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FREQUENCY OF HYPERSPLENISM IN CASES OF LIVER CIRRHOSIS

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Abstract:
Objective: *To determine the frequency of Hypersplenism in cases of liver cirrhosis.*
Methodology: *This cross sectional study was conducted at Sheikh Zayed Hospital, Lahore during January to August 2017. The cases with liver cirrhosis were labelled according to clinical symptoms, deranged liver function tests and on Ultrasonography abdomen. The cases were included of both genders with age 20 years or more with child pugh class B and C. The cases with any hematological malignancy or end stage renal of cardiac failure were excluded. Hypersplenism was labelled on bone marrow examination with normal to hyper cellular marrow.*
Results: *In the present study there were total 130 cases of liver cirrhosis. Out of these 84 (64.61%) were males and 46 (35.39%) females. The mean age was 53.45±8.23 years. Hypersplenism was observed in 65 (50%) of the cases. Hypersplenism was significantly high in male group seen in 51 (60.71%) cases with p= 0.01. There was near significant difference in terms of age groups where it was seen in 48 (56.47%) cases with age more than 50 years with p= 0.06. Hypersplenism was significantly high in cases with child pugh class C affecting 55 (56.70%) cases with p value of 0.02.*
Conclusion: *Hypersplenism is not uncommon in liver cirrhosis and is seen significantly high in cases with child pugh class C and male gender.*
Key Words: *Liver cirrhosis, Hypersplenism.*

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INTRODUCTION:

Liver cirrhosis is an end stage of chronic liver disease that is defined as chronic inflammation and fibrosis of the liver parenchyma. It is caused by many diseases and infections and out of these hepatitis B and C infections are most common in developing countries while alcoholism and hepatitis C infections are most prevalent in developed world. The other common causes are glycogen and mineral storage disease etc [1-2]. The underlying pathophysiology of this is ongoing chronic inflammation and architectural distortion leading to fibrosis of liver; that only results in functionality of the liver functions but also lead to mechanical effects leading to a spectrum of symptoms and complications [2-3]. Liver cirrhosis can results in various complications like upper gastrointestinal (GI) bleeding with or without variceal hemorrhage, portal hypertension, spider nevi, ascites, hepatorenal syndrome, Hypersplenism etc. These all can add to increase the morbidity and mortality rates in such cases.4 Pancytopenia is one of the common complications seen in such cases and there is complex underlying pathophysiology which is not fully known and hypersplenism is the one point of concern; as it is a reversible and controllable complication to avoid further morbidity [5-6].

OBJECTIVE:

To determine the frequency of Hypersplenism in cases of liver cirrhosis.

MATERIAL & METHODS:

Study design: Cross sectional study
Study Setting: Medicine department, Sheikh Zayed Hospital, Lahore
Duration: January 2017 to August 2017
Sampling technique: Non probability consecutive sampling

The cases with liver cirrhosis defined by the clinical features of ascites, hepatic encephalopathy, spider nevi, deranged liver function tests in the form of deranged bilirubin, serum albumin and SGPT and SGOT with changes on Ultrasonography abdomen in the form of hepatic parenchymal changes with shrunken liver size with or without dilated portal vein were included. The cases were included of both genders with age 20 years or more with child pugh class B and C. The cases with any hematological malignancy or end stage renal of cardiac failure were excluded. Hypersplenism was labelled on bone marrow examination with normal to hyper cellular marrow.

Statistical analysis;
Statistical analysis was done by using SPSS version 23.0. The data was stratified against confounding variables by using chi square test and p value < 0.05 was considered as significant.

RESULTS:

In the present study there were total 130 cases of liver cirrhosis. Out of these 84 (64.61%) were males and 46 (35.39%) females. The mean age was 53.45±8.23 years. Hypersplenism was observed in 65 (50%) of the cases. Hypersplenism was significantly high in male group seen in 51 (60.71%) cases with p= 0.01 (table 1). There was near significant difference in terms of age groups where it was seen in 48 (56.47%) cases with age more than 50 years with p= 0.06 as shown in table 2. Hypersplenism was significantly high in cases with child pugh class C affecting 55 (56.70%) cases with p value of 0.02 as in table 03.

Table no. 1 Hypersplenism vs gender

Gender	Hypersplenism		Total	p value
	Yes	No		
Male	51 (60.71%)	33 (39.29%)	84 (100%)	
Females	14 (30.43%)	32 (69.57%)	46 (100%)	0.01
Total	**65 (50%)**	**65 (50%)**	**130 (100%)**	

Table No. 2. Hypersplenism vs age

Age groups (years)	Hypersplenism		Total	p value
	Yes	No		
30 to 50	17 (37.38%)	28 (62.62%)	45 (100%)	0.06
> 50	48 (56.47%)	37 (43.53%)	85 (100%)	
Total	**65 (50%)**	**65 (50%)**	**130 (100%)**	

Table No 3. Hypersplenism vs child pugh class

Child pugh class	Hypersplenism		Total	p value
	Yes	No		
Class B	10 (30.30%)	23 (69.70%)	33 (100%)	
Class C	55 (56.70%)	42 (43.30%)	97 (100%)	0.02
Total	**65 (50%)**	**65 (50%)**	**130 (100%)**	

DISCUSSION:

Liver cirrhosis is a highly morbid disease and its impact leading to increased mortality rate is significant. It can lead to various physiological as well as hematological complications; hypersplenism is one of the salient ones and is an underrated treatable complication.

In the present study hypersplenism was seen in 65 (50%) of the cases. These results were near to the results of the previous studies where they found it in more than 50% of the cases. According to a study conducted by Suthat et al, in their study 64% of the cases developed it. While in another study this was seen in 53% of the cases which was closer to our study. The reason of this slight difference can be attributed to difference in the including subjects where the majority of our cases were in Child pugh class B.7-8

In the present study hypersplenism was more in males as compared to females affecting 51 (60.71%) cases with a p value=0.01. Hypersplenism was also more seen in males in previous studies. According to a study by Ashra et al this was seen in 78% males in contrast to 28% females with a ratio of 2.6 to 1.8 GuralnikV et al in another study also found male predominance and it was seen as 1.7 ratio to 1.9 The reason for male predominance for this is not clear.

There was significant difference in cases across child pugh class where it was significantly high in cases falling in child pugh class C affecting 55 (56.70%) cases with p value of 0.02. This finding was supported by the previous studies as well where it was revealed that the hypersplenism was significantly high in cases with child pugh class C as compared to milder disease with p values of less than 0.05.10-11

CONCLUSION:

Hypersplenism is not uncommon in liver cirrhosis and is seen significantly high in cases with child pugh class C and male gender.

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