

Spectrum of Acute Hepatitis in Children at a Tertiary Care Hospital

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Abstract: Acute viral hepatitis is a systemic infection affecting the liver predominantly .It continues to be a common medical problem in both developing and developed countries. This disorder is caused by atleast five pathognomic hepatotropic viruses that is hepatitis A, B, C, D, E (HAV, HBV, HCV, HDV and HEV) respectively. The clinical spectrum of acute viral hepatitis ranges from entirely subclinical and inapparent infection to rapidly progressing and fulminant hepatic failure The study was conducted -To determine the etiological profile of acute viral hepatitis in patients, attending the Pediatric Deptt. of GMCH, Guwahati and to study the different clinical manifestations, and outcome of acute viral hepatitis. This is a prospective observational hospital-based study conducted in Deptt. of Paediatrics, GMCH, Guwahati between Aug 2016 to July 2017. The most common cause of viral hepatitis was hepatitis A (80.4%). Jaundice (95.6%) is the most common symptom with fever (91.3%),fatigue in 89.1% followed by nausea/vomiting in 78.3%. The disease resolved in 36(78.3%) cases,1(2.2%)had chronic disease and 9(19.5%)cases expired.

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I. Introduction

Acute viral hepatitis is a systemic infection affecting the liver predominantly.It continues to be a common medical problem in both developing and developed countries.This disorder is caused by atleast five pathognomichepatotropic viruses that is hepatitis A, B, C,D, E(HAV,HBV,HCV,HDV and HEV) respectively.The clinical spectrum of acute viral hepatitis ranges from entirely subclinical and inapparent infection to rapidly progressing and fulminant hepatic failure.Hepatitis A(HAV) and E(HEV) viruses are feco-orally transmitted and selflimiting whereas hepatitis B(HBV),C(HCV) and D(HDV) are transmitted parenterally and may progress to chronic hepatitis. More than 90% patient with acute viral hepatitis recover without any hepatic dysfunction(Sherlock 2002).Nearly 1-2% of cases progress to chronic hepatitis (HBV,HCV) leading to chronic liver failure 6 months after the icteric phaseof acute viral hepatitis.1-2% cases of viral hepatitis develop massive liver cell necrosis resulting in fulminant hepatic failure.

The study was conducted with the following objectives

-To determine the etiological profile of acute viral hepatitis in patients,attending the Pediatric Deptt. of GMCH,Guwahati.

-To study the different clinical manifestations,and outcome of acute viral hepatitis

II. Materials and Methods

This is a prospective observational hospital-based study conducted in Deptt. of Paediatrics,GMCH,Guwahati between Aug 2016 to July 2017.

Study Design: Prospective observational study

Study Location: Department of Paediatrics Gauhati Medical College and Hospital

Study Duration:Aug 2016 to July 2017

Sample size: 46 patients

After informed verbal consent from parents/guardians, a total no. of 46 cases of acute hepatitis of age 1-12yrs were included in the study. Acute hepatitis were diagnosed on the basis of history, clinical (Jaundice, pain in upper abdomen, anorexia, nausea, vomiting, fever, pruritis, tender hepatomegaly with or without ascites and without any stigmata of chronic liver disease).Biochemical markers (LFT serum serum bilirubin,alanine aminotransferase(ALT),aspartate aminotransferase (AST),alkaline phosphatase(ALK), normal or low,serum albumin with or without increase in PT/PT/INR were taken. Acute liver failure was diagnosed by PT>15sec or INR>1.5 with features of encephalopathy. Patients were also tested for viral markers anti HAV IgM, anti HEV IgM, HBsAg, and anti HCV.Disease which have clinical presentation of acute hepatitis with hepatotropic virus(HAV,HBV,HCV,HEV) etiology like enteric fever, malaria, dengue, haemolytic anemia, metabolic,

autoimmune and drug induced jaundice were excluded from the study. Clinical findings and laboratory results were recorded in a predesigned proforma. Data were tabulated in excel format and analysed.

Results

Total Cases - 46

Table 1: Sex wise distribution of study participants

Sex	Male	Female
Cases	32 (69.6%)	14 (30.4%)

Table 2 : Etiology of acute viral hepatitis

Types	Hep A	Hep B	Hep C	Hep D	Hep E	Hep mixed	Unknown
No. of cases	37 (80.4%)	1 (2.2%)	0	0	0	0	8 (17.4%)

Table 3: Clinical features

Clinical features	No. of cases
Jaundice	44 (95.6%)
Fever	42 (91.3%)
Pruritis	2 (4.3%)
Fatigue	41 (89.1%)
Pain abdomen	30 (65.2%)
Nausea/vomiting	35 (76%)
Hepatomegaly	36 (78.3%)
Splenomegaly	1 (2.2%)

Table 4: Serum bilirubin at presentation

Total bilirubin	No. of patients
1-5mg/dl	5 (10.9%)
5-10mg/dl	18 (39.1%)
>10mg/dl	23 (50%)

Table 5: SGPT at presentation

Units/ml	No of patients
100-200	9 (19.6%)
200-500	8 (17.4%)
500-1000	14 (30.4%)
1000-3000	10 (21.7%)
3000-5000	5 (10.9%)
>5000	0

Table 6: PT among study participants

PT in sec	No. of patients
<15	32 (69.6%)
>15	14 (30.4%)

Table 7: Outcome among study participants

Outcome	No. of patients
Resolved	36(78.3%)
Chronicity	1(2.2%)
Expired	9(19.5%)

III. Results

In our study total number of cases were 46 of which 69.6% were male and 30.6% were female. The most common cause of viral hepatitis was hepatitis A (80.4%). Hepatitis B was found in 1 (2.2%) cases and in 17.4% cases no viral marker was detected. The most common clinical presentations were jaundice (95.6%), fever (91.3%), fatigue (89.1%) and nausea/vomiting (76%). In 78.3% of cases hepatomegaly was found and splenomegaly was seen in 2.2% of cases. SGPT level was increased in all cases with 30.4% in the range 500 – 1000 units/ml, 21.7% in the range of 1000 – 3000 units/ml and 10.9% in the range of 3000 – 5000 range. 50% of cases has total bilirubin of more than 10mg/dl and in 39.1% of cases the value was in the range of 5 – 10 mg/dl. In 32 cases PT was < 15sec and in 14 cases it was more than 15 sec. The disease resolved in 36(78.3%) cases, 1(2.2%) had chronic disease and 9(19.5%) cases expired.

IV. Discussion

The most common infection in our study was due to HAV infection. A study by Behera MR et al in eastern part of India also showed highest incidence of HAV infection¹. Despite of availability of vaccine HAV is

still a major issue in developing countries. This is probably due to unhygienic practices and lack of knowledge regarding availability of vaccine. Most cases are male, as males are given more importance than females. This was similar to studies by Parekh Z et al and Poddar U et al. In 10 cases there was no viral marker. This may be due to non A-E hepatitis. Jaundice (95.6%) is the most common symptom with fever (91.3%), fatigue in 89.1% followed by nausea/vomiting in 78.3%. Similar result with jaundice and fever was the most common presentation found in studies by Parekh Z et al.

Liver enzymes were elevated in all cases, most cases had SGPT levels between 1000-3000 iu/ml at presentation. Total bilirubin level varied. Most cases had bilirubin level >10mg/dl at presentation. PT INR was less than 1.5 in most of the cases. Out of 46 cases 9(19.5%) cases expired.

V. Conclusion

Hepatitis A is the most common cause of hepatitis in children. This can be prevented by creating awareness regarding mode of transmission, proper hygiene and vaccination. Hepatitis B can be prevented by universal immunisation. Proper screening of blood and blood products can prevent hepatitis B and C infection.

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