Research Paper

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A Study of the Clinico-Epidemiological Prevalence of Hepatitis Caused by Hav and Hev in a Tertiary Care Hospital in Ahmedabad .

Microbiology

KEYWORDS : Heptitis A Virus, Hepatitis E Virus, Adult, Children.

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ABSTRACT

Background:

In our country ,Hepatitis A and Hepatitis E are endemic and are major public health problems leading to significant morbidity . both have feco-oral transmission with greater incidence during monsoon.

Objectives:

To determine the prevalence, age specific prevalence and seasonal variation of Hepatitis A and Hepatitis E in tertiary care hospital in ahmedabad.

Methods:

Retrospective observational study was done on serum samples of 1649 patients tested for anti HAV igM antibodies and 1649 patients tested for anti HEV igM antibodies over a period of 7 months (jan. to july2014).

Results:

Out of 1649 patients tested for anti HAV igM antibodies 275 (16.67) are positive. 143 (52%) were children and 132 (48%) were adults.

Out of 1649 patients tested for anti HEV igM antibodies 454 (27.53) are positive . 52 (11.45) were children and 402 (88.54) were adults.

Conclusions:

HAV affecting more children and HEV affecting more in adults . HAV and HEV both more in summer.

Introduction.

Hepatitis A and E virus (HAV & HEV) are the most common causes of acute hepatitis and are endemic in South Asia; specially in the developing countries, like the Indian subcontinent(1,2) as well as in Bangladesh.(2,3) Both viruses generally cause an acute, self-limiting illness followed by a complete recovery. Recent studies have shown that both HAV and HEV can result in severe disease and a poor outcome. The overall estimated mortality rate associated with hepatitis A is 0.1% to 0.3%, but this rises to 1.8% over the age of 50.(2,4) On the other hand, HEV draws most of the attention due to the poorly understood case fatality rate (>20%) in infected pregnant women, especially in their second and third trimesters.(5)

Though complete recovery without squeal is the usual outcome in these two enteric viral hepatitis, relapsing form can be seen in 3-20% of the case. Clinically demonstrable renal disease accounts for about 44.8% of all extrahepatic manifestations secondary to viral hepatitis and can occur in acute or chronic cases, which either may precede or follow overt liver disease(6). The exact mechanism(s) involved are not known yet but immune complex formation may be an important etiological factor.(2,7)

HEV infection is associated with a wide range of extrahepatic features, including renal disease. But, extra-hepatic manifestations are unusual in hepatitis A, and renal manifestations are even more infrequent. Still, a variety of renal manifestations can be observed in patients with HAV infection who are biochemically stable (normal aminotransferase levels).(2,7,8) Such patients may present with proteinuria in their post-icteric phase which can be detected during their third or fourth follow-up. Hepatitis itself can cause proteinuria which usually subsides within the first week of jaundice.(6,7) Thus, patients with both HAV or HEV infections are recommended to be followed up 3-4 weeks after discharge, and if necessary at monthly intervals for next 3 months(5) as relapse may occur even after complete recovery(9) or course may be prolonged (abnormal aminotransferase levels) even more than 14 weeks(10) resulting in a complicated outcome with atypical manifestations. The abscense of severe liver disease precludes a missed diagnosis of underlying renal manifestations.(2,6) Proteinuria, a simple test in practice, can be a useful tool for early detection of the underlying renal impairment to halt further disease progression and for effective interventions. This study was undertaken to evaluate and compare the prevalence as well as the degree of proteinuria in HAV and HEV- hepatitis patients.

Methods.

Retrospective observational study was done on serum samples of 1649 patients tested for anti HAV igM antibodies and 1649 patients tested for anti HEV igM antibodies over a period of 7 months (jan. to july2014).

Flow chart of the test procedure.(ELISA)

- PC : (positive control)
- NC : (negative control)

- TMB :(tetramethyl benzidine)
- ELISA: (Enzyme linked immunosorbant assay)

Results.

Common clinical manifestations were jaundice, fever, vomiting, abdominal pain, malaise.

Out of 1649 patients tested for anti HAV igM antibodies 275 (16.67) are positive. 143 (52%) were children and 132 (48%) were adults. Male 181(65.81), female 94 (34.18). highest prevalence is seen in april (21.97).

Out of 1649 patients tested for anti HEV igM antibodies 454 (27.53) are positive . 52 (11.45) were children and 402 (88.54) were adults. Male 289 (63.65) ,female 165 (36.34). highest prevalence is seen in april (40.8).

TABLE-1:
(% of HAV and HEV)

Month	% (HAV)	% (HEV)
JAN.	14.1	20.94
FEB.	17.8	26.17
MARCH	21.77	33.77
APRIL	21.97	40.8
MAY	17.62	24.22
JUNE	15.95	29.18
JULY	9.93	19.86

Maximum prevalence of HAV and HEV in April Month.and Lowest Prevalence is in July.

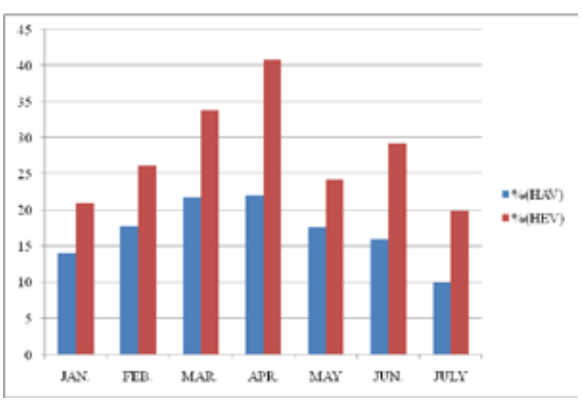


TABLE-2:
(% of child and adult)

MONTH	%(HAV)	%(HEV)
JAN. (child)	48.48	12.24
JAN. (adult)	51.51	87.75
FEB.(child)	47.05	12
FEB.(adult)	52.94	88
MAR.(child)	38.77	17.1
MAR.(adult)	61.22	82.89
APR.(child)	51.02	14.28
APR.(adult)	48.97	85.71
MAY(child)	57.5	9.09
MAY (adult)	42.5	90.9
JUNE(child)	63.41	9.33
JUNE(adult)	36.58	90.66
JULY(child)	62.06	3.44
JULY (adult)	37.93	96.55

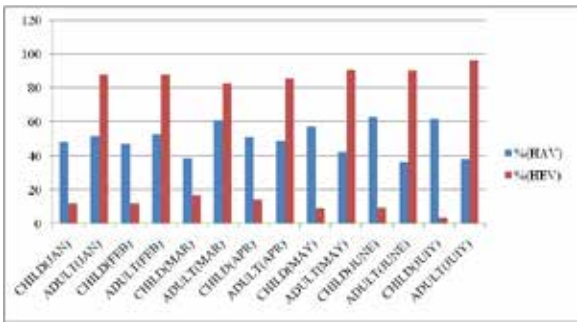
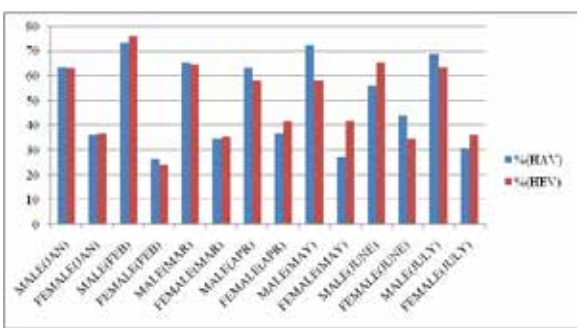


TABLE-3
(% of male and female)

MONTH	% (HAV)	%(HEV)
JAN (male)	63.63	63.26
JAN (female)	36.36	36.73
FEB. (male)	73.52	76
FEB.(female)	26.47	24
MAR.(male)	65.3	64.47
MAR. (female)	34.69	35.52
APR. (male)	63.26	58.24
APR. (female)	36.73	41.75
MAY (male)	72.5	58.18
MAY (female)	27.5	41.81
JUNE(male)	56.09	65.33
JUNE(female)	43.9	34.66
JULY (male)	68.96	63.79
JULY (female)	31.03	36.2



Conclusions:

There is a change in epidemiology of HAV affecting more children and HEV affecting more in adults . HAV and HEV both more in summer.

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