Original Article

Prevalence of Hepatitis in Neonates and Children in Karachi

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ABSTRACT

Inflammation of liver is known as "hepatitis" is commonly found in infant as neonatal hepatitis and in children as acute and chronic hepatitis. Neonatal hepatitis is a general term for inflammation of the liver that occurs shortly after birth in newborns (less than 3 months of age) for which a specific cause cannot be identified.

Objectives: To provide an overview of current childhood statistics of hepatitis and jaundice to facilitate analysis of the impact of past research discoveries on outcome and provide essential information for prioritizing future research directions.

Study Design: Experimental Study.

Place and Duration of Study: This study was conducted at the Department of Histopathology, BMSI, JPMC, Karachi from May 2004 to March 2005.

Materials and Methods: Slides / paraffin blocks of liver biopsies from patients under 15 years of age. The cases were of two categories i.e. retrospective and prospective. The distribution of 480 cases of hepatitis was according to Age and Sex. Total 200 (41.7%) cases were encountered in the youngest of 0-5 years age group, 180 (37.5%) cases in 6-10 years and only 100 (20.8%) cases in 11-15 age group.

Results: The distribution of 24 cases of hepatitis was according to Age and Sex. Total 200 (41.7%) cases were encountered in the youngest of 0-5 years age group, 180 (37.5%) cases in 6-10 and only 100 (20.8%) cases in 11-15 age group.

Conclusion: It is observed that the tendency of liver inflammation was decreased with increase in age and sexual differentiation showing male predominance with male to female ratio of 2:1. The inflammation of liver /hepatitis in young children, can be caused by infectious, metabolic, and genetic disorders. Physiological jaundice or neonatal hepatitis is mostly reported in male population than females, in children. In Karachi this is found that neonatal jaundice can be recovered with the growing age and it is found to be a common cause for enlargement of liver and associated liver diseases in infants and children that can lead to higher risks of acute or chronic liver diseases in adulthood.

Key Words: Neonatal hepatitis, chronic Hepatitis, acute hepatitis, inflammation of liver.

INTRODUCTION

Inflammation of the liver/hepatitis is very common in early infancy and childhood.[1,2] In neonatal hepatitis most of the infants are infected by viruses that cause the inflammation of liver before birth or shortly after birth[1]. The neonatal hepatitis is usually associated with jaundice, enlarged liver and spleen[14].If there are no viruses are detected in neonatal hepatitis, and a liver biopsy showed "giant cells", it is known as giant cell hepatitis [3, 4,5]. The symptoms are same in neonatal hepatitis, other type of hepatitis or in biliary atresia, in which the bile ducts are destroyed due to unknown cause. "Hepatitis" can cause liver cells` degeneration or necrosis[6] and the wide range of clinical manifestations are determined by the severity of the hepatocyte`s dysfunctions or by liver functions` tests. Neonatal hepatitis can have a number of causes including infections, metabolic, and genetic disorders. Hepatitis A, B, and C are less commonly occurs in neonates. Hepatitis B, in the neonates appear as chronic hepatitis, with the histological features of active hepatitis[7,8, 9].* Long term follow-up will be required to determine the final evolution of this lesion. The progression from neonatal hepatitis to cirrhosis and hepatocellular carcinoma in a young child was demonstrated by sequential biopsies in a research. In Pakistan, HBV infection rate is increasing day by day. The reason may be the Seventy percent of the all new born have transplacental IgG antibodies against hepatitis A[10,11,12,13] , only that last about 8 months of age. Due to lack of proper health facilities or poor economical status and less public awareness about the transmission of major communicable diseases like hepatitis B, hepatitis C and Human Immunodeficiency syndromes are increasing[2]. Chronic liver disease and jaundice occurring with in the first 24 hours of life may increase the evidence of an underlying pathology[14].

MATERIALS AND METHODS

Slides / paraffin blocks of liver biopsies from patients under 15 years of age. the cases were of two categories i.e. retrospective & prospective.

Retrospective:

1. Slides / paraffin blocks of liver biopsies received during last 10 years in the department of pathology,

Basic Medical Science Institute (BMSI), Jinnah Postgraduate Medical Center, Karachi.

2. Slides / paraffin blocks of liver biopsies received in department of pathology, national institute of child health (NICH) Karachi during last 7 years.

Prospective: Slides / paraffin blocks of liver biopsies received during last 10 years in the department of pathology, basic medical science institute (BMSI), Jinnah postgraduate medical center national institute of child health (NICH) Karachi. A clinical protocol including the particulars about the patients name, age, sex and diagnosis were obtained from the surgical pathology registers, request cards and copies of report.

RESULTS

The distribution of 24 cases of hepatitis was according to Age and Sex. Total 200 (41.7%) cases were encountered in the youngest of 0-5 years age group, 180 (37.5%) cases in 6-10 and only 100 (20.8%) cases in 11-15 age group.

Table No.1: Showing Age and Sex Differentiation in Young Population N-480

Age	Male	%	Female	%	Total	%
0-5	160	50.0	40	25	200	41.5
6-10	120	37.5	60	37.5	180	37.5
11-15	40	12.5	60	37.5	100	20.8
TOTAL	320	100	160	100	480	100

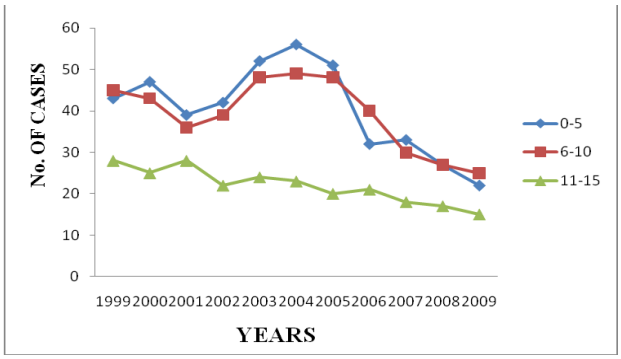

Figure No.1: Showing Year Wise Distribution of 480 Cases Reported for Physiological Jaundice and Hepatitis

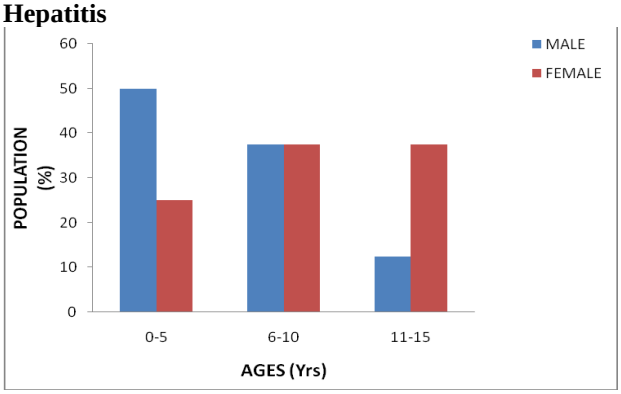

Figure No.2:Showing Age and Sex Differentiation in Young Population

It is observed that the tendency of liver inflammation was decreased with increase in age & sexual differentiation showing male predominance with male to female ratio of 2:1.

DISCUSSION

Hepatitis is associated with the necrosis of hepatocytes is a leading cause of chronic liver diseases[1,6]. In developing countries, hepatitis is common, nearly 100% of the population in some countries has serologic evidence of past hepatitis during childhood[4,7,8,9,10,13]. Hepatitis is considered as the second most important cause of cirrhosis[5], while the major cause of liver cirrhosis can be catarrhal jaundice. Viral hepatitis and especially the hepatitis B is a frequent cause of chronic hepatitis and fulminant hepatitis rarely[6]. Most of the cases of neonatal or chronic hepatitis are associated with [15,16], mild to moderate inflammatory infiltrate or cholestasis[1]. It is also known that neonatal hepatitis and liver fibrosis and can develop cirrohsis[1]. In the western population, prior to targeted vaccination programs, the highest rate of liver infection occurred in children aged 5-14 years[17, 18], in our results we found that there is decline in the symptoms after the age of 12 years. Moreover the classic symptoms of hepatitis are less likely in younger patients. Children less than 5 years of age are highly symptomatic and have jaundice as the major symptom [14] (Fig.2). Our results show a high male to female ratio i.e. 2:1 (Table 1). In Asia neonatal hepatitis and early childhood liver diseases cause liver dysfunction and other complications[19]. The ratio of various types of hepatitis appear to be higher in males than females[2, 20]. Urban communities are more involved than rural areas. Jaundice is occurred more in adults than children below 15 years of age, and the ratio is also increased in males than females[5].

CONCLUSION

The inflammation of liver in infants and young children is an indicator of hepatitis that can be caused by metabolic, infectious, and genetic disorders. It is mainly characterized by physiological jaundice in newborn and mostly reported in male population than females. In Karachi this is found that neonatal hepatitis can be recovered with the growing age and it is found to be a common cause for enlargement of liver and associated liver diseases in infants and children that can lead to higher risks of acute or chronic responses in adulthood.

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