



CLINICAL PROFILE OF CHILDREN ADMITTED WITH HEPATITIS A AND E.

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ABSTRACT

Acute viral hepatitis is major health problem in developing country like India. Acute viral hepatitis occur as both epidemic and endemic forms predominately caused by five type of hepatotropic viruses. Hepatitis A and E are transmitted by feco-oral route whereas hepatitis B, D and C are transmitted through parenteral route. It is prospective hospital based cross sectional study conducted among the children less than 18 yrs. who presented with acute hepatitis. Study was conducted over a period of 1year from November 2018 to October 2019. Detailed history and clinical examination was done to obtain relevant data for the study. Serum was tested for bilirubin and aminotransferase levels in Erba-2 analyser. Tests for Anti Hepatitis A virus Ig M and anti Hepatitis E virus IgM were done. Among 115 cases 53(46%) were male and 62 (54%) were female. Incidence was slightly higher among female. 86 (75%) cases were having infection with hepatitis A, 17 (15%) hepatitis E and 12 (10%) cases were having combined both hepatitis A and E infections. Common presenting complaints were, loss of appetite followed by vomiting, fever and abdominal pain. Visible icterus was seen in 52 cases. Complications were seen in the form of gastrointestinal bleed in 16(14%) patients, pleural effusion in 2 cases and anaemia in 25 (21%) cases. One patient developed aplastic anaemia and 2 children could not survive. Hepatitis A and E are common cause of preventable hepatitis with good prognosis. These can be preventable with good sanitization and awareness among the population.

KEYWORDS: children, hepatitis A, hepatitis E, complications.

INTRODUCTION

Acute viral hepatitis is major health problem in developing country like India. Acute viral hepatitis occur as both epidemic and endemic forms predominately caused by five type of hepatotropic viruses Hepatitis A virus, hepatitis B virus, hepatitis C virus, Hepatitis D and hepatitis E virus . Hepatitis A and E are transmitted by feco-oral route through contaminated food and water whereas hepatitis B, D and C are transmitted through parenteral route.

Hepatitis A is predominant cause of acute hepatitis among children, sometimes combined infection with both hepatitis A and E are seen in children leading to acute hepatic failure.^[1]

MATERIAL METHODS

It is prospective hospital based cross sectional study conducted among the children less than 18 yrs. who presented with acute hepatitis (<15 days duration) diagnosed based on clinically visible icterus or raised aminotransferases levels (>3times of upper limit).

Patients having non infective causes of hepatitis (ex; Sickle cell disease) were excluded from study. Children having hepatitis B and C along with chronic underlying

liver disease were also excluded from study. Study was conducted over a period of 1year from November 2018 to October 2019. Written informed consent was taken from all the subjects/guardians participating and institutional ethical committee approval was taken.

Approximately 5 ml of blood was withdrawn from every patient to study serological parameters. Serum was separated and stored at -20⁰c until further tests were conducted. Detailed history and clinical examination was done to obtain relevant data for the study. 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.

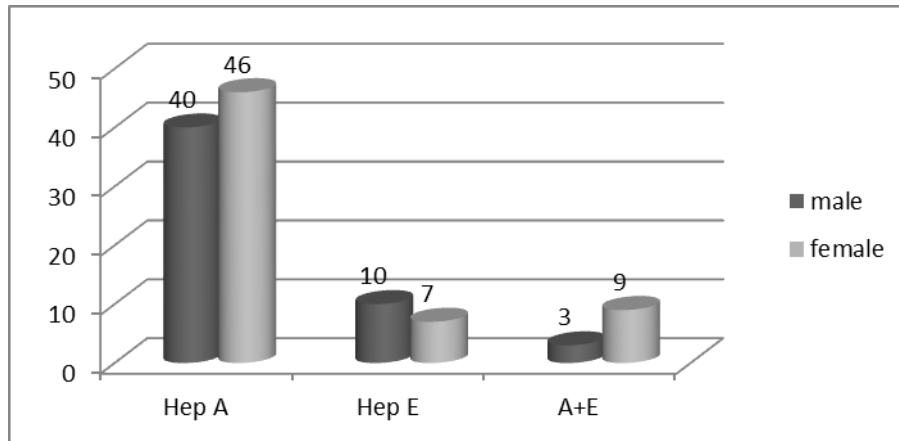
RESULTS

Total 115 children were included in study. Among 115 cases 53(46%) were male and 62 (54%) were female. Incidence was slightly higher among female children as compared to male. About 17 (15%) children were between age 1to 5 years, 40(35%) children were >10yrs old and highest incidence58 (50%) is seen in children between 6-10 yrs of age. 60% cases were from urban background and 40% cases were from rural background.

Table 1: Age and sex distribution of cases.

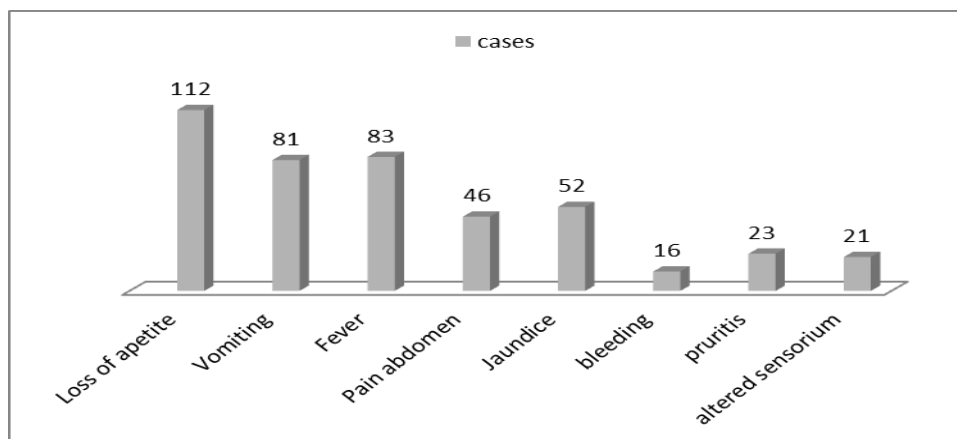
Age	Male	Female
1-5yrs	10	7
6-10yrs	26	32
>10yrs	17	23

Among 115 cases 86 (75%) cases were having infection with hepatitis A, 17 (15%) hepatitis E and 12 (10%) cases were having combined both hepatitis A and E infections.

**Fig 1:- Type of hepatitis.**

Children presented with multiple symptoms following infection, loss of appetite was most common complaint with which many children presented followed by

vomiting, fever and abdominal pain. Visible icterus was seen in 52 cases.

**Fig 2:- symptoms of presentation.**

On examination icterus was present in 64% of cases, mild pallor in 20% of cases. Most of the children 94%

had enlarged liver whereas 38% of children had splenomegaly. Ascites was detected in 18% of cases.

Table 2: Biochemical parameters.

Biochemical parameter	HepA (n=86)	Hep E n=17)	Hep A + E n=12)
Hb(gm/dl)	9.5 \pm 1.5	10.5 \pm 1.2	8.2 \pm 1.4
platelet(X10 ⁴ /cumm)	310.5 \pm 102.4	280.2 \pm 110.2	240.42 \pm 110.2
Serum bilirubin <5.0 mg/dL	53	15	4
serum bilirubin >5.0 mg/dL	33	2	8
Elevated AST <1000iu/lt	51	11	5
elvated AST > 1000IU/lt	35	6	7
Elevated ALT <1000IU/lt	55	13	6
Elevated ALT>1000IU/lt	31	4	6
Elevated ALP	74	15	12
Abnormal PT [INR>1.5]	14	3	6
Serum albumin [<3.5 g/dL]	18	2	5

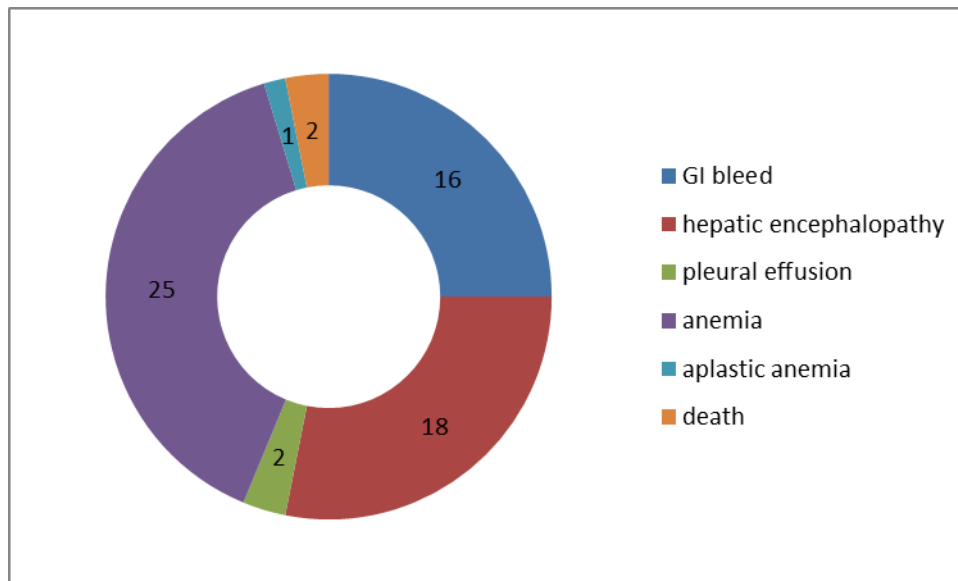


Fig 3: complications of hepatitis.

DISCUSSION

We studied 115 children admitted with acute viral hepatitis. Among affected children maximum number were in the age group of 6 to 10 years. This is comparable to other studies like kamath et al^[2], Behra et al^[3] and kumar et al.^[4] Incidence is higher among the male children as compared to female in contrast to other studies like Poddar et al^[5], Behra et al.^[3] In our study 69 (60%) cases were from urban background whereas 46 (40%) cases were from rural background.

Hepatitis A infection was found to be most common (75% cases) cause of acute hepatitis which is similar to other studies like Poddar et al^[5], Behra et al^[3]. Hepatitis E infection is seen in 15% cases where as combined hepatitis A and E infections are seen in 10% of cases where as Poddar et al^[5] reported 8% of combined infection and Arora et al^[6] reported 30% of mixed infection. On evaluation of symptomology of presentation it was found that loss of appetite (97%) was most common presenting feature followed by fever (72%) and vomiting (70%). Similar symptomology was reported in other studies like Birajdar et al^[7] and Dabadghao et al.^[8] On examination icterus was present in 64% cases at the time of admission remaining children got admitted in anicteric phase only. Hepatomegaly was present in 94% of cases and splenomegaly was present in 38% cases. Free fluid was present in 18% of cases.

On examining laboratory data it was found that average haemoglobin of children affected with hepatitis A was around 9.5 ± 1.5 gm/dl, whereas average haemoglobin level in hepatitis E and combined infection is 10.5 ± 1.2 gm/dl and 8.2 ± 1.4 gm/dl respectively, these results were comparable to other study like Behra et al^[3], Akarsu et al^[9]. Around 36% cases presented in anicteric phase where initial bilirubin levels were normal but gradually hyperbilirubinemia developed above normal range. Around 37% of children had serum bilirubin

above 5 mg/dl, average, AST and ALT levels were more than 1000IU/lit in 42% and 36% of cases respectively. Amino transferase levels were raised more in patients with combined infection (50% of cases with both A and E infection). These results were consistent with other studies like Çetinkaya et al^[10], Shamsizadeh A et al.^[11]

Complications were seen some cases in the form of gastrointestinal bleed in 16(14%) patients, pleural effusion in 2 case and anaemia in 25 (21%) cases. One patient developed aplastic anaemia and 2 children could not survive. Similar complications were explained by Cheema H A et al^[12] and Kumar K J et al.^[13]

CONCLUSION

Hepatitis A and E are common cause of preventable hepatitis with good prognosis. This infection can be life threatening in some cases but infection can be preventable with good sanitization and awareness among the population.

CONFLICT OF INTEREST: We declare no conflict of interest in this study.

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