Seroprevalence of hepatitis B viral infection among antenatal women in a tertiary care hospital

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ABSTRACT

Hepatitis B which is leading cause of morbidity & mortality. Infection by HBV in pregnancy comes with attendant effect on both mother & child. It has been reported that 10 to 20 % of hepatitisB surface antigen positive pregnant women transmit the virus to their babies. The prevention of vertical transmission is very important because infection at infancy leads to a chronic carrier status which has been reported in 90 % of infants born to HbsAg positive mothers. Occurrence of HbsAg is more in O positive blood group (59.25 %). Hence the present study was conducted to determine HbsAg as a serological marker for the viral infection among pregnant women attending the OBG outpatient department in our hospital. Prospective study of a total of 2800 blood samples were studied over a period of 1 year from Aug 2011 to July 2012 in Central laboratory, Mediciti Institute of Medical Sciences, Ghanpur. Blood grouping & crossmatching was done for all these samples. Sera of these samples were subjected to rapid test Hepacard for HbsAg screening. Seropositives in Hepacard were further confirmed by Hepalis a (Microwell ELISA test). Among 2800 antenatal women tested, 41 (1.46%) women are seropositive for HbsAg. Most of them belonged to 21-25 years age group. The predominant blood group among the seropositives was O +ve. There was low prevalence of HbsAg (1.46%) in our study. Majority of seropositives were in younger age group of 21 -25 years. The predominant blood group in HbsAg carriers is O +ve group.

INTRODUCTION

Hepatitis B virus (HBV) infection is a major global health problem. It is estimated that over 20 millions people are infected annually with this virus globally and there are 350 - 400 millions chronic carriers of Hepatitis B virus. [1] The burden of disease globally by vertical transmission is significant [2]. It has been reported that 10 to 20% HBsAg positive pregnant women transmit virus to their babies [3]. Studies from India revealed that HBsAg carrier state is predominantly seen in age group of 16-29 years [4] and it is mostly associated with O positive blood group.

MATERIALS AND METHODS

A total of 2800 antenatal women coming to OBG department in Mediciti hospital were included in the study conducted over a period of one year from August 2011-July 2012.

5ml of venous blood was collected from these patients and blood grouping & crossmatching was done by slideagglutination test with monoclonal blood typing antibodies and Rh typing was done by anti D monoclonal antibodies. Sera of these samples were subjected to screening test HEPECARD which is a one step immunoassay based on antigen capture or sandwich principle. All the seropositives were further
confirmed by HEPALISA, which is a solid phase enzyme linked assay, based on direct sandwich principle.

RESULTS

PREVALENCE OF SEROPOSITIVES

<table>
<thead>
<tr>
<th>Age</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>16-22</td>
<td>31.71%</td>
</tr>
<tr>
<td>23-28</td>
<td>48.78%</td>
</tr>
<tr>
<td>29-34</td>
<td>9.76%</td>
</tr>
<tr>
<td>35-45</td>
<td>9.76%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

DISTRIBUTION OF AGE IN SEROPOSITIVES
DISCUSSION

HBsAg carrier state in antenatal women in our hospital area was analysed by both screening and confirmatory test. Seroprevalence in our area was 1.46% which correlated with the other studies in Pune & Hyderabad which revealed a percentage of 1.7% and 1% [3] respectively. The seroprevalence of 1.46% suggests that our area is in low endemicity zone for seroprevalance of HBsAg, although southern part of our country is in the intermediate endemicity zone according to statistics.

The predominant age group in our area is 23-28 years which is in accordance with study [4]. The reason for this may be because this is the age group in which most women are most likely to get married and become pregnant. It is also the age when they are likely to present for the first time for ante-natal care. Hence, those positive to HBsAg are likely to be picked up when screened. Our study of age related incidence of HBsAg revealed that predominant age group in our study coincides with other studies world wide. Our study reveals that O positive blood group was the predominant blood group (46.34%) in HBsAg positive cases which coincides with study[2]. In a study [5] on distribution of blood groups in Hepatitis B infection, a disproportionate excess of patients were found to belong to blood group O. Thus our study confirms that O blood group is more associated with HBsAg carrier state.

CONCLUSION

The seroprevalence of HBsAg positive antenatal women was 1.46%. Majority of seropositives were in younger age group of 23-28 years. O blood group the commonest blood group associated with HBsAg carrier state.

REFERENCES

[3] Chatterjee et al Indian paediatrics vol 64 .11, 2009