

# A study of clinical profile of viral hepatitis A and E among children at tertiary care centre

K Sravanthi

Assistant Professor, Department of Paediatrics, Viswabharathi Medical College and General Hospital, Kurnool, INDIA.

Email: [sravs.k.r@gmail.com](mailto:sravs.k.r@gmail.com)

## Abstract

**Background:** Viral hepatitis is an infection of the Liver caused by a virus. It is a common health problem in children across the world. The present study is done to study the clinical profile of viral hepatitis A and E in children at a tertiary care hospital. **Methods:** This observational study was done from April 2020 to March 2021 in the department of Paediatrics, Viswabharathi General Hospital, Kurnool among the children from 1 year to 18 years of age. A total of 35 children diagnosed as Hepatitis virus positive were included in the study. clinical profile and Laboratory parameters were entered in a predefined format and analysis was performed using SPSS 16 version. **Results:** Among 35 cases 20(57.14%) were boys and 15 were girls (42.85%). 25 (71%) patients were positive for hepatitis A (HAV) and 10(29%) patients were positive for hepatitis E (HEV). common presenting complaints were fever, followed by jaundice, high colored urine and pain abdomen. Icterus was the most common finding followed by hepatomegaly, pallor and oedema. Liver enzymes(AST,ALT) and serum bilirubin raised in all the HAV, HEV cases **Conclusion:** Hepatitis A and E are common causes of Hepatitis found among the children. These can be preventable by good sanitation and awareness among the people.

**Key Word:** Hepatitis virus infection, Jaundice, Children

## \*Address for Correspondence:

Dr K. Sravanthi, Assistant Professor, Department of Paediatrics, Viswabharathi Medical College and General Hospital, Kurnool, INDIA.

Email: [sravs.k.r@gmail.com](mailto:sravs.k.r@gmail.com)

Received Date: 02/04/2021 Revised Date: 10/05/2021 Accepted Date: 16/06/2021

DOI: <https://doi.org/10.26611/10141922>

This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/). 

## Access this article online

Quick Response Code:	Website: <a href="http://www.medpulse.in">www.medpulse.in</a>
	Accessed Date: 08 August 2021

## INTRODUCTION

Hepatitis is an inflammation of liver which can be caused by collection of different viruses such as hepatitis A, B, C, D and E. as liver disease is characterized by jaundice, patients serum is tested for the presence of specific antiviral antibodies or antigens to diagnose the hepatitis.<sup>1,2</sup> The incidence of infection with these five viruses is generally lowest in industrialised and developed countries and highest in less developed regions. Hepatitis A virus and hepatitis E virus spread mainly through faeco-oral route is a mode of transmission for Hepatitis A virus

and the blood transfusion is a mode of transmission for hepatitis B, C and D.<sup>3</sup> All the viruses can cause acute illness characterised by nausea, malaise, abdominal pain and jaundice.<sup>4</sup> 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 selflimiting, whereas hepatitis B (HBV), C (HCV) and D (HDV) may progress to chronic hepatitis. India is hyperendemic for hepatitis A and E.<sup>5</sup> In tropical nations, Congestion, poor cleanliness, ill-advised disinfection and pollution of food and water are the predisposing factors for viral hepatitis.<sup>6</sup> this study was conducted to study the clinical profile of viral hepatitis A and E among children at a tertiary care hospital.

## MATERIALS AND METHODS

The present observational prospective study was conducted among children aged 1 to 18 years at department of pediatrics, Viswabharathi General Hospital for a period of one year from April 2020 to March 2021. The inclusion and exclusion criteria were as follows.

### Inclusion criteria:

1. Patients having age from one year to 18 years.

2. Patients with symptoms like weakness, lethargy, early fatigue, joint pains, jaundice (yellow skin) and Abdominal pain; an elevated liver enzymes; and positivity of serological markers for of HAV and HEV .
3. Patients willing to participate

**Exclusion criteria:**

1. Children having hepatitis B and hepatitis C,
2. Patients with non-viral causes of hepatitis
3. Patients who were not willing to participate in the study

Ethical clearance was taken from the Institutional ethical committee before start of the study and written informed consent was taken from all the subjects/guardians participating. Pre-tested and pre-designed questionnaire was used for collecting data. Data included demographic information, clinical history regarding illness including clinical symptoms and signs, clinical examination specially related to hepato biliary system. The patients were subjected to the laboratory tests like liver function tests, The serological confirmations of viral hepatitis done for anti HAV immunoglobulin M, and anti HEV Immunoglobulin M. To study serological parameters, from every patient, 5 ml of blood was collected, Serum was separated and stored at -20°C until further tests were conducted. Serum was tested for bilirubin and aminotransferase levels in Erba-2 analyser. Tests for Anti HAV Ig M and anti HEV IgM were done using commercially available kits based on enzyme linked assay (ELISA) as per manufacturers instruction.

**RESULT**

Total 35 children were included in study. Among 35 cases 20(46%) were boys and 15 (54%) were girls. About 4 (11.42%) children were between age 1to 5 years, 11(31.42%) children were >10yrs old and highest incidence 20 (57.14%) is seen in children between 6-10 yrs of age

**Table 1: Age and sex distribution of cases.**

Age	Male	Female
1-5yrs	3	1
6-10yrs	11	9
>10yrs	6	5

Out of 35 cases 25 (71%) cases were having infection with hepatitis A, followed by 9(29%) cases of hepatitis E

**Table 2: Type of Hepatitis**

Type of Hepatitis	No. of Patients
Hepatitis A	25
Hepatitis E	9

Table 3 describes symptoms. The common symptoms presented were fever (100%), jaundice and vomiting in 31

cases (88%), these followed by dark coloured urine in 26 cases (74%), abdominal pain in 20 cases (57%), nausea in 4 cases (11%), anorexia and loose stools in 2 cases 6%.

**Table 3: Symptoms distribution**

Symptom	No. of Patients (%)
Jaundice	31 (88%)
Vomiting	31 (88%)
Dark colored urine	26 (74%)
Abdominal pain	20 (57%)
Nausea	4 (11%)
Anorexia	2 (6%)
Loose stools	2 (6%)
Jaundice	31 (88%)

Table 4 describes physical findings. The common findings were Icterus in 35(100%) cases, hepatomegaly in 28 (80%) cases followed by pallor in 12 (34%) cases, edema in 7 (20%) cases, ascitis in 3 (9%) cases, splenomegaly in 2 (6%) cases.

**Table 4: Various physical findings distribution**

Symptom	No. of Patients (%)
Icterus	35 (100%)
Hepatomegaly	28 (80%)
Pallor	12 (34%)
Edema	7(20%)
Ascitis	3 (9%)
Splenomegaly	2 (6%)

Table 5 describes biochemical parameters. Liver enzymes(AST,ALT) and serum bilirubin raised in all the HAV, HEV cases. AST >1000 U/L was seen in 17% of the cases and ALT >1000U/L was seen in 11% of the cases and total bilirubin 5-10 mg/dl was seen in 34% of the cases.

**Table 5: Biochemical parameters**

AST presentation	
Units/l	No. of patients
40-500	16 (46%)
500-1000	13 (37%)
>1000	6(17%)
ALT	
Units/l	No. of patients
40-500	17 (49%)
500-1000	14 (40%)
>1000	4(11%)
Serum bilirubin	
Total bilirubin	No. of patients
1.2-5mg/dl	22(63%)
5-10mg/dl	12(34%)
>10mg/dl	1 (3%)

**DISCUSSION**

We studied 35 children admitted with viral hepatitis and found that children between age group of 6 to 10 years were mostly affected. kamath *et al.*<sup>7</sup>, Behra *et al.*<sup>8</sup> and kumar *et al.*<sup>9</sup> also reported similarly in their studies. In our study, HAV (71%) was detected to be the most common

cause of acute hepatitis followed by HEV (29%); Poddar U *et al.*<sup>10</sup> in their study observed that in children HAV infection (64.5%) is the most common cause of viral hepatitis followed by HEV infection (16.3%), Behera MR *et al.*<sup>11</sup> reported that in children HAV (63.15%) infection is most common cause of viral hepatitis followed by HBV (10.52%), and HEV (5.26%). Also comparable with study done by sumit das *et al.* from Assam India who reported that 73.21% children were infected with HAV infection<sup>12</sup> symptoms and examination findings were highlighted in case of viral hepatitis. Common complaints reported in our study were Fever (100%) followed by jaundice (88%), vomiting (88%). Parekh Z *et al.* in his study found common complaints as jaundice (94%) followed by fever (82%).<sup>13</sup> Behera AK *et al.* in his study observed the common complaint as yellowish discoloration of eye and urine.<sup>14</sup> In our study common findings reported were Icterus (100%), followed by hepatomegaly (76%). The other study also reported the jaundice and hepatomegaly as most common sign.<sup>15</sup> The extent of hepatic damage can be provided by Biochemical study. In our study Total serum bilirubin and hepatic enzymes were increased.

## CONCLUSION

In our study it was found that Hepatitis A was the common cause of hepatitis among children. It's important to create awareness in the society regarding preventive measures. It is also important to educate the society regarding clinical presentation of disease so that they can seek medical intervention early and can reduce significant mortality associated with it.

## REFERENCES

1. Satsangi S, Dhiman R. Combating the wrath of viral hepatitis in India. *Indian J Med Res.* 2016; 144(1):1.
2. Kumar M, Sarin SK. Viral hepatitis eradication in India by 2080- gaps, challenges and targets. *Indian J Med Res.* 2014; 140: 1-4.
3. Jain P, Prakash S, Gupta S, Singh KP, Shrivastava S, Singh DD, *et al.* Prevalence of hepatitis A virus, hepatitis B

4. virus, hepatitis C virus, hepatitis D virus and hepatitis E virus as causes of acute viral hepatitis in North India: a hospital based study. *Indian J Med Microbiol.* 2013; 31(3):261-5.
5. International Journal of Advances in Medicine Birajdar SV *et al.* *Int J Adv Med.* 2017 Apr;4(2):412-416
6. Behera MR, Patnaik L. Clinicobiochemical profile and etiology of acute viral hepatitis in hospitalized children: A study from Eastern India. *Indian J Child Health.* 2016; 3(4):317-320.
7. Zakaria S, Fouad R, Shaker O, Zaki S, Hashem A, El-Kamary SS, *et al.* Changing patterns of acute viral hepatitis at a major urban referral center in Egypt. *Clin Infect Dis [Internet].* 2007 Feb 15;44(4):e30-6.
8. Kamath SR, Sathiyasekaran M, Raja TE, Sudha L. Profile of viral hepatitis A in Chennai. *Indian Pediatr.* 2009; 46(7): 642-3.
9. Behera MR, Patnaik L. Clinico-biochemical profile and etiology of acute viral hepatitis in hospitalized children: A study from Eastern India. *Indian J Child Health.* 2016; 3(4): 317-320.
10. Kumar, K.J., Kumar, H.C.K., Manjunath, V.G. *et al.* *Indian J Pediatr.* 2014; 81: 15.
11. Poddar U, Thapa BR, Prasad A, Singh K. Changing Spectrum of Sporadic Acute Viral Hepatitis in Indian Children. *Journal of Tropical Pediatrics.* 2002; (48).
12. Behera MR, Patnaik L. Clinicobiochemical profile and etiology of acute viral hepatitis in hospitalized children: A study from Eastern India. *Indian J Child Health.* 2016; 3(4):317-320.
13. Dr Sumit Das , Dr Anupama Deka, Dr Tanmay Biswas, Clinical Profile of Acute Viral Hepatitis in Children – In Southern Assam. *jmscr.*2021;9(3):111-118
14. Parekh Z, Modi R, Banker D. Clinical study of hepatitis in children with special reference to viral markers. *NHL J Med Sci.* 2013;2(1):23-7
15. Behera AK, Jit BP, Purohit P, Nahak SR, Chhatar S, Marndi C, *et al.* Clinical profile of viral hepatitis in a tertiary health care centre of eastern India. *Int J Med Res Rev* 2016;4(7):1276-80.
16. Nagaich N, Raghav M, Sharma R. Clinical profile of outbreak of viral hepatitis and its outcome at tertiary care Centre in Jaipur. *Int J Current Advanced Res.* 2016;5(1):577-80.

Source of Support: None Declared  
Conflict of Interest: None Declared