of fever) above 100°F at the time of admission and blood samples collection. These patients had typical clinical manifestations like headache, retro-orbital pain, backache, sever muscle and joint pains and rash. These patients were included

after fulfilling the case definition criteria of Dengue fever and Dengue hemorrhagic fever (DHF) by WHO. Clinical data was collected with proper history by the patients and attendants and vigilant physical examination of infected patients. Laboratory reports included complete blood count with differentials, Dengue serology, platelets requirement, record maintained on daily follow up basis was analyzed.

RESULTS

Out of 218 clinically suspected cases, 200 patients were found positive for anti-dengue antibodies. Out of 200 cases there were 176 males, 24 females, 183 were urban and 17 were rural patients. Age of patients ranges from 16 to 51 years, 126(63%) patients were in between 16 to 30 years, 74(37%) patients were in between 30 to 51 years) and greatest proportion was in the age group of 16 to 30 years. At time of presentation 174 (87%) had thrombocytopenia $<100,000/\text{cumm}$. Among them, 48 (24%) patients had platelets count in between 20,000 to 40,000/cumm, 46 (23%) had platelets $<20,000/\text{cumm}$, and 4 (2%) had platelets $<10,000/\text{cumm}$. Hemorrhagic manifestations from different sites were noted in 71(35.5%) patients which mainly included petechie all over body in 47(23.5%), gum bleed in 11 (5.5%), epistaxis in 08 (4.0%), malena in 04(02%) and disseminated intravascular coagulation in 01(0.5%). As platelets count came down chances of hemorrhagic manifestations increased and with severe thrombocytopenia (platelets count $< 20,000/\text{cumm}$) bleeding occurred more commonly.

98(49%) received platelets transfusion. Among them 87 patients were male and 11 patients were females. Out of 98 patients, 48 (24%) had platelets count in between 20,000 to 40,000/cumm, 46 (23%) had platelets count $< 20,000/\text{cumm}$, 04(2%) had platelets count $< 10,000/\text{cumm}$. All patients who got platelets transfusion had platelets count less than 40,000/cumm, and none of patients received platelets transfusion with platelets count greater than 40,000/cumm. It was also noted that out of 98 (49%) patients who got platelets transfusion, 88.9% patients received only one mega unit of platelets and they recovered while 17.1% got more than one unit of platelets transfusion.

Besides platelets transfusion FFP and packed RBCs were also transfused in 10 dengue cases. Out of these 10 patients, 7 patients had abnormal PT, aPTT, and INR, these patients got FFP along with platelets transfusion, 8 patients received packed RBC transfusion whose hemoglobin level was below 8gm/dl. 2 (1%) patients died out of 200 dengue positive patients. These had sepsis and multi organ failure along with severe thrombocytopenia. They did not respond to platelets transfusion, one patient was quite young at age 27 years and other one was 51 years old. 27 patients received

platelets transfusion having platelets count in the range of 20,000 to 40,000/cumm without hemorrhagic manifestations only due to social stress from family and fear of further worsening platelets count.

DISCUSSION

Dengue fever becoming one of the major public health problem in the world but especially more common in South-Asian countries like Pakistan. It became as an endemic in thickly populated big cities like Lahore and also other cities of the country. This study showed that urban population was more commonly infected than rural population. Majority of dengue fever cases were adults with great proportion in the age group of 16 to 30 years. This in accordance with the findings of Pervin et al.¹¹ Thrombocytopenia was found in 87% of serologically confirmed dengue cases on admission. These findings were comparable with the findings of Chairul fatah et al. who had incidence of thrombocytopenia in 83% hospitalized dengue patients. Bleeding was significantly more in patients who had platelets count $<20,000/\text{cumm}$ which is similar to the findings of Chairul fatah and Shivbalan et al.^{12,6} who found significant bleeding in patients with platelets count $<15,000/\text{cumm}$.

The DHS guidelines also recommends that platelets transfusion should be given to patients having platelets count $<20,000/\text{cumm}$.¹³ In this study 98(49%) patients got platelets transfusion followed the recommendations laid down by DHS for the hospitalized dengue patients, 48 patients had platelets count in between 20,000-40,000/cumm. 21(43.75%) had hemorrhagic manifestations in our study. These hemorrhagic manifestation are more than found in the study of Kumar ND et al. who had (23.75%) hemorrhagic manifestations.¹⁴

There were 2 (1%) mortalities out of 200 patients. These patients had abnormal coagulation profile and one of them had sepsis along with thrombocytopenia. So, on the basis of close monitoring of 200 dengue admitted patients it was noted that as more severe thrombocytopenia there is high risk of bleeding in these patients. High risk was categorized when platelets count was $<20,000/\text{cumm}$, moderate risk when platelets count was in the range of 20,000 to 40,000/cumm, and low risk when the platelets count $<100,000/\text{cumm}$. In these patients it was also noted that out of 98(49%) who got platelets transfusion, 88.9% patients received only one mega unit of platelets and they recovered while 17.1% got more than one unit of platelets transfusion. However 27 (13.5%) patients got platelets transfusion inappropriately due to social/family stress and fear of further worsening of platelets count which is comparable to Chaudhry R, et al. in which 21.5% inappropriate platelets transfusion was given.¹⁵ Dengue

shock syndrome occurs more commonly in patients who were previously exposed to dengue virus but in our study we could not have any record for previous infection of dengue virus. Also role of antiviral therapy in dengue patients could not be studied as Antiviral therapy may ameliorate the severity of dengue fever symptoms and possibly reduce the risk of progression to dengue hemorrhagic fever and dengue shock syndrome and administration of an antiviral agent targeting dengue RNA-dependent RNA polymerase significantly reduced viremia in a dose dependent manner.¹⁶

PCR/isolation of dengue virus should be done in patients who had symptoms and signs similar to dengue fever but they had negative anti dengue antibodies because detection of dengue viral RNA by RT-PCR provides the most definite confirmation of dengue infection.¹⁷⁻¹⁹

CONCLUSION

Urban population was more commonly affected with dengue fever as compared to rural population. All patients who had thrombocytopenia <20,000/cumm should be admitted and platelets transfusion should be considered. These admitted patients should be categorized as high, moderate, and low risk patients depending upon platelets count. High risk patients should also be evaluated for other coagulation derangements to check additional complications. Moderate risk patients should be observed carefully and managed with supportive care.

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Original Article

Hydatid Cyst of Unusual Sites, An Experience at Chandka Medical College Larkana

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ABSTRACT

Background: Hydatid cyst occurs throughout world but more in endemic areas where human beings live in close contact with cattle and dogs. Common organs affected by hydatid cyst are liver and lung but rarely occurs in other organs as well.

Objective: To evaluate the unusual sites of hydatid cyst in human beings, this will help the clinicians in early diagnosis and management.

Study Design: Observational

Place & Duration: The study was conducted in the Department of Pathology, Chandka Medical College Larkana from January 1995 to December 2009.

Patients & Methods: Total of 191 patients, admitted in various hospitals of Larkana, and operated for hydatid cyst or incidental findings at histopathological examination were included. All the fixed biopsies were cut into representative tissue blocks, processed, stained for haematoxylin and eosin and examined under light microscope.

Results: Total of 191 cases of hydatid cyst were received in 15 years, out of which 119 (62.3%) cases occurred in liver with mean age 41.27 ± 16.27 SD, 44 (23%) in lung with mean age 44.04 ± 15.81 SD and remaining 28 (14.7%) in other uncommon organs.

Conclusion: The presence of hydatid cyst in uncommon sites in Larkana is 14.7%, hence possibility of hydatid cyst in almost every organ of the body should be suspected.

Keywords: Hydatid cyst, Unusual sites, Echinococcus granulosus.

INTRODUCTION

Hydatid cyst occurs through out world but is endemic in Middle East and other parts of the world, including Pakistan, India, Africa, South America, New Zealand, Australia, Turkey & Southern Europe^{1,2,3,4,5}. It is chronic disease, posing lot of health and economical challenges for many countries⁶. Because of frequent, easy traveling many new cases are nowadays being observed in non endemic areas⁷. It is common Zoonotic disease caused by echinococcus granulosus occurring in areas where people keep cattle, sheep and dogs near their living areas^{5,8,9,10}. Humans play the role of accidental intermediate hosts¹. The growth of cyst is often insidious, and becomes symptomatic only late in the course of disease¹¹. Usually duration of cyst formation from the ingestion of the eggs by a host, up to symptomatic stage of the disease is 10-12 years. However this period depends largely on the elasticity and expandability of the organ and shortens significantly upon rupture of the primary cyst¹².

In humans the infestation by echinococcus is acquired incidentally by ingestion of eggs¹³ which are resistant to many environmental conditions and are excreted in the feces of dogs^{14,15}. The larvae spread through penetration of intestinal walls and most of them are

trapped in liver^{1,9}, hydatid disease in human occurs commonly in liver (55-70%) & lung (18-35%)², even though hydatid cyst, spreading via portal and systemic circulation can affect almost every organ or tissue in the body¹⁶ i.e. ovaries, abdominal wall & cavity, mediastinum, muscle, uterus, broad ligament, bones, kidney, thyroid, brain, spleen etc^{1,2,12,17,18,19}.

In view of above findings we looked at 15 years experience of hydatid cyst with an aim to see the difference in presentation of hydatid cyst in unusual sites in Larkana as compared to other parts of the world.

PATIENTS & METHODS

This was an observational study carried out retrospectively in the Department of Pathology, Chandka Medical College Larkana and private laboratories of Larkana, from January 1995 to December 2009, spanning a period of 15 years. All cases admitted in surgical units in Chandka Medical College Larkana Hospital, Gynecological departments of Shaikh Zaid Women Hospital, Larkana and private medical centers of Larkana and operated for hydatid cyst as primary diagnosis or incidental observations of cyst at histopathological examinations were included.

The specimens were fixed in 10% formal saline²⁰. 1 cm thick blocks were taken and processed in automatic processor (Microme Germany) for 16-18 hours²¹, later on paraffin embedded blocks were prepared and thin sections 5 micron thick were cut with the help of manual rotary microtome (SLEE Mainz Germany), and stained with haematoxylin & eosin²². The sections were mounted with dibutyl phthalate xylene (DPX) and examined under low power (x 10) objective and high power (x 40) objective. The slides were initially examined by Assistant Professor and later on verified by Professor of Pathology.

RESULTS

A total of 191 cases were diagnosed during the period of 15 years, 105 (55%) were males while 86 (45%) females with males to female ratio of 1.2:1. The age ranged from 13-73 years with mean age of 42.41 years $\pm$ 16.21 SD as shown in table 1. The distribution of hydatid cyst affecting organs / tissues is shown in table 2. Majority of cases were in liver 119 (62.3%) and lung 44 (23%) remaining 28 (14.7%) were at unusual sites involving thyroid, gall bladder, spinal cord, breast, spleen, ovary, orbit, peritoneum, kidney and soft tissues (Table-3). Statistics for hydatid cyst in various sites is shown in table-4, which indicates that mean age for hydatid cyst in kidney is quite significant 49.33 years $\pm$ 4.61 SD as compared to mean age of occurrence in other organs. Highest mean age is seen for hydatid cyst in orbit which is 54.50 years $\pm$ 9.19 SD whereas lowest mean age is seen in hydatid cyst of liver 41.10 years $\pm$ 16.23 SD.

The symptoms in the patients varied according to organ / site involved and some vague symptoms with fatigue and weight loss in some cases. Cases with spinal cord involvement presented with paraplegia. In one case of spinal cord there was history of rupture of main cyst with formation of multiple small cysts retroperitoneally.

Table-1: Mean age of the cases of Hydatid cyst.

N	Valid	191
	Missing	0
Mean		42.41
Median		44.00
Mode		51.00
Std. Deviation		16.21
Variance		262.80

Table-2: Distribution of cyst in various sites of body

Sites	No	%
Liver	119	62.3 %
Lung	44	23%
Unusual	28	14.7%
Total	191	100%

Table-3: Distribution of Hydatid cyst at unusual sites

Site	No	%
Thyroid	4	14%
Gallbladder	1	3.6%
Spinal Cord	5	18%
Breast	1	3.6 %
Spleen	1	3.6%
Ovary	3	10.5%
Orbit	2	7.2%
Peritoneum	7	25%
Kidney	3	10.5%
Soft tissue	1	3.6%
Total	28	100%

Table-4: Statistics for hydatid cyst

Sr. #	Site	Mean age	Std: Devi:	95 % confidence interval for mean	
				Lower Bound	Upper Bound
1.	Liver	41.10	16.23	38.15	44.04
2.	Lung	44.45	15.86	39.63	49.27
3.	Thyroid	51.50	13.02	30.77	72.22
4.	Spinal cord	43.60	18.18	21.01	66.18
5.	Ovary	51.33	9.50	27.72	74.94
6.	Orbit	54.50	9.19	-28.09	137.09
7.	Peritoneum	41.57	19.74	23.30	59.83
8.	kidney	49.33	4.61	37.85	60.80

DISCUSSION

Hydatid disease though eradicated in many countries, is still prevalent in agriculture based countries like Pakistan^{9,23}.

The Hydatid disease is more common in males than females as reported by Fahim and Salamah⁸ (males 63 %, females 33 %), which is in agreement with our study, (Males 55%, Females 45%), while in some endemic areas females are affected more than males because of living in close contacts with the parasite⁹.

The disease more commonly affects liver and lung but in 10% cases unusual sites are involved^{24,25}, whereas Elizondo¹⁹ has found hydatid cyst in 17.5 % cases to be at unusual sites and we found hydatid cyst at unusual sites in 14.7% which is quite significant.

In one of the study from India it has been reported to occur even in broad ligament of uterus¹⁷ and in an other report from Lahore it has been found in breast and neck⁹ but we did not find its presence in uterus and neck. Etaiwi & Mabreh²⁶ have reported its presence in superior rectus muscle but we could not find this in the present study. Masroor et al¹⁷ have reported a hydatid cyst of breast which we also found in our study in one case. Still a very rare presentation was reported by S Abdullah Iqbal²³ as disseminated intra abdominal hydatidosis but it was not documented in our present study.

Our study of 191 patients has revealed mean age of 42.41 years $\pm$ 16.21 SD which is comparable to mean age of 40.91 years $\pm$ 20.7 years in Middle East as reported by Fahim & Salamah⁸.

The present study has shown lowest mean age for hydatid cyst in liver is 41.1 years $\pm$ 16.23 SD and highest mean age for hydatid cyst in orbit is 54.5 years $\pm$ 9.12 SD, but other studies have not mentioned mean ages for hydatid cyst in different organs of the body^{6,7,17,23}.

Hydatid cyst of soft tissues is said to be present in less than 1% cases and we found the incidence in our study to be 0.5% which is almost similar study of Sahin et al¹⁵. In one case we found multiple small cysts retroperitoneally which were possibly because of rupture of main hydatid cyst in the spinal cord this has not been reported by any in literature to date

We found almost similar incidence of hydatid cyst in our study as compared to other studies as far as liver and lungs are concerned. We found 62.3% cases of hydatid cyst in liver as compared to 55-70%, and 23% in lungs as compared to 18-35% reported by Abu-Eshy¹⁸, Asku et al¹².

CONCLUSION

In conclusion we can summarize that cystic echinococcus is a disease manifesting in middle aged

with slight male predominance. It can affect primarily liver & lungs but no organ is spared as shown in our results, hence Physicians and Surgeons should always look for possibility of hydatid cyst in almost every organ of body.

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Original Article**District Hospital (DHQ) Capable to Treat Snake Bite Cases****1. Hussain Bux Kolachi 2. Kanaya Lal Talreja 3. Akbar Qazi 4. Purtab Puri**

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ABSTRACT

Objectives: 1. To know the proportion of Haemotoxic and Neurotoxic snake bite cases admitted in DHQ Hospital.
 2. To collect data about victims and their cure rate by ASV injectable serum.
 3. To determine that DHQ hospital is capable to treat snake bite victims or not.
 4. To recommend improvements for snake bite treatment on basis of this study.

Design of Study: Cross sectional study.

Place and duration of Study: This study was conducted at Medical ward of District Hospital Mirpurkhas, Sindh from January to December 2005 on snake bite cases.

Patients and Methods: 135 patients of snake bite were taken in this study. Patients were taken of both sexes and all ages.

Inclusion Criteria: Only patients with snake bite history and clinical signs of bite fang punctures were included.

Exclusion criteria: Snake bite cases with only history no fang puncture marks and no clinical envenomation signs or treated by private hospital or GPs were excluded.

Results: 1. 135 Cases admitted during 12 months of the year 2005, 120 (86.2%) were male and 20 (14.8%) females (Table-1).

2. The age distribution of snake bite cases showed that 12 (8.9%) were small children age 01-04 years showing a miserable situation of neglect by mother and family. An other group 38 (28.1%) were also children aged between 05-09 years, the third group is also children between 9-14 years, which is 20 (14.8%), there were 11 (8.1%) in teen age (15 to 19) years. There were 39 (28.9%) cases in age of 30 and above (Table-8).

3. The type or species of snake bite as stated by patients or their attendants revealed that 112 (83.0%) said viper (lundi) have bitten which is haemotoxic and 23 (17.0%) snake bite cases were bitten by Cobra (Nanagor sanp) which is neurotoxic.

4. After ASV treatment all snake bite cases were cured, and no death or referral was reported. Hence DHQ hospitals are capable to deal with snake bite cases of all types.

5. Stock of ASV and supply in DHQ hospital was satisfactory as per data 134 (99.3%) cases when admitted. But for 01 case it was not available. This shows that this Vaccine should be available in excess quantity.

Conclusion: Snake bite is endemic and common public health problem in district Mirpurkhas adolescents and teenagers are bitten in large number but cure rate with Anti Snake Venom (ASV) injection is highly satisfactory, viper and cobra are frequently stated species present in Mirpurkhas. DHQ hospitals are capable to deal all the cases of snake bite. Anti snake Venom supplied in Pakistan is very effective against cobra and viper.

Key Words: Snake Bite, ASV, Cobra, Viper

INTRODUCTION

Snake bite is an injury causing puncture wound due to fangs and on some occasions results in envenomation^{1,2}. It is estimated that there are 3000 types of snake species and out of this large number 15% are harmful to human population.³ They are found every where in the world except Antarctica an Ice laden continent the colubrids family has 700 species but only five are venomous.⁴ It is estimated that there are 5.4 million snake bites, 2.5 million envenoming and 125000 deaths, those who survive suffer from tissue destruction due to venom and have life long disability.⁵ Most envenoming and fatalities occur in South Asia, South East Asia,

and sub Saharan Africa The India reporting highest snake bite deaths than any other single country in the world.⁶ All of these deaths are caused by four species comprising of Russell's viper, Indian Cobra, saws called viper and common krait, In Africa puff adder viper causes most fatalities. Industrial growth, rubber and Banana plantations attract snakes and there are more snake bite cases reported.⁷ Middle East has more venomous snakes than Europe, there are 100 deaths per year. The population of Europe is 731 million but there are only 30 bites annually. Only viper species are present, better health care facilities, availability of anti snake venom hence fatalities are rare. Australian snakes are highly venomous in the world but availability of

anti snake venom has made death, a rare thing. In United states of America there are 120 species of snakes but only 20 are venomous on average 4 bites occur in 100,000 population⁹ There is a global trend that snake bites are more in summer than winter and snakes are more active also human trend to go outdoor in agriculture fields. Tropical regions face more snake bites as compared to non tropical and non agricultural areas. Cases between (17 – 27) years and elderly are more likely to die^{10,11,12} The symptoms of all snakes include fear, panic, emotional instability which causes nausea, vomiting, diarrhoea, vertigo, fainting, tachycardia, cold and clumsy skin, Media, literature, folklore are creating atmosphere and victims may feel danger of sudden death¹³.

The anti snake venom was invented by French physician. Albert Valmette for the treatment of Indian Cobra bite in 1895 by injecting small amount of venom in to animal usually horse or sheep which starts immune response the resulting abti bodies are harvested from animals blood.¹⁴ Despite great advances in emergency cover ASV is still best treatment for snake bites, Hungarian artist Gyula Benczur in a painting in 1911 showed that Cleopatra VII committed suicide by snake bite to her left breast after hearing death of Mark Anthony.^{15,16}

Based on the use of anti-venom it is estimated at least 40,000 deaths episodes occur in every year and 2660 victims die who are children between 09- 15 years of age.¹⁷

Mirpurkhas district was the earlier part of Tharparkar District confined its present territorial existence since 31st October 1990. The Tharparkar district was formed in 1801, the total area of the district is 2925 Sq KM with 96000 population density per square kilometer is 310 persons. There are nos. of hospital and dispensaries with one district Headquarter Hospital, 35 BHUs, 6 RHCs and 4 Taluka Hospitals, the main occupation is agriculture and the district is irrigateble with 2 Cannals i.e Mithairao and Jumrao, and some part is irrigated with Naseer Cannal. The climate of the district is exreme, April to October is hot, and however the winter is considerably cooler by north western breeze. There is Kaho Jo Daro a historical aurchiological site of same age of Mohan Jo Daro of Buddhist Stuppa. The town is 68 KMs away from Hyderabad and is 198.12 meter above the sea level. Mirpurkhas is an important market for agriculture production such as wheat cotton, rice and mangoes. The temperature in summer varies between 39°C to 43°C and in winter 21°C to 32°C the average annual rain fall is 20.32cm.¹⁸

PATIENTS AND METHODS

Study Design: Cross sectional study.

Setting: Medical Ward, District Hospital Mirpurkhas.

Sample size: 135.

Data analysis: SPSS version 16.

Data Collection method: Questionnaire designed and pre-tested was used to collect demographic, clinical and treatment plan data with Anti -Snake Venom(ASV) and outcome was recorded, an informed consent was sought from patient before collecting data. The local language was used in asking the information from respondents.

Inclusion Criteria: Only patients with snake bite history and clinical signs and bite fang punctures were included.

Exclusion criteria: Snake bite cases with only history no fang puncture marks and no clinical envenomation signs were excluded.

RESULTS

1. There were 135 Cases admitted during the twelve months period of the year 2005 out of theses there 120 (86.2%) male and 20(14.8%) females (Table 1).

2. The age distribution of snake bite cases shows that 26 (19.3%) cases were in the age group of 10-14, 12(6.9%) in the age group of 15-19 year , 9 (6.7%) case were in the age of 20-24 year, 25(18.5) cases were in the age of 25-29 years, 22 (16.3%) in the age group 30-34 years, 11 (8.1%) in the age group of 35-39 years, 8 (5.9%) were in the age group of 40-44 years, 5(3.7%) in the age of 45-49 years and 17 (12.6%) were in the age group of 50 and above years. The adolescent and teenagers were 28.2%. The 12% were 50 years and above the others were either young or in the middle age between 20-50 years (Table 2).

3. The marital status of snake bite showed that 114 (84.4%) were married and 21 (15.6%) unmarried this is doubtful because age structure showed child victims r child marriage is practiced in this district (Table 3).

4. The religion of snake bite cases as per table shows that 95 (70.4%) cases were Muslims and 40 (29.8%) were non Muslim mostly Hindu (Table 4).

5. The Education status if snake bite showed that 116 (85.9%) case were illiterate and 18 cases were literate (Table 5).

6. It shows the socio economic status of snake bite victims there were 7 (5.2%) snake bite cases who were very poor 116 (85.2%) were poor, only 13 (9.6%) were in middle income level showing association between snake bite and poor socio economic condition (Table 6).

7. The occupation of Snake bite cases shows that 118 (87.4%) were having occupation of agriculture while 17 (12.5%) were in non agriculture occupation (Table 7).

8. The taluka wise/sub district wise distribution of snake bite cases showed that 86 (63.7%) (cases cane

from Mirpurkhas Taluka, 16 (11.9%) from Umerkot taluka which is now separate district, 11 (8.1 %) cases from Digri, 9 (6.7%) cases from Samaro, 6 (4.4%) from Pithoro taluka, 2 (1.5%) cases from Kot Ghulam Muhammad and 5 cases from adjoining district of Sanghar and Tando Allah Yar came to DHQ hospital (Table 8).

9. The distance traveled by snake bite to reach DHQ Mirpurkhas hospital showed that 12 (8.9%) cases traveled 1 to 4 Kilometer, 38 (28.1%) traveled 5 to 9 Km m 20 (14.8%)

Traveled 10 to 14 km, 11 (8.1%) traveled 15 to 19 km, 39 (28.9) cases traveled 30 and above km distance (Table 9).

10. The mode of arrival of snake bite cases showed that 77 (57.0%) reached by public transport, buses, vagans, Train, 2 (1.5%) used ambulance and 56 (41.5%) reached by private or hired transport (Table 10).

11. Whole Blood clotting Time in snake bites cases were observed by using time watch it was seen that 8 (5.9%) cases had normal clotting time less than 5 minute, 25 (18.5%) had clotting time between 5 to 9 minutes, 32 (23.7%) cases had 10 to 19 minutes Clotting time, 68 (50.4%) had clotting time 20 minutes and above 5 (3.7%) cases clotting time was not recorded on data form (Table 11).

12. The Anti Snake Venom (ASV) is available in 10cc vial preparation mostly made by NIH Islamabad or imported from Serum Institute of India Poona is supplied and used as IV infusion dextrose drib or saline drib after test dose and seeing clotting time of venous blood which is 5 minute normal and above it is abnormal, there were 2 (1.5%) cases who settled without ASV perhaps venom could not be in big amount or dry bite happened, 45 (33.3%) settled after giving 1 vial of 10cc of ASV in infusion .same way 62 (45.9%) cases settled after 2 vial of 10cc ASV injections, 19 (14.1%) cases settled after 3 vial of 10cc each ASV injections. 6 (4.4%) cases settled after 4 vial of 10cc each of ASV injection and 1 (0.7%) case settled after 5 vials of ASV injections of 10cc each (Table 12).

13. The symptoms in snake bite cases were observed and data shows that 112 (83.0%) had bleeding symptoms i.e hem toxic signs and symptoms while 23 (17.0%) were Nuerotoxic like salivation, muscle weakness, and paralysis (Table 13)

14. The type or species of snake bite as stated by patient of attendant revealed that 112 (83. 0%) victims or their attendant said viper (lundi) have bitten this is Haemotoxic and 23 (17.0%) snake bite cases or relative said they were bitten by Cobra (Naang or Sanp) this is Nuerotoxic (Table 14).

15. The seasonal trend of snake bite cases showed that 88 (65.2%) cases occurred in summer, 39 (28.9%) cases in Autumn and 7 (5.2%) cases occurred in spring, there was no cases in winter (Table 15).

16. The month wise distribution of snake bite cases shows that there were 7 (5.2%) in March, 15 (11.1%) in April, 24 (17.8%) cases in May, 33 (24.4%) in June these highest in single month, 19 (14.1%) cases in July, 12 (8.9%) in August and 25 (in September this showed 7 months out of 12 month snake bite are occurring but 5 months of winter season no snake bite is occurring this shows low human and snake less movement months in Mirpurkhas and barrage irrigated district with round the year agriculture crops like cotton wheat chilies and sugar can and mango crops sowing and harvesting, (Table 16).

17. After ASV treatment outcome snake bite cases as cured, died or referred showed that all 135 snake bite cases were cured and no death or referral was reported. Hence DHQ hospitals are capable to deal with snake bite cases of all types (Table 17).

18. The blood transfusion was not needed and settled with ASV injections only in 132 (98.5%) case but 2 (1.5%) cases needed blood transfusion and ASV both and they also settled (Table 18).

19. Stock of ASV and supply in DHQ hospital whether satisfactory or unsatisfactory as per data 134 (99.3%) cases when admitted ASV stock and supply remained satisfactory but for 1 cases stock and supply was unsatisfactory or not available. This shows that this life saving medicine. Vaccine be available in excess not in short supply (Table 19)

Table-1: Showing Sex wise distribution of Snake Bite Cases.

Sex	Frequency	Percent
Male	115	85.2
Female	20	14.8
Total	135	100.0

Table 2: Showing age wise distribution of snake bite cases.

Age	Frequency	Percentage
10-14	26	19.3
15-19	12	8.9
20-24	9	6.7
25-29	25	18.5
30-34	22	16.3
35-39	11	8.1
40-44	8	5.9
45-49	5	3.7
50 and above	17	12.6
Total	135	100

Table-3: Showing marital Status of Snake Bite Cases.

	Frequency	Percent
Married	114	84.4
Un-Married	21	15.6
Total	135	100.0

Table-4: Showing Religion of Snake Bite Cases.

Religion	Frequency	Percent
Muslim	95	70.4
Non Muslim	40	29.6
Total	135	100.0

Table-5: Showing Education of Snake Bite Cases.

Education Level	Frequency	Percent
Illiterate	116	85.9
Literate	19	14.1
Total	135	100.0

Table-6: Showing Socioeconomic status of Snake Bite Cases.

Socio- economic status	Frequency	Percent
Very Poor	7	5.2
Poor	115	85.2
Middle Income	13	9.6
Total	135	100.0

Table-7: Showing Occupation of Snake Bite Cases.

Occupation	Frequency	Percent
Agriculture	118	87.4
non- Agriculture	17	12.6
Total	135	100.0

Table- 8: Showing Taluka/area of Snake Bite Cases.

Taluka	Frequency	Percent
Mirpurkhas (MPK)	86	63.7
Umer kot (U.K)	16	11.9
Digri	11	8.1
Samaro	9	6.7
Pithoro	6	4.4
Kot Ghulam Mohd (K.G.M)	2	1.5
Adjoining Districts	5	3.7
Total	135	100.0

Table-9: Showing Distance Traveled in Kilometers by snake bite cases.

Distance in Kilometers	Frequency	Percent
1-4	12	8.9
5-9	38	28.1
10-14	20	14.8
15-19	11	8.1
25-29	15	11.1
30and above	39	28.9
Total	135	100.0

Table-10: Showing Mode of Transport used by Snake Bite Cases.

Mode of Transport	Frequency	Percent
Public	77	57.0
Ambulance	2	1.5
Private	56	41.5
Total	135	100.0

Table-11: Showing Blood Clotting Time of Snake Bite Cases.

Clotting Time	Frequency	Percent
<5 (minutes Normal)	8	5.9
5—9 (minutes Abnormal)	25	18.5
10-19 (moderate Abnormal)	32	23.7
20and Above (minutes High abnormal)	68	50.4
Unspecified	2	1.5
Total	135	100.0

Table- 12: Showing Anti Snake Venom (ASV) injection Vials given to Snake Bite Cases.

ASV 10 CC Vials injected I/V Infusion	Frequency	Percent
No ASV given	2	1.5
1 Vial of ASV	45	33.3
2 Vials of ASV	62	45.9
3 Vials of ASV	19	14.1
4 Vials of ASV	6	4.4
5and Above	1	.7
Total	135	100.0

Table-13: Showing Symptoms Haemotoxic or Neurotoxic present in Snake Bite cases.

Signs and symptoms	Frequency	Percent
Haemotoxic	112	83.0
Neurotoxic	23	17.0
Total	135	100.0

Table-14: Showing Type of snake as stated by victim or his attendant Viper or Cobra.

Type of Snake	Frequency	Percent
Viper	112	83.0
Cobra	23	17.0
Total	135	100.0

Table-15: Showing Season in which Snake bite occurred among victims admitted cases.

Seasons	Frequency	Percent
Summer	88	65.2
Autumn	39	28.9
Spring	7	5.2
Winter	1	.7
Total	135	100.0

Table-16: Showing Month wise distribution of Snake bite cases.

	Frequency	Percent
March	7	5.2
April	15	11.1
May	24	17.8
June	33	24.4
July	19	14.1
August	12	8.9
September	25	18.5
Total	135	100.0

Table- 17: Showing After ASV treatment outcome of snake bite cases as Cured, died and referred.

	Frequency	Percent
Cured	135	100.
Referred	00	00
Died	00	00
Total	135	100

Table-18: Showing Blood Transfusion needed to Snake bite cases.

Blood Transfusion	Frequency	Percent
No blood Transfusion	133	98.5
Blood Transfusion done	2	1.5
Total	135	100.0

Table-19: Showing Stock of ASV whether satisfactory or not satisfactory in DHQ Hospital 2005.

	Frequency	Percent
Satisfactory	134	99.3
Unsatisfactory	1	0.7
Total	135	100.0

DISCUSSION

It is evident from snake bite data that 135 cases of snake bite reported in DHQ hospital, Mirpurkhas for treatment showing endemicity of this problem. It is an agricultural district where cotton, wheat, Banana, sugarcane, chilies and mangoes are grown. It has good irrigation canal system and crops and agricultural activities are round the year which provides snake breeding atmosphere favorable, and due to agriculture fields and farming activities people are bitten. 87%

victims were from agriculture occupation. The age pattern showed that adolescent 10-14 and teenagers 15-19 were about 28.2% of victims which finding is different but very close to Europe and Africa where 17 to 27 years of age is mentioned as most common age of sufferers.¹⁹ Banana crop is also grown in this district hence snake bite cases as reported in international literature is linked to Mirpurkhas district²⁰ The two types of snakes viper and cobra seem common as reported in India. The height of problem is that in whole Europe with 731 million populations 30 cases are reported annually where as in one district of Mirpurkhas with less than one million populations. 135 cases have occurred in one year. The availability and supply of anti snake venom (ASV) remained satisfactory hence death rate remained at level of Europe and USA or even better which gives confidence that our health delivery system and DHQ hospitals are capable to treat snake bite cases at par what is available in developed world. There is larger number of children bitten by snake hence UNICEF and WHO should collaborate and supply anti snake venom in adequate quantity and at a low cost.

RECOMMENDATIONS

- Training programs for Doctors and Para-medical staff working in rural areas for early treatment and management of snake bite cases.
- Provision of anti snake venom (ASV) in adequate quantity with cold chain system.
- Awareness program for the masses about misconception and early management of snake bite cases.

CONCLUSION

Snake bite is endemic and common public health problem in district Mirpurkhas adolescent and teenagers are bitten in large number but cure rate with Anti Snake Venom (ASV) is satisfactory, viper and cobra are frequently reported species present in Mirpurkhas and causing bite from June to September. Rate of incidence is high. Snake bite in Mirpurkhas in a year surpasses the number of snake bites in whole Europe during same period. DHQ hospitals are capable to deal all cases of snake bite without referral. Anti Snake Venom supplied in Pakistan is very effective against cobra and viper.

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Original Article

Mechanism of Incorporation of Newly Synthesized Myosin Alkali Light Chain into Myofibril

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ABSTRACT

Objectives: The present work was designed to study the incorporation of newly synthesized myosin alkali light chain (MLC) molecules into myofibrils.

Materials and Methods: cDNA of fast skeletal muscle type of MLC tagged with green fluorescence protein (LC3f-GFP) was transfected into cultured chicken cardiomyocytes, and the assembly of expressed LC3f-GFP was observed in living cells under a fluorescence microscope equipped with a cooled CCD camera.

Results: At 14-16 hours after transfection, LC3f-GFP was diffusely distributed in the cytoplasm of cardiomyocytes. In some cells, however, intense fluorescence spots of LC3f-GFP were found along myofibrils with a periodicity of 1.2 μm . Confocal microscopy of such cells, stained with rhodamine-labeled phalloidin, revealed the fluorescence spots of LC3f-GFP localized at both ends of A-band. When these cells were further incubated, LC3f-GFP came to be localized at all levels of the A-bands by 26 hours after transfection.

Conclusion: These results indicate that myosin filaments are not replaced with newly synthesized myosin molecules at once along their length, but molecules in filaments are replaced individually from their ends.

Keywords: Myosin light chain, isoform, epitope-tag, cDNA transfection, immunofluorescence confocal microscopy

INTRODUCTION

Recently, rapid advances in the principles and basic tools of molecular biology have helped to unveil the structure and regulatory mechanism of genes. Intracellular fine structures and their molecular characteristics have also been clarified by various morphological techniques. However, the mechanism and dynamics of formation of functional structures from proteins, synthesized from genetic information, have not received much attention.

Myofibril is formed by regular arrangement of various proteins. It is therefore an ideal model structure for studying the above mentioned theme. Myosin is a major contractile protein found in all muscle cells and in most non muscle cells as well [1]. It is represented by a multigene super family, composed of 12 different classes [2]. The myosin II class (conventional myosin), is the best studied class of myosin and represents myosins from the three muscle types, skeletal, cardiac and smooth muscle, as well as non muscle isoforms. Conventional myosin is a hexamer composed of two pairs of myosin heavy chain (MyHC) essential or alkali light chain (LC) and regulatory light chain [3]. A molecule of MyHC consists of a globular head joined to a long rod-like tail, and one copy of each of the light chains associates with MyHC near the head-rod junction, also known as myosin neck [4, 5]. At the

myosin neck, the light chains are arranged in tandem with the LC more proximal to the head and wrap around an 8.5 nm long, hydrophobic α -helix that extends from the C-terminus of the globular head of MyHC [6, 7]. A long α -helix in the myosin head constitutes a lever arm together with the light chains. This is important for the efficient motility of myosin [8]. The light chains are thought to provide rigidity to the neck, and thereby to enforce the power stroke generated during actomyosin interaction [9, 10, 11]. Further, phosphorylation of the regulatory light chain triggers the activation of the contractile apparatus of vertebrate smooth muscle and nonmuscle cells [12,13] and plays a modulatory role in striated muscle by altering the calcium sensitivity of force production [14,15]. Similarly, phosphorylation of MLC is a critical biochemical determinant of cellular contraction. It facilitates the aqueous outflow in trabecular meshwork cells [16]. Saszi et al [17] have brought evidence to suggest that myosin based contractility plays an important role in the regulation of epithelial function, particularly paracellular permeability. This appears to be correlated by the report of Russo et al [18], who noted that small epithelial wounds heal by purse-string contraction of an actomyosin ring that is also regulated by myosin light chain. Extensive variation exists in MLC isoform expression in mammalian skeletal muscles fibers. There

are distinct patterns among different species and among the muscles with in an individual species ^[19].

The contribution of the regulatory light chain to myosin's enzymatic activity has been well studied. Evidence suggests that myosin II is activated by regulatory light chain (RLC) phosphorylation. Inactivation of myosin results from RLC dephosphorylation by MLC phosphatases containing a myosin phosphatase targeting submit MYPT1 ^[20]. The role of LC is less well understood except for its mechanical functions. Accumulating evidence suggests however, that distinct isoforms of LC are presented in different muscles and in nonmuscle cells. These isoforms may therefore be associated with different contractile properties of these tissues ^[21]. This is corroborated by the well established fact that mutations in specific structural elements of the motor protein myosin are directly linked to debilitating diseases involving malfunctioning striated muscle cells ^[22]. The present study was undertaken to elucidate the mechanism of incorporation of newly synthesized myosin alkali light chain into myofibrils.

MATERIALS AND METHODS

Construction of LC Expression Plasmids.

Full length cDNA clones encoding the chicken LC3f ^[23] were used in this study. The epitope-tag encoding the 11 carboxy-terminal amino acids of vesicular stomatitis virus (VSV) glycoprotein ^[24] was introduced into the 3' end of the coding sequence of these cDNAs. The cDNA were then subcloned into the eukaryotic expression vector pSCT, as described by Soldati and Perriard ^[25].

Construction of GFP-tagged (LC3f-GFP)

The 3' end of the coding sequence of the VSV-tagged LC3f cDNA was modified by PCR to remove stop codon and to introduce the **BamHI** site. The PCR product was subcloned into the GFP expression plasmid pEGFP-N1 (Clontech lab. Inc.) using the **BamHI** site in the multiple cloning sites of the plasmid.

Cells Cultures:

Culture of 7 day's old chicken cardiomyocytes was prepared as described previously ^[26]. Cells dissociated by trypsinization were seeded at a concentration of 2×10^5 cells in 1.5 ml of culture medium in 35 mm dishes. The medium consisted of 75% potassium-free balanced solution (116mM NaCl, 0.8mM MgSO₄, 0.9 mM CaCl₂, 26.2 mM NaHCO₃, 5.5 mM dextrose, pH 7.3), 20% Medium 199 (Nissui Pharmaceutical Co., Ltd., Tokyo, Japan), 4% horse serum (Life Technologies, Inc., Grand Island, NY, USA) and 1 % penicillin-streptomycin mixture. Cells were maintained at 37 °C in an atmosphere of 5 % CO₂ in air at saturation humidity.

DNA Transfection:

DNA of LC constructs was prepared by the clear lysate technique and banded on CsCl gradients. Cells were allowed to grow for 20 – 24 hours before transfection of LC constructs. For transfection of chicken cardiomyocytes, LipofectAMINE (Life Technologies, Inc.) was used. Vector DNA (2µg) and 10µl of lipofectAMINE (2mg/ml in membrane filtered water) were mixed in 200µl of Opti-MEM 1 (Life Technologies, Inc.) and incubated for 40 minutes to allow DNA-liposome complexes to form. Just prior to the transfection the cells were rinsed twice with culture medium, and then the solution was replaced by the DNA – liposome complex solution. After 14-16 hours of incubation, the cells were rinsed with the culture medium.

Microscopy of LC3f-GFP:

Cells expressing LC3f-GFP were observed under a Zeiss Axiovert 100TV equipped with a cooled CCD camera (PXL 1400, photometrics, Tuscon, AZ, USA) using a Zeiss Plan-Neofluar (100x/1.3) objective lens. Images were assembled using IPLab spectrum software (Signal Analytics, Vienna, VA, USA). Cells transfected with LC3f-GFP were rinsed briefly with phosphate buffered saline (PBS) and then fixed with 3% paraformaldehyde in PBS for 10-15 minutes. After a brief rinse with PBS and culture medium, the cells were stained with rhodamine-labeled phalloidin, and examined under a Zeiss LSM 410 invert confocal laser scanning microscope equipped with helium/neon and argon/krypton lasers using a Zeiss plan Apochromat (63x/1.4) objective lens. Projection views were generated from sets of consecutive optical sections taken through the whole depth of cells at intervals of 0.7µm using of Zeiss LSM 410 software.

RESULTS

In cells where only GFP was expressed it was diffusely distributed throughout the cytoplasm. Prolonged incubation did not affect the distribution within the cells.

Incorporation of LC3f-GFP into Myofibrils

In order to study how newly formed LC molecules are incorporated into myofibrils, LC3f-GFP was expressed in cultured chicken cardiomyocytes, in the present study and its dynamics was monitored in living cells. When only GFP was expressed, it was always diffusely distributed throughout the cytoplasm. Even after prolonged incubation of cells, it was still not incorporated into myofibrils. When LC3f-GFP was transfected, it was diffusely distributed in the cytoplasm of cardiomyocytes at 14-16 hours after transfection. At higher magnification, intense fluorescence bands of

LC3f-GFP were found along myofibrils with a periodicity of 1.3 μ m. The width of each band was approximately 0.4 μ m, and the distance from the edge of one band to the edge of the neighboring band was 1.6 μ m which was equivalent to the width of the A-band. When these cells were further incubated, fluorescence of LC3f-GFP in the cytoplasm was reduced and its band patterns became more obvious after 26 hours of transfection. Each fluorescence band had broadened to 0.7 μ m, but the distance between the edges of two adjacent bands was unchanged.

When cells were fixed and stained with rhodamine-labeled phalloidin at early stages of LC3f-GFP expression, periodically aligned fluorescence spots (or bands) of LC3f-GFP were localized around the center of phalloidin-positive actin bands.

DISCUSSION

Dynamics of myoprotein assembly onto myofibrils has been studied by using microinjection of fluorescently labeled proteins like actin [27, 28, 29], α actinin [30, 31], and myosin [32, 33]. Green fluorescence protein (GFP) has emerged as a strong reporter molecule for monitoring gene expression [34], protein dynamics [38] and protein-protein interaction [35, 36, 37, 38]. Since intracellularly expressed GFP is visible under a fluorescence microscope without fixation or staining of the cells. It has been demonstrated that GFP fused to the C-terminus of the LC does not interfere with the localization and function of the LC [39].

In the present study, it has been observed that LC3f-GFP expressed in chicken embryonic cardiomyocytes was initially diffusely distributed in the cytoplasm and/or arranged in periodic bands along myofibrils at early staged, and then localized at all levels of the A-bands later. Because GFP itself could not be incorporated into myofibrils, it seems reasonable to suggest that changes of the LC3f-GFP localization might reflect the dynamics of LC3f in the cells.

Confocal microscopy of fixed cells stained with rhodamine-phalloidin at early stages revealed that LC3f-GFP was localized around the center of actin bands. This position corresponds to the Z-line, or to the ends of A-bands. It is well known that contraction of myofibrils usually occurs during fixation of muscle cells [36]. Judging from these results and the data obtained by measurement of the LC3f-GFP bands, the position of the periodic LC3f-GFP bands observed in living cells at early stages seems to correspond to the end of the A-band. Therefore, the present results indicate that myosin filaments are not replaced with newly synthesized myosin molecules all at once along their entire length. Molecules in the filaments are not replaced individually from their ends. This is consistent with the fact that there is greater exchange of new

MyHC at the ends than in the central region of the thick filament [40]. However, it still remains to be resolved whether nascent LC molecules can directly replace molecules in the thick filaments or associate with newly synthesized MyHC molecules prior to their assembly into thick filaments.

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Original Article**Health Problems in Children of Imprisoned Mothers****1. Ibad Ali 2. Muhammad Waqar Rabbani 3. Waqas Imran Khan****4. Muhammad Aslam Sheikh**

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ABSTRACT**Objectives:** To describe the health problems faced by children who accompanied their mothers in the prison.**Design:** An observational cross-sectional study.**Duration & Setting:** 30 children who accompanied their mothers in women jail Multan were examined from 1 October 2009 to 30 December 2009.**Patients and Methods:** The department of preventive and social pediatrics visited the woman jail Multan fortnightly for regular medical checkup and support to the children who were residing with their mothers in the jail. All the information regarding their ailments was recorded on a pre-designed questioner.**Results:** 17 children were male and 13 were female. Mostly children were between 1 to 5 years. Anemia and malnutrition was common. Other illnesses like ARI, scabies Diarrhea and asthma were also noted in these children. One child was suffering from Epilepsy. 26 children were fully vaccinated and 4 were partially vaccinated. Children's environmental condition was inadequate.**Conclusion:** The children who accompany their mothers in the prison have to face multiple medical and social problems like anemia, malnutrition, infections, asthma and Immunization. These disorders can be prevented by providing adequate living conditions, avoiding overcrowding, providing sufficient & balanced diet, sterilized water, proper Immunization and proper hand washing.**Key words:** imprisoned mothers, jail, children.**INTRODUCTION**

Over half the women serving prison sentences are mothers.¹ Imprisonment of parents causes many suffering to children. Disturbance of the home environment and child-care provision, are worse when the imprisoned parent is the mother.² The imprisonment of a woman who is a mother can lead to the violation of rights of her accompanying children in the jail. When a mother is imprisoned, her baby and/or young children may go into prison which can put the child at risk of multiple medical and social problems³. It is not advisable to separate babies and young children from their mothers. Jail environment is a homeless situation. Homeless children are more likely to have different health problems, so should be considered a high-risk group. They often live in crowded conditions, which increase the risk of acquiring common infectious diseases of the childhood, such as upper respiratory tract infections, ear infections, and diarrhea. Lice and scabies infestations are particularly high in these circumstances. The lack of access to adequate amounts of nutritious food may explain the evidence of anemia, malnutrition and stunting observed in the growth of homeless children. Incomplete immunization rates, asthma and psychosocial problems have been reported among these children.⁴ The psychological effects of separation during childhood are well documented^{5, 6}

while less so are the adverse effects of growing up in a prison environment⁷. Several studies have shown the risk of criminal behavior in children of imprisoned parents⁸.

PATIENTS AND METHODS

This study was conducted in women jail Multan from 1 October 2009 to 30 December 2009. We visited the prison fortnightly during this period. All children living in prison with their mothers were evaluated and information regarding, age, nutrition, weight, height, anemia and illnesses of the children especially respiratory tract infections, ear infections, diarrhea, scabies, asthma and immunization status, were recorded on a predesigned questioner. All conditions were diagnosed by history and clinical examination. Living conditions of the children were also observed.

RESULTS

The children were housed in a special dormitory with their mothers. They were active and interacting well. 17 children were male and 13 were female. Age distribution is shown in table 1. Living conditions for the children in prison are shown in table 2. Children accompanied their mothers in overcrowded prison cells and were sleeping on the floor of the room. No separate menu was available for the children, they shared the

meals served to the mothers at specified times. Table 3 shows the general health and nutritional status of the children, first degree malnutrition was noted in 7(23%)⁷, second degree in 1(3%) and third degree in 1(3%). As far as infections are concerned, ARI was present in 2(6%) children, diarrhea in 3(10%) and scabies in 4(13%) children. In our study 20(66%) children were anemic and one child was epileptic. Immunization was complete in 26 (86%) children and 4(13%) children partially vaccinated and health records were maintained by medical officers of the prison hospital. There was adequate play space

Table 1. Age distribution

age	no
<1year	1
1 to 5 year	19
5 to 10 year	10

Table 2. Conditions faced by children inside prison

Persons per toilet	30
drinking water	Unboiled unchlorinated tap water
special food	Nil
exposure to bad language	frequently
risk of accidental injury	minimal
Presence of mother	continuous

Table 3. General health of children in prison

growth	infections	asthma	anemia	Epilepsy	Immunization status
NORMAL 21(70%)	ARI 2(6%)	3 (10%)	20 (66%)	1 (3%)	Fully vaccinated 26(86%)
PCM 1 st degree 7(23%)	Diarrhea 3(10%)				Partially vaccinated 4(13%)
PCM 2 nd degree 1(3%)	Scabies 4(13%)				
PCM 3 rd degree 1(3%)					

DISCUSSION

A large number of children accompany their imprisoned mothers; not only in developing nations but all over the world. A large number of women prisoners throughout the world are mothers, an estimated 80 percent of imprisoned women in the UK jails are mothers. Over 60 percent of women prisoners have young children, and 3 percent have children living in

prison with them. The phenomenon that is causing worldwide concern is the number of children who are living in jail with their mothers. Relevant raw data and information relating to needs of women in prison with their children are negligible in a developing country like Pakistan. In Pakistani jails, children are grown up in conditions of deprivation and criminality, lack of proper nutrition, inadequate medical care and little opportunity for education³. In this study, 30% of the children were malnourished, similar finding has been described in a report by child family health international⁹ but the rate of malnutrition is high (64%) in children of imprisoned mothers as shown in a study conducted at Srilanka². In our study, anemia was found in 20(66%) babies but it was seen in 32.7% children of imprisoned mothers in a report by child family health international⁹. It may be due to lack of adequate food, insufficient parasite treatment, neglect by mothers, who are more concerned with their personal situation and work all the day. The children receive three meals a day from the jail; however, this often does not satisfy the daily requirements of a growing child, who should eat at least 4 to 5 times a day. Our study shows ARI in 6%, scabies in 13%, asthma³ (10%) and diarrhea in 3(10%) babies, these findings are comparable with the study done at Srilanka², these communicable diseases may be due to overcrowding and poor personal hygiene. In our study 26 (86%) children were fully vaccinated and 4(13%) were partially vaccinated and almost similar state of immunization was observed in a Srilankan study.²

CONCLUSIONS

Children living in prison with their mothers represent a vulnerable group with particular healthcare needs. The children who accompanied their mothers in the prison enjoy close bonds but they have to face multiple medical and social problems like growth, malnutrition, infections e.g. ARI, Diarrhea, & scabies, asthma, anemia and Immunization. These pathologies are treatable and preventable. These disorders can be prevented by providing adequate living conditions, avoiding overcrowding, providing sufficient & balanced diet, sterilized water, proper Immunization and proper hand washing. We recommend that child centered expertise should be available in the prison hospital and should be provided by a Pediatrician of the nearest hospital.. The stay in prison should be minimized for many mothers by expediting the legal process and improving the legal aid system. A coordinated effort by the departments of health and social services and the legal authorities is necessary to prevent these innocent children from being punished along with their mothers.

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Original Article

Gullein Barri Syndrome (GBS), the Leading Cause of Acute Flaccid Paralysis at Peoples Medical College Hospital Nawabshah

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ABSTRACT

Objective: To identify and treat the acute flaccid paralysis in interior of Sindh reported at PMCH Nawabshah.

Design: Retrospective, with proper date and record.

Place and Duration of Study: Medicine and ICU Department at Peoples Medical College Hospital Nawabshah from 31st January to 31st October 2009. Patients of all 3 medical units were involved in the study during this period.

Patients and Methods: 50 patients with acute flaccid paralysis (AFP) were admitted in Intensive Care Unit of Peoples medical college Hospital Nawabshah with support of all emergency measures and were evaluated.

Results: 50 patients presented with AFP during study period. 40 were males and 10 were females. GBS was the leading cause of AFP. Majority of the patients were young, outcome was excellent. 2 patients died due to respiratory failure.

Conclusion: GBS is the leading cause of AFP in adults in interior of the Sindh while facilities for treatment are limited, which need to be extended in the hospitals situated in interior of Pakistan i.e. ICU and plasmapheresis.

INTRODUCTION

Guillain-Barré syndrome (GBS) is an eponym for a heterogeneous group of immune-mediated peripheral neuropathies^{1,2} that occurs in previously healthy individuals within 1 to 4 weeks after respiratory tract infection³ or diarrhea but can follow surgery⁵ or immunization⁶. It is a well known disorder especially in young persons, pathologically there is demyelination of spinal roots and peripheral nerves. It is neuropathy characterized by a rapidly progressive weakness with or without sensory disturbance, in at least 2 legs and absent lower tendon reflexes⁷. Though sometimes sensory complaints and vasomotor crisis are also noticed in the patients. In most of the patients disability remains localized to lower limbs and eliminate spontaneously but disability may convert in crisis. CSF examination mostly shows an increased protein level but no increased number of cells⁸. Other causes of rapid progressive weakness need to be excluded e.g. poliomyelitis, transverse myelitis, hypokalemia. Incidence of GBS is 1.18 in 1000 per year and increases with age⁹.

In Pakistan no system is established to record its incidence and prevention. Most patients have an infection within 3 weeks period prior to onset of weakness e.g. upper respiratory tract infection, infective diarrhea. Despite treatment about 20% of patients are unable to walk, 6 months after onset of the disease. The risk of developing chronic GBS or to have 2nd bout of

GBS is very low. Death occurs due to respiratory failure as consequences of ascending paralysis involving diaphragms¹⁰.

PATIENTS & METHODS

This retrospective study was carried out in ICU, department of medicine at Peoples Medical College Hospital Nawabshah, from June 2008 to 31st December 2009. 50 patients with acute flaccid paralysis were included in this study, having no previous history of any major illness. All patients were kept in ICU.

Diagnosis was based on physical examination with decrease in power, tone in lower limbs, areflexia in lower limbs and CSF findings of absolutely raised proteins. Poliomyelitis was excluded by stool test. Limited lab investigations were carried out. Neuro imaging (computed tomography) and electro neuro physiological studies were carried out in certain cases.

After establishing the diagnosis, clinically stable patients were sent to home but those who were critically ill, were retained in ICU till recovery. All the patients were/ are in follow up.

Results were prepared with help of tables and graphs. Data was analyzed through SPSS software.

RESULTS

The 50 cases of acute flaccid paralysis were admitted. 10(20 %) were female and 40(80 %) male (Table-1). Male: female ratio is 4:1. There was wide variation of

age ranging from a minimum of 15 year to 40 year with mean age was 23 years (Table 2).

Majority of the 48(96%) cases were suffering from GBS while 2 (4%) cases were confirmed as poliomyelitis. Out of 48 cases of GBS 38 were males and 10 were females. Most of the patients were reported from rural areas of Nawabshah and periphery (Table 3). 10 patients were stable and were discharged after 3 days while 2 patients were critically ill at presentation, respiratory distress and died inspite of institution of plasmapheresis and mechanical ventilation. 36 patients were clinically unstable neurologically with poor cardiopulmonary status. They were kept in ICU for period till they were recovered. All the patients with GBS made recovery and 2 (4.15) cases were expired.

Table 1: Gender Distribution Of AFP

Sex	GB	Others
Male	38	2
Female	10	2

Table 2: Distribution According to Age

Age in years	Number of patients	%age
15-20	20	40%
21-25	10	20%
26-30	9	18%
31-35	7	14%
36-40	4	8%

Table 3: Distribution According to Areas

Districts	Number of patients	%age
Nawabshah	33	66%
Noshehro feroz	9	18%
Sanghar	4	8%
Khairpur	2	4%
Dadu	2	4%

Table 4: Distribution of GBs Cases According to Outcome In G.B Syndrome 48 Patients.

Clinically stable	Clinically unstable	Expired
10	36	2

DISCUSSION

AFP is the condition of diverse etiology; it needs proper evaluation at presentation to ensure the delivery of effective and timely management, otherwise it may prove fatal.

GBS is one of the important causes of AFP. This has been high lightened by previous studies, this is an acute demyelinating polyradiculopathy believed to be caused by immune mediated process with a mortality rate of 4 to 5 %¹¹.

In our study clinical feature was rapidly progressive muscle weakness often ascending from lower to upper

limbs and more markedly proximal than distally. Distal paraesthesia and limb pain often proceed the weakness. Facial and bulbar weakness requiring ventilatory support occurs in 20% of cases. In most patients muscle weakness progress from 1 to 3 weeks but rapid deterioration with respiratory failure can develop within hours. Diffuse weakness with widespread loss of reflexes are most striking findings¹⁰.

In our study approximately 80% patients recover spontaneously, while 20% need hospitalization. Prevalence of GBS has been reported to vary from place to place. A study conducted at Ayoub Medical College Abbotabad from January 2003 to December 2004 by Dr. Anis.ur.rehman and colleagues, showed predominance of GBS in females about 55% of the patients, while prevalence of GBS among AFP in Northern areas is 42.8 %¹².

A study conducted in Hong Kong during 1997 to 2002 reported a prevalence rate of 2 to 45% , Oman is 45% and 47 % from Australia among AFP. In Mexico 63% prevalence was during 1988 to 1991¹³.

A study conducted over 11 years period on 546 patients at Department of pediatrics neurology hospital Honduras Central America, GBS was found in 72.2 % patients with annual incidence of 1-37/100,000 and more common in males¹⁴.

Almost similar results are of Hazara study while in Bahawalpur Victoria Hospital Dr. Mazhar and colleagues conducted a study in 1998 with almost male dominant patients¹⁵.

In our study the males are dominant as seen in studies of different centers of the world. Emergency handling and care of the patients is mandatory with early management done in ICU with use of mechanical ventilation and plasmapheresis, the results are excellent. I/V immunoglobulin are also very effective but very expensive about Rs. 100,000 per day, so it is not practical while efficacy is same as plasmapheresis.

CONCLUSION

We recommend that every patient of AFP should be dealt properly and preferably in ICU. Mechanical ventilation + plasmapheresis / I/V immunoglobulin are mandatory when a patient develops respiratory distress.

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Seminar Report

Hepatitis Seminar – Recommendations for Legislation Against Reuse of Syringes

Mohsin Masud Jan

Editor

Pakistan has registered an alarming rise in hepatitis, with 12 million people suffering from hepatitis B and C, mainly, due to spread of the infection in hospitals and usage of unsafe injections, by quacks and qualified doctors alike.

“The World Health Organization (WHO) figured out the highest injection-patient ratio in Pakistan worldwide with approximately administration of two billion injections to the patients per year, out of which 80 per cent are unsafe and 90 per cent unnecessary,” said Prof Dr Aftab Mohsin, National Programme Manager, Prime Minister’s Programme for Prevention and Control of Hepatitis, while speaking at a seminar on “Unnecessary use of syringes can cause Hepatitis B & C” jointly organised by Mir Khalil-ur-Rahman Memorial Society and National Programme for Prevention and Control of Hepatitis here at a local hotel on 21st December, 2010.

In Pakistan, he said, approximately one billion injections are administered to patients annually, and that is why the second phase of the program (2010-2015) under the theme of “Injection Safety” would focus on the safe use of injections to prevent hepatitis in the country. Prof Aftab Mohsin pointed out that it was a matter of great concern that almost 10 per cent of the total population (180 million) of Pakistan, including up to seven per cent incidence of hepatitis C and three per cent incidence of hepatitis B patients, was suffering from chronic liver disease, which is termed as the leading cause of hospital admission and death on the medical floor of all tertiary care hospitals in the country.

He informed that unsafe, improper and unnecessary injections usage and use of contaminated instruments by health care workers, qualified or quacks, is the leading cause of HCV transmission. He also emphasized the need to strengthen Central Sterilization and Distribution Departments (CSSDs) in hospitals to ensure proper sterilization of surgical instruments to prevent the spread of hepatitis C among patients. He showed video footage of a single syringe being used on four different patients, saying that used syringes caused hepatitis C in 80 per cent of such patients and hepatitis B in 60 per cent of patients.

On an average, each individual receives 10 to 12 injections in a year and 9 out of these 10 injections are unnecessary. Prof Aftab Mohsin said that the federal

government had allocated an amount of Rs 13.9 billion for implementation of the second phase of five-year program for prevention and control of hepatitis. He said that under the programme, measures for prevention of hepatitis drew major attention in the implementation of the second phase of the programme in the next five years. In the first phase of the programme (2005-2010), the main focus was on the treatment of the hepatitis B & C, which failed to achieve the desired objective to reduce the incidence of hepatitis by half in the country. He said that prevention was going to include vaccination for HBV of school going children as well as women of childbearing age. The programme plans to mobilise the support for legislative change for making use of auto disable syringes mandatory. “The poor and deserving patients will get diagnostic, treatment and counseling services free of charge,” he added. Parliamentary Secretary Health, Punjab, Dr Saeed Elahi, said that the Punjab government had given top priority to education and health sectors, which was evident from the fact that Chief Minister Shahbaz Sharif had enhanced the health sector’s annual budget from Rs9 billion to Rs48 billion. He said that the government had acquired 12 mobile hospitals for provision of health services in Southern Punjab. He remarked that all kinds of health facilities are being provided to the patients at THQ and DHQ hospitals at tehsil and district level in the province. “Focal persons have been appointed at district level to ensure provision of healthcare services to patients,” he added. Prof Dr Saeed Khokhar said that hepatitis B & C were regarded as silent killers because, once contracted, the disease could remain dormant for up to 20 years, adding that there were no apparent signs of the disease if even a 7th part of the patient’s liver was functioning.

He said that hepatitis spreads through unsafe transfusion of blood, ear/nose piercing, dental treatment from roadside quacks, use of unnecessary injections, intravenous instruments and drips by the general practitioners, who usually don’t have any mechanism for sterilization of instruments. He also alleged that general practitioners also bought used drips, intravenous instruments and syringes, after recycling in the market. He said that standard practices are not being adopted in blood transfusion, especially in the private sector, and the health department’s instructions are being violated.

Lastly Prof Dr Saleem Akhtar urged the government to make legislation to prevent usage of used syringes, because presently no law prohibits use of used syringes in the country. "There is a major role of physician and hospital in the spread of hepatitis," he said, adding that the patients should always insist on quality syringes. Prof Dr Muhammad Amjad also said that presently there was no law to award punishment to a doctor or quack for applying used syringes on patients.

Prof Dr Riaz Tasneem said that hepatitis had risen alarmingly in the last 20 years and added that usage of used syringes was more prevalent in rural areas of the country.

Prof Dr Yaqoob Qazi said that the health and education sectors were most affected in Pakistan because only 0.8 per cent of the GDP was being spent on health, while India and Bangladesh were spending 4 to 5 per cent of the GDP on health sector. In Pakistan, he said that 90 per cent of the budget was spent on treatment and remaining 10 per cent was spent on prevention in the country. "Only Rs 2 million is spent on research," he added. Lt Gen (retd) Amjad Shoaib stressed on the need to adopt preventive measures to avoid the diseases, while adding that early diagnosis and treatment of hepatitis B & C were crucial. Besides, a patient having had a liver transplant also spoke on the occasion.