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Children With Acute Viral Hepatitis: A One Year Study at Shaikh Zayed Hospital, Lahore

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ABSTRACT

Objectives: To study the clinical spectrum, outcome and etiological agents of acute viral hepatitis in admitted patients at Paediatric Department Shaikh Zayed hospital, Lahore. **Setting:** Paediatric Department Shaikh Zayed hospital, Lahore. **Duration:** One Year from November 2004-October 2005. **Study design:** Retrospective Descriptive study. **Inclusion criteria:** 1. Age between 1-15 years; 2. All patients admitted with acute viral hepatitis in the Paediatric department. **Exclusion criteria:** 1. Children with drug induced hepatitis; 2. Children with chronic liver disease; 3. Children with obstructive jaundice. **Results:** A total of 69 patients out of 2391 admitted patients were included during that period out of them 43(62%) were males and 26 (38%) were females. In our study jaundice was the presenting complaint in 52(75%) patients, followed by vomiting in 48(69%), fever in 42(60%), dark colour urine in 30 (43%), anorexia in 25 (36%), abdominal pain in 24 (35%), yellow colour stool in 7(10%) and irritability in 2 (3%) patients. 13 patients had a positive family history of hepatitis out of them 3(4.3%) had Hepatitis A virus (HAV), 7(10%) Hepatitis B virus (HBV), and 3 (4.3%)had Hepatitis C virus (HCV). History of blood transfusion was found in 7(10%) patients while it was negative in remaining 62(90%). Only 2(2.8%) patients were vaccinated against HAV and 9 (13%) against HBV. Icterus was present in 52(75%), 65(94%) had tenderness in the right hypochondrium, hepatomegaly in 57 (83%) and splenomegaly in 7% and one patient was drowsy at the time of admission. All the patients were screened against HAV, HBV, HCV, HDV and HEV in a serial wise approach. Out of them 50(72%) patients were HAV IgM positive, 4(5.7%) HbsAg positive, 2(2.8%) had anti-HCV, 2(2.8%) had HEV IgM and 1(1.4%) had HDV+HbsAg. In 10 (14%) patients no viral marker was detected out of these five viruses. Out of 69 patients 4(5.7%) developed hepatic encephalopathy. Out of these 2 pts. expired and 2 survived. A total of 67(97%) were discharged and 2 (3%) expired. **Conclusions:** Jaundice was the main presenting complaint followed by vomiting with significant recovery and Hepatitis A was the most common cause of acute viral hepatitis in children admitted in hospital.

INTRODUCTION

There are many causative factors, which can lead to hepatitis. In Pakistan viral causes are more common and it is endemic here, however its prevalence and pattern of involvement is quite different from developed countries[1].

The earliest description of an illness consistent with viral hepatitis dates back to the second century. During the centuries that followed, epidemics of jaundice were reported, and outbreaks plagued military campaigns, both ancient and modern. In the 1920s, a viral etiology was suggested for what was then known as infectious hepatitis In developing countries, infection is highly endemic; nearly 100% of the population has serologic evidence of past HAV disease during childhood In the vast majority of patients, HAV infection is self-limited, and complete recovery occurs. A chronic carrier state is not seen with HAV infection.

Hepatitis B is one of the major infectious diseases of mankind: of 360 million chronic carriers worldwide, 78% are in Asia, 16% in Africa, 3% in South America, and 3% in Europe, North America, and Oceania combined. HBV infection is the most common cause of chronic hepatitis, liver cirrhosis

and HCC worldwide[2]. Hepatitis B can cause acute and chronic liver disease. The clinical presentation ranges from sub clinical hepatitis to symptomatic hepatitis and in rare instances Fulminant hepatitis. Long-term complications of Hepatitis B include cirrhosis and hepatocellular carcinoma. Perinatal or childhood infection is associated with few or no symptoms, but it has a high risk of becoming chronic. Approximately 5% of the world's population has chronic HBV infection; it is the leading cause of chronic hepatitis, cirrhosis, and hepatocellular carcinoma worldwide. An estimated 500,000-1,000,000 persons die annually from HBV-related liver disease in United States. Countries are classified as those with low endemic rates (<2% of the general population has the antibody to the hepatitis B surface antigen [HBsAg]), intermediate endemic rates (2-8% positive for HBsAg), or high endemic rates (>8% positive for HBsAg). Fulminant hepatitis occurs in 1-2% of persons with acute disease and has a case/fatality ratio of 63-93%.

Although the worldwide prevalence of HCV varies considerably by geographic region, more than 3% of the global population is infected. In more than 20% of chronically infected adults, progression to cirrhosis occurs an average of 20 years after initial infection. Patients with this condition have a secondary risk of portal hypertension, liver failure, and other complications. In 1-5% of patients, most of whom have underlying cirrhosis, hepatocellular carcinoma (HCC) is diagnosed an average of 30 years after initial HCV infection

Different studies all over the world suggest different etiologies of hepatitis[3,4]. So this study was planned to find out the most common etiological agent along with the clinical spectrum and outcome of hepatitis in our set up.

PATIENTS & METHODS

Patients

Children between 1-15yrs of age from November 2004 to October 2005 admitted in pediatric department of Shaikh Zayed Hospital, Lahore with hepatitis.

Methods

A detailed history including symptoms of disease, family history of hepatitis, blood transfusion history, vaccination history and a detailed systemic examination was recorded on the study proforma.

All the patients were screened against HAV, HBV, HCV, HDV and HEV in a serial wise approach and their outcome was noted.

RESULTS

A total of 69 patients were studied during a period of one year having 43(62%) male and 26 (38%) females (Fig. 1). In our study jaundice was the presenting complaint in 52(75%) patients, followed by vomiting in 48(69%), fever in 42(60%), dark colour urine in 30(43%), anorexia in 25 (36%), abdominal pain in 24 (35%), yellow colour stool in 7(10%) and irritability in 2 (3%) patients (Fig. 2). Figure 3 shows the age distribution 13% patients were less than 2 years of age, 60% between 2-10 years and 26% of more than 10 years.

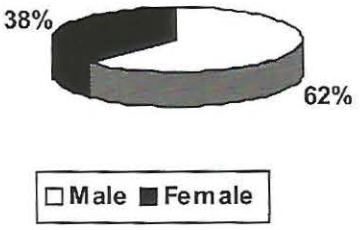

Fig. 1: Sex distribution.

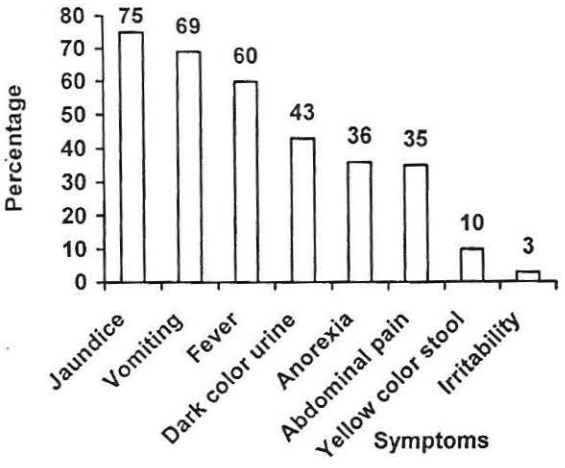

Fig. 2: Presenting complaints.

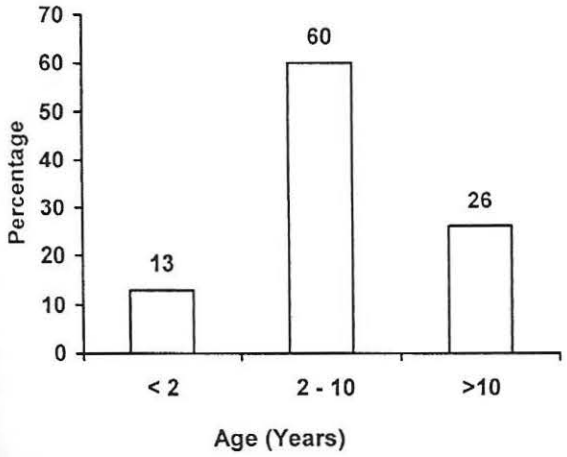

Fig. 3: Age Distribution.

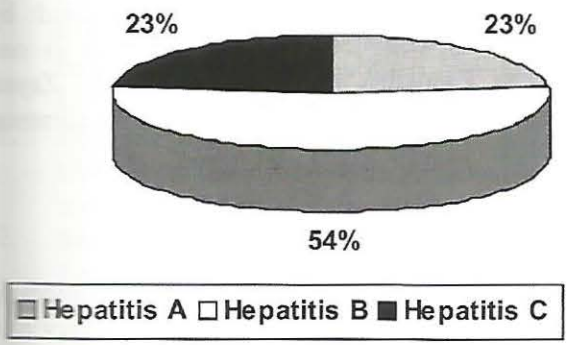

Fig. 4: Family history of hepatitis (n=13).

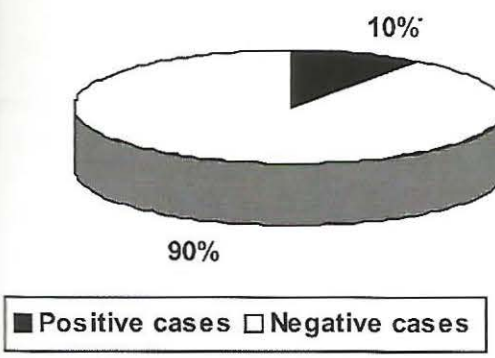

Fig. 5: History of blood transfusion.

13 patients had a positive family history of hepatitis out of them 3(4.3%) had Hepatitis A virus (HAV), 7(10%) Hepatitis B virus (HBV), and 3 (4.3%) had Hepatitis C virus (HCV). History of blood transfusion was found in 7 (10%) patients while it was negative in remaining 62 (90%) (Figs. 4 and 5).

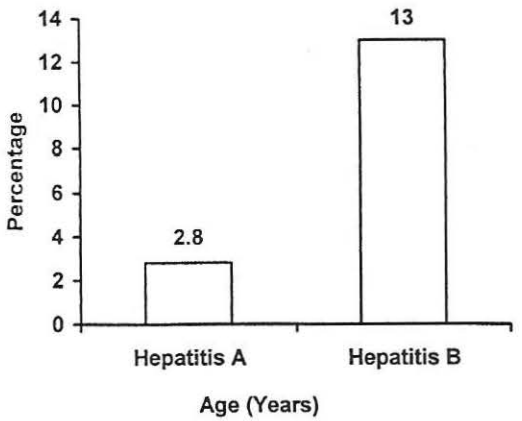

Fig. 6: Vaccination status of children.

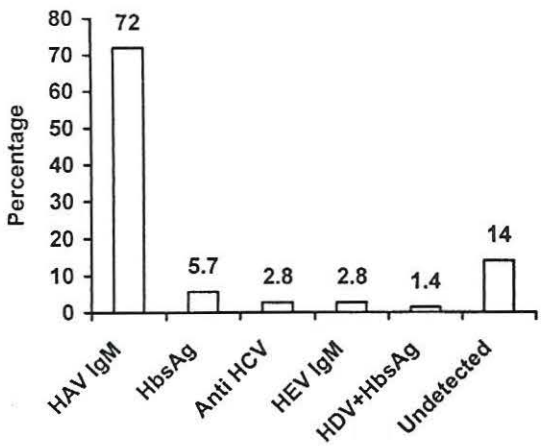

Fig. 7: Viral serology.

Only 2 (2.8%) patients were vaccinated against HAV and 9 (13%) against HBV (Fig. 6).

Jaundice was present in 52(75%), 65(94%) had tenderness in the right hypochondrium, hepatomegaly in 57(83%) and splenomegaly in 7% and one patient was drowsy at the time of admission.

Regarding viral serology 50 (72%) patients were HAV IgM positive, 4 (5.7%) HbsAg positive, 2 (2.8%) Anti HCV, 2 (2.8%) HEV IgM, 1 (1.4%) HDV + HbsAg positive respectively, and in 10 (14%) patients no virus was detected (Fig. 7).

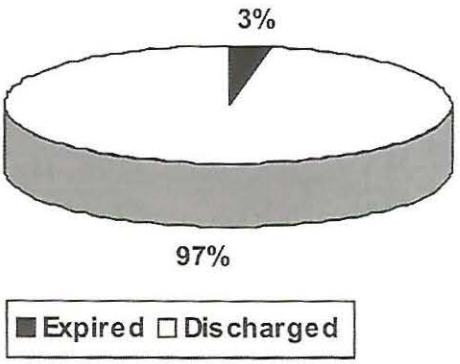

Fig. 8: Outcome.

A total of 67(97%) patients were discharged and 2 (3%) expired (Fig. 8).

DISCUSSION

Hepatitis is defined as inflammation and necrosis of liver. It may be acute or chronic. Acute hepatitis is because of acute inflammation and necrosis of liver.

Chronic hepatitis is continuing inflammation of liver for six months or more. There are various types of hepatitis including toxic, autoimmune, metabolic and infective. Toxic, autoimmune, metabolic causes lead to chronic hepatitis while the infective causes may or may not lead to chronic hepatitis. Infective causes include viral including hepatotropic viruses (HAV, HBV, HCV, HDV, HEV, HFV, HGV) causing disease primarily affecting the liver or with viruses (enterovirus, adenovirus, herpes virus) predominantly associated with extra hepatic manifestations. Non-viral causes of hepatitis (bacteria, protozoa, helminthes) are less common.

Viral hepatitis is a considerable cause of morbidity and mortality in humans ranging from acute infection to chronic sequele[5]. According to WHO there are 8 million patients of hepatitis in Pakistan and our country is considered to be endemic for viral hepatitis[1]. In one study HAV antibodies were found in around 90% of healthy population of Rawalpindi/Islamabad[6].

In our study jaundice was the main presenting complaint in 52(75%) followed by vomiting in 48(69%). A study from Ludhiana, India described jaundice and anorexia as the main presenting features[7]. Blood transfusions are important source of spread of hepatitis viruses because of improper screening[8]. We had 7 (10%) patients with positive history of blood transfusions.

Vaccination is an important way of preventing HAV and HBV[9] not only the acute episode but also the chronic sequele of HBV[10]. We had only 2 (2.8%) patients vaccinated against HAV and 9 (13%) against HBV. So vaccination should be promoted at an early age[11] so that the preventable causes can be eradicated this can be estimated from this that in United States before the era of routine vaccination of HBV 24000 children were infected with HBV each year[12].

Majority of our patients were positive for HAV IgM 50 (72%) followed by HbsAg in 4 (5.7%). This is similar to previous study which was conducted at Paediatric department Shaikh Zayed hospital, Lahore[13] which is also supported by another study conducted in Karachi[14] but in one study at Paediatric department Shaikh Zayed hospital, Lahore HEV was also found to be common agent of acute hepatitis[15].

CONCLUSIONS

Jaundice was the main presenting complaint followed by vomiting with significant recovery and Hepatitis A was the most common cause of acute viral hepatitis in children admitted in hospital.

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