A Study on the Biochemical Profiling among Patients of Hepatomegaly

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ABSTRACT

Introdcution: The liver holds a position of singular importance in the system, performing numerous metabolic functions. Study aimed at biochemical profiling of liver among patients of hepatomegaly.

Material and methods: This was a cross-sectional study. A total of 64 patients of hepatomegaly aged 16 to 65 years were included in the study. Each patient was seen by at least two clinicians on the same day and proforma was completed. After the clinical investigations, they were subjected to biochemical investigations.

Results: Anemia was observed among 35.9% patients and Leucocytosis among 20.3% patients. The percentage of Normocytic/normochromic and Microcytic/hypochromic was in 37.5% and 12.5% patients respectively. Urine-bile salts & pigment was in 56.3% patients. Serum bilirubin <1.5 was among more than one third of patients (40.6%) followed by 1.5-10 & 10-20 (28.1%) and >20 (3.1%). Conjugated bilirubin <1.5 was also among more than one third of patients (45.3%) followed by 1.5-10 (39.1%) and 10-20 (15.6%). Unconjugated bilirubin <1.5 was among more than half of patients (54.7%) followed by 1.5-10 (40.6%) and 10-20 (4.7%).SGOT <40 and SGPT<40 was among 37.5% and 62.5% patients respectively. Alkaline phosphatase was among more than half of patients (60.9%).

Conclusion: This study found that anemia, normocytic/normochromic and microcytic/hypochromic was among about one third of patients. Further studies with larger sample size and including more number of biochemical parameters are required.

Keywords: Hepatomegaly, Biochemical Parameters, Unconjugated Bilirubin

INTRODUCTION

Hepatomegaly, a very obvious clinical marker of underlying liver pathology, was derived from Greek word hepar (liver)+ megas (large). It is abnormal enlargement of the liver that is usually a sign of disease, often discovered by percussion and palpation as part of a physical examination. Causes of liver enlargement are many. Liver size is determined by several factors, including volume of portal blood flow, amount of hepatic venous pressure and resistance, presence of infiltrative processes (e.g., inflammatory, metabolic, neoplastic, and cystic processes), and patency of bile flow. Hepatomegaly may be a presenting sign or symptom of the patient's illness or it may be an incidental finding in patients being examined for various other reasons.

Hepatomegaly is the condition of having an enlarged liver. It is a non-specific medical sign having many causes, which can broadly be broken down into infection, hepatic tumours, or metabolic disorder. Often, hepatomegaly will present as an abdominal mass. Depending on the cause, it may sometimes present along with jaundice.

Hepatomegaly occurs in liver diseases per se, systemic infections, systemic venous congestion, infiltrative diseases such as lymphoma, amyloidosis, storage diseases and in immune mediated diseases as part of reticuloendothelial hyperplasia. Nonalcoholic fatty liver disease (NAFLD) in recent years has shown tendency to shift up in the list of causes of hepatomegaly. According to the available studies fatty liver affect 20-25% of Indian population[1,2].

NAFLD being asymptomatic in most of the patients encompasses a histological spectrum ranging from steatosis to steatohepatitis, advanced fibrosis and cirrhosis in absence of consumption of significant alcohol. NAFLD is the most common cause of liver disease in the western world[3].

The present study was conducted to study the biochemical profiling among patients of hepatomegaly.

MATERIAL AND METHODS

This was a cross-sectional study. A total of 64 patients of hepatomegaly aged 16 to 65 years were included in the study. Each patient was seen by at least two clinicians on the same day and proforma was completed. After the clinical investigations, they were subjected to biochemical investigations.

RESULTS

Anemia was observed among 35.9% patients and Leucocytosis among 20.3% patients. The percentage of Normocytic/normochromic and Microcytic/hypochromic was in 37.5% and 12.5% patients respectively. Urine-bile salts & pigment was in 56.3% patients (Table-1).

Serum bilirubin <1.5 was among more than one third of patients (40.6%) followed by 1.5-10 & 10-20 (28.1%) and >20 (3.1%). Conjugated bilirubin <1.5 was also among more than one third of patients (45.3%) followed by 1.5-10 (39.1%) and 10-20 (15.6%). Unconjugated bilirubin <1.5 was among more than half of patients (54.7%) followed by 1.5-10 (40.6%) and 10-20 (4.7%) (Table-2).

SGOT <40 and SGPT<40 was among 37.5% and 62.5% patients respectively. Alkaline phosphatase was among more

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than half of patients (60.9%) (Table-3).

DISCUSSION

Hepatomegaly is usually observed in enteric fever after the first week of illness, most often persists throughout the period of marked elevation of temperature, becomes less evident as defervescence progresses and usually lasts for 3-4 weeks. Incidence of hepatomegaly is believed to be 2-3 times more common in typhoid fever than para typhoid fever and has been reported between 23-90% in children with typhoid fever. A higher incidence of hepatomegaly has been reported in children suffering from multidrug resistant typhoid fever[4,5].

In this study, SGOT <40 and SGPT<40 was among 37.5% and 62.5% patients respectively. In the study by Jain et al[6], alkaline phosphatase was among more than half of patients (60.9%) Elevated ALP, low albumin, increased PT INR points to the diagnosis of liver abscess. Jain et al[7] found that S.G.O.T was raised in 27[50%] cases and S.G.P.T was raised in 25[46%] cases out of total 54 cases. In the study by Jagadish et al[8] raised levels of SGOT was in 61.3% and SGPT was in 48.4%.

This study found that serum bilirubin <1.5 was among more than one third of patients (40.6%) followed by 1.5-10 & 10-20 (28.1%) and >20 (3.1%). Conjugated bilirubin <1.5 was also among more than one third of patients (45.3%) followed by 1.5-10 (39.1%) and 10-20 (15.6%). Unconjugated bilirubin <1.5 was among more than half of patients (54.7%) followed by 1.5-10 (40.6%) and 10-20 (4.7%). In the study by Chauhan et al[9], the mean total bilirubin was 7.9 mg%. Mean Hemoglobin in patients with cirrhosis was 9.7gm/dL. Jain et al[7] showed that Serum bilirubin was raised in only 2 cases out of 54 cases. Desai et al[10] reported that total serum bilirubin (mg/dl) was raised in all cases and SGPT was raised in 98.5% patients

In the present study, anemia was observed among 35.9% patients and Leucocytosis among 20.3% patients. The percentage of Normocytic/normochromic and Microcytic/hypochromic was in 37.5% and 12.5% patients respectively. Urine-bile salts & pigment was in 56.3% patients. In the study by, Desai et al[10], anemia was seen in 27 (38.6%) patients and mean hemoglobin was 10.99 gm%. TLC was raised in all cases except two (18.1%) cases of acute hepatitis B.

Jaundice associated with typhoid fever tends to occur at the peak of fever which differentiates it from viral hepatitis in which case fever usually comes down after the appearance of jaundice. Jaundice in most of these cases is due to typhoid hepatitis[11].

CONCLUSION

This study found that anemia, normocytic/normochromic

Investigations	No. (n=64)	%
Anemia	23	35.9
Leucopenia	5	7.8
Leucocytosis	13	20.3
Corrected ESR in 1st hour	51	79.7
1st hour platelets	1	1.6
GBP	32	50.0
Normocytic/normochromic	24	37.5
Microcytic/hypochromic	8	12.5
Urine-bile salts & pigment	36	56.3
Urobilinogen	24	37.5
Stool-ova-ascaris	24	37.5
Ova ankylosto ma	14	21.9
Cyst of Entamoeba histolytica	25	39.1
Trophozoites of Entphozoites of Entamoeba histolytica	6	9.4

Table-1: Findings of routine biochemical investigations in patients of hepatomegaly

	Mean±SD	No. (n=64)	%
Serum bilirubin	6.9±7.18		
<1.5		26	40.6
1.5-10		18	28.1
10-20		18	28.1
>20		2	3.1
Conjugated bilirubin	4.11±4.41		
<1.5		29	45.3
1.5-10		25	39.1
10-20		10	15.6
Unconjugated bilirubin	2.79±3.74		
<1.5		35	54.7
1.5-10		26	40.6
10-20		3	4.7

Table-2: Distribution of total serum bilirubin, conjugated bilirubin and unconjugated bilirubin in patients of hepatomegaly

	Mean±SD	No. (n=64)	%
SGOT (IU/L)	101.3±102.2		
<40		24	37.5
≥40		40	62.5
SGPT (IU/L)	122.22±116.35		
<40		25	39.1
≥40		39	60.9
Alkaline phosphatase KA units	18.07±15.10		
<15		39	60.9
≥15		25	39.1

Table-3: Distribution of serum enzyme levels in patients of hepatomegaly

and microcytic/hypochromic was among about one third of patients. Further studies with larger sample size and including more number of biochemical parameters are required.

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