

Hypersplenism in Chronic Liver Disease

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ABSTRACT

Background: Chronic liver disease (CLD) is a serious and irreversible disease. It is end result of hepatocellular injury and lead to various complications like hypersplenism.

Aim: To determine the frequency of Hypersplenism in CLD.

Methods: This was a Cross sectional study that was conducted at Department of Medicine, Services Hospital, Lahore April 2016 to November 2016 in which 100 cases of CLD with age range of 30-60 years were selected. These cases were then assessed for serum albumin, bilirubin, INR, abdominal examination for ascites and clinical assessment to look for hepatic encephalopathy to label the child pugh classification in cases with chronic liver disease. These cases then underwent bone marrow examination and those with normal to hyper cellular marrow were labeled as Hypersplenism.

Results: Out of total 100 patients in present study, there were 64 males and 36 females with mean age of 51.17±5.45 years. Hypersplenism was seen in 60 cases (60%). Hypersplenism was seen in 44 males (68.75%) and 16 females (44.44%) out of their respective groups with p=0.72. Hypersplenism was higher in child pugh class C as compared to B where it was seen in 29(72.5%) out of 40 cases as compared to 31(51.67%) out of 60 cases with p= 0.14.

Conclusion: Hypersplenism is common in chronic liver disease and is more common in male gender and those with child pugh class C.

Keywords: CLD, Child pugh class, hypersplenism

INTRODUCTION

Chronic liver disease (CLD) is chronic inflammatory disease that can result into a diffuse fibrosis that leads to liver architectural distortion into structurally abnormal nodules. The progression of liver injury to cirrhosis may occur over weeks to years¹. Many forms of liver injury are marked by fibrosis, which is defined as an excess deposition of the components of the extracellular matrix (i.e., collagens, glycoproteins, proteoglycans) within the liver. This response to liver injury is potentially reversible. In contrast, in most patients, cirrhosis is not a reversible process². The most common causes of liver disease are viral infections like hepatitis B, C and alcoholism. But the list of causative etiologies is long³.

CLD result in significant morbidity and mortality, mainly due to complications i.e., hepatic encephalopathy, spontaneous bacterial peritonitis (SBP), hepatorenal syndrome (HRS), ascities, hypersplenism and esophageal variceal hemorrhage (EVH)⁴. Pancytopenia is frequency observed in cases of chronic liver disease, and result in various clinical outcomes that can add to overall morbidity and mortality and for which various pathophysiologies are observed and hypersplenism is one of them. Hypersplenism leads to a decrease in platelet counts

and even is a treatable cause of pancytopenia. The objective of the study was to see the frequency of Hypersplenism in chronic liver disease patients. Since hypersplenism is treatable cause of pancytopenia in chronic liver disease, timely intervention can reduce patient morbidity and mortality to great extent^{5,6}.

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MATERIAL & METHODS

This cross sectional study in the Department of Medicine, Services Hospital, Lahore from April 2016 to November 2016. Sampling technique used was non probability consecutive sampling

Inclusion criteria:

1. All patients of chronic liver disease of any Child Pugh class of more than 1year duration.
2. Patients 30-60 years of age of both genders

Exclusion criteria:

1. Known cases of chronic renal failure
2. Cases that are taking anti platelet therapy within at least 1 week.

After taking an informed written consent, the detailed relevant history from each patient, was collected. These cases were then assessed for serum albumin, bilirubin, INR, abdominal examination for ascites and clinical assessment to look for hepatic encephalopathy to label the child pugh classification in cases with chronic liver disease. These cases then underwent bone marrow examination and those with normal to hyper cellular marrow were labeled as

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Hypersplenism. Statistical analysis was done by using SPSS version 22.0. Quantitative variables were presented as mean and standard deviation. Frequency and percentage were calculated for qualitative data. The data was stratified by using chi square test and p value < 0.05 was considered as significant.

RESULTS

Out of total 100 patients in present study, there were 64 males and 36 females with mean age of 51.17±5.45 years. There were 60 cases in Child Pugh class B and 40 in Class C. Hypersplenism was seen in 60 cases (60%). Hypersplenism was seen in 44 males (68.75%) and 16 females (44.44%) out of their respective groups (table 1). This difference was not significant with p value of 0.72. There was no significant difference in terms of different age group with p= 0.96 as in table 2. Hypersplenism was higher in child pugh class C as compared to B where it was seen in 29(72.5%) out of 40 cases as compared to 31(51.67%) out of 60 cases with p=0.14 as in table 3.

Table 1: Hypersplenism with respect to gender (n=100)

Gender	Hypersplenism		Total
	Yes	No	
Male	44(68.75%)	26 (31.25%)	64(100%)
Female	16(44.44%)	14 (55.56%)	36(100%)

p=0.72

Table 2: Hypersplenism with respect to age groups (n=100)

Age groups (yrs)	Hypersplenism		Total
	Yes	No	
30 to 45	21 (61.76%)	13(38.24%)	34(100%)
46 to 60	39 (59.09%)	27(40.91%)	66(100%)

p=0.96

Table 3: Hypersplenism with respect to child pugh class

Child pugh class	Hypersplenism		Total
	Yes	No	
Class B	31(51.67%)	29 (48.33%)	60(100%)
Class C	29 (72.50%)	11 (27.50%)	40(100%)

p=0.14

DISCUSSION

Chronic liver disease is a sort of irreversible liver damage. It is the end product of hepato-cellular injury. The liver has significant properties to regenerate and cope the toxic injuries. However, the spleen enlargement is also a part of the long-term consequences of the liver disease and leads to decrease in platelet count and even can result in pancytopenia and is labeled as Hypersplenism.

Hypersplenism was seen in 60 cases (60%). This was similar to studied done in the past that had similar types of prevalence in their studies. According to a study done by Suthat et al the Hypersplenism was seen in 64% of cases⁷.

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and 16 females (44.44%) out of their respective groups (table 1). This difference was not significant with p value of 0.72. This was also seen by the study done in the past that showed male predominance. In a study done by Ashraf S et al they found this hypersplenism in 72% of males and 28% females with a ration of 2.6:1.⁸ While in another study by Guralnik V et al they found this in a ration of 1.7:1.⁹ The reason of more frequencies in males can be due to cultural issues as well where male present with higher number. Moreover, the females have also another causes of pancytopenia as well among which megaloblastic anemia was the commonest.

Hypersplenism was higher in child pugh class C as compared to B where it was seen in 29(72.5%) out of 40 cases as compared to 31(51.67%) out of 60 cases with p=0.14. This was also seen by the studies done in the past^{10,11}. The reason of higher number in severe form of the disease can be explained by the severity of the disease as the disease is more severe, higher are the chances to develop this complication.

CONCLUSION

Hypersplenism is common in chronic liver disease and is more common in male gender and those with child pugh class C.

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