World Journal of Pharmaceutical and Life Sciences
WJPLS
www.wjpls.org
SJIF Impact Factor: 5.088

HYPERSPLENISM AND LIVER CIRRHOSIS

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Article Received on 12/08/2018 **Article Revised on 03/09/2018** **Article Accepted on 24/09/2018**

ABSTRACT

Objective: To determine the frequency of cases with hypersplenism presenting with liver cirrhosis. **Methodology:** This was a cross sectional study conducted at Sheikh Zayed Hospital, Rahim Yar Khan. In this study the diagnosed cases of liver cirrhosis of at least one year or more were included. The cases of age more than 20 years irrespective of gender were selected. Liver cirrhosis was labelled where the liver was shrunken and portal vein was more than 1 cm with or without signs and symptoms of cirrhosis. Detailed clinical and laboratory investigation s were conducted to label the Child Pugh Class. The cases with bleeding disorders and haematological malignancies were excluded. The diagnosis of hypersplenism was made on bone marrow analysis showing normal or hyper cellular marrow. **Results:** In this study there were total 100 cases out of which 57 (57%) were males and 43 (43%) females. The mean age was 53.45±8.11 years. Majority of the cases were seen in Child class B affecting 52 (52% of the cases. Hypersplenism was observed in 43 (43%) of the cases. Hypersplenism was seen more in cases with liver cirrhosis more than 2 years where it was observed in 37 (58.73%) out of 63 cases with p= 0.02. It was also seen more in cases with child pugh class C where it was noted in 34 (70.83%) out of 48 cases with p value of 0.001. **Conclusion:** Hypersplenism is seen in almost half of the cases with cirrhosis and is more in cases with Child class C and duration of cirrhosis > 2 years.

KEYWORDS: Cirrhosis, Hypersplenism.

INTRODUCTION

Liver disorders are one of the main concerns in the developing as well as developed world. The number of these disorders is increasing day be day due to emergence of Hepatitis B and C viruses in the under developed world and alcoholism and hepatitis C virus in the developed one.

Death due to liver cirrhosis in amongst the top ten causes and also pose a great cost burden.[1]

Chronic liver inflammation lead to invasion of the inflammatory cells that lead to ultimate fibrosis of the liver which can results in wide array of structural and functional complications. These include hepatic encephalopathy, upper GI bleed, varices formation, anemia, ascites, porto pulmonary hypertension, hepatorenal syndrome and hypersplenism etc.[2-3]

Hypersplenism is not uncommon in cases with liver cirrhosis and can add to over all morbidity when synthetic functions like coagulation factors is also impaired. Pancytopenia is encountered in cases of cirrhosis and the pathophysiology underlying this is complex and multifactorial. The other clinical features along with pancytopenia in hypersplenism include its enlarged size and increased bleeding tendency. There is increased $CD4^+$:$CD8^+$ ratio of lymphocytes in cases of cirrhosis as compared to control. Splenectomy may be needed if does not respond to medical therapy and can reduce the bleeding risk.[5-6]

OBJECTIVE

To determine the frequency of cases with hypersplenism presenting with liver cirrhosis.

MATERIAL AND METHODS

Study design
Cross sectional.

Study Setting
Medical Unit II, Sheikh Zayed Hospital, Rahim Yar Khan.

Duration
August 2017 to March 2018.

Sampling technique
Non probability consecutive sampling.

In this study the diagnosed cases of liver cirrhosis of at least one year or more were included. The cases of age more than 20 years irrespective of gender were selected. Liver cirrhosis was labelled where the liver was shrunken and portal vein was more than 1 cm with or without signs and symptoms of cirrhosis. Detailed clinical and laboratory investigation s were conducted to label the Child Pugh Class. The cases with bleeding disorders and haematological malignancies were excluded. The diagnosis of hypersplenism was made on bone marrow analysis showing normal or hyper cellular marrow.

Statistical analysis

The data entered and analyzed by using SPSS version 21.0. Post stratification chi square test was applied taking p value < 0.05 as significant.

RESULTS

In this study there were total 100 cases out of which 57 (57%) were males and 43 (43%) females. The mean age was 53.45±8.11 years. Majority of the cases were seen in Child class B affecting 52 (52% of the cases. Hypersplenism was observed in 43 (43%) of the cases. Hypersplenism was seen more in cases with liver cirrhosis more than 2 years where it was observed in 37 (58.73%) out of 63 cases as compared to 6 (16.21%) out of 37 cases with cirrhosis less than 2 years with p= 0.02 as in table I. It was also seen more in cases with child pugh class C where it was noted in 34 (70.83%) out of 48 cases with p value of 0.001 (table II).

Table I: Hypersplenism vs duration of cirrhosis.

Duration of liver cirrhosis	Hypersplenism		Total	p value
	Yes	No		
< 2 years	6 (16.21%)	31 (83.79%)	37 (100%)	0.02
> 2 years	37 (58.73%)	26 (41.27%)	63 (100%)	
Total	**43 (43%)**	**57 (57%)**	**100 (100%)**	

Table II: Hypersplenism vs Child pugh class.

Child pugh classes	Hypersplenism		Total	p value
	Yes	No		
C	34 (70.83%)	14 (29.17%)	48 (100%)	
B	11 (21.15%)	41 (78.85%)	52 (100%)	0.001
Total	**43 (43%)**	**57 (57%)**	**100 (100%)**	

DISCUSSION

Infectious diseases are one of the great concerns in the under developed counties like Pakistan and hepatitis B and C virus infection is on the rise day by day and due to lack of medical facilities i.e. diagnostic as well as management can lead to an ongoing inflammation of the liver and can cause an irreversible damage of the liver called as liver which can end up in wide range of complications and hypersplenism is one of the commonly encountered yet under rated complication.

Hypersplenism was observed in 43 (43%) of the cases presenting with liver cirrhosis. This finding was in line with the results of the studies done in the past where it was also noted to be a well reported complications. The data has revealed the overall prevalence of this is seen in cases around 7% to 63% of the cases and majority of the studies found it in around 50% of the cases.

According to a study done by Suthat et al, they found hypersplenism in 64% of the cases and majority if them were found in cases with advanced liver cirrhosis. Relatively lesser frequency was seen in another study whose results were closer to the findings of the present study where this was observed in 53% of the cases with cirrhosis.[7-8]

Hypersplenism was seen more in cases with liver cirrhosis more than 2 years where it was observed in 37 (58.73%) out of 63 cases as compared to 6 (16.21%) out of 37 cases with cirrhosis less than 2 years with p= 0.02 and it was also seen more in cases with child pugh class C where it was noted in 34 (70.83%) out of 48 cases with p value of 0.001. The data in the past has also strengthened the findings of this study and revealed the same fact that these two confounders showed significant differences. According to similar studies done by Ashra and Guralnik et al, it was denoted that the child pugh class C is significantly associated with hypersplenism.[8,9] The other studies; though they did not defined the cut off values as were used in the present study, yet revealed that the cases wit longer duration of cirrhosis were more likely to develop the hypersplenism.[10-11] This can be explained by the basic pathophysiology that higher the degree of cirrhosis i.e. class C and longer the duration of disease, higher were the chances to develop this complication.

CONCLUSION

Hypersplenism is seen in almost half of the cases with cirrhosis and is more in cases with Child class C and duration of cirrhosis > 2 years.

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