Need for Routine Screening of HBV and HDV in Patients with Cirrhosis of the Liver

Dear Editor,

Three hundred million persons worldwide carry HBV and of them, at least 5% have delta hepatitis. HDV is a delta agent that is deformed and incomplete RNA virus whose replication is dependent on the presence of HBsAg. In association with HBV, HDV produces significantly more severe illness than HBV alone. In the present study, the prevalence of HBV and HDV infection in cirrhosis of the liver and the impact of the dual infection on the clinical outcome in cirrhosis of the liver was assessed.

The present study was conducted in the department of microbiology at JN medical college and hospital, AMU, Aligarh over a period of 12 months from 1994-1995. Sixty-nine consecutive patients of cirrhosis of liver admitted in the medical ward of the hospital during that period were included in the study. The diagnosis of cirrhosis was established as per the criteria described previously. In addition to assessing the hepatic function, the study samples were also screened for HBsAg and for IgM anti Hbc (DIAGNOSYS, AG, Switzerland and MUREX DIAGNOSTICS LTD, Illinois respectively). In all those samples, which were positive for the HBV markers, anti HDV antibody titers were also tested [ETI-AB Deltak-3 (P2802) Kit manufactured by SORIN BIOMEDICA, Italy].

28 (40.6%) of 69 patients of cirrhosis of the liver were positive for HBsAg. Of these 28, IgM anti Hbc was positive in 7 (25%). Anti HDV (delta positive) was detected in 5 (17.9%) of the 28 HBV positive cases (table). In the present study, the overall HBsAg positivity rate was 40.6% in cirrhosis of the liver. The prevalence of anti-HDV in cases of cirrhosis of the liver, positive for HBV markers was 17.9%, this is in accordance with the previous reports from other parts of North India. There were no significant changes in the concentrations of the hepatic enzymes in the HDV positive patients compared to the uninfected groups.

<table>
<thead>
<tr>
<th>HBV Markers</th>
<th>Total</th>
<th>Anti HDV positive (%)</th>
<th>Fatality (%)</th>
<th>Anti HDV negative</th>
<th>Fatality (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBsAg only</td>
<td>21</td>
<td>4 (19)</td>
<td>2 (50)</td>
<td>17</td>
<td>1 (6.8)</td>
</tr>
<tr>
<td>HBsAg and IgM anti Hbc</td>
<td>7</td>
<td>1 (14.3)</td>
<td>1 (100)</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>IgM anti Hbc only</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>5 (17.9)</td>
<td>3 (60)</td>
<td>23</td>
<td>1 (4.4)</td>
</tr>
</tbody>
</table>

In one delta positive patient, both HBsAg and IgM anti-Hbc were also present, indicating it to be a case of co-infection. The other four patients with anti HDV were positive only for HBsAg, suggesting, possibly, super-infection by the delta virus.

Fatality rate was much higher (60%) in delta positive than in delta negative cases (4.4%). The difference in the fatality rates between anti-delta antibodies positive and anti delta antibodies negative groups was statistically significant ($P<0.001$). Hepatic encephalopathy and fulminant hepatic failure were also common in HBV and HDV infected patients compared to those with HBV infection alone. However, this needs confirmation by long term follow up studies.

The high HBsAg positivity rate and the prevalence of anti HDV in cirrhosis of the liver observed in the present study suggest that HDV infection is common in Aligarh. It is likely that the prevalence of HBV infection is much higher than what was observed in the present study since it is known that HDV may suppress the production of HBsAg, which is likely to be below the threshold of detection. Since the prognosis of patients with dual infections (HBsAg and HDV) is poor, we suggest screening for anti HDV in all HBsAg positive patients of chronic liver disease. Furthermore the poor prognostic outcome of dual infections also points out the importance of carrying out Universal childhood immunization against HBV to prevent the development of a more severe disease due to associated HDV infection. It is also suggested that a person who already has HBV infection, exposure to blood should be strictly avoided.

References

Rapid Immunochromatographic Test for Syphilis

Dear Editor,

Confirmatory test for syphilis such as fluorescent treponemal antibody-absorption test (FTA-ABS), *Treponema pallidum* immobilization test (TPI), *Treponema pallidum* haemagglutination (TPHA) test are technically demanding and not available in most developing country settings outside of reference laboratories. By far, TPHA test has the sensitivity and specificity almost similar to that of FTA-ABS test and is considered as an attractive alternative to the expensive and technically demanding FTA-ABS and TPI test for serodiagnosis of syphilis, however, simple rapid treponema specific tests are urgently required for the use in primary health care, private settings, and for high risk patients who are often untraceable. Therefore, one step dipstick test for syphilis namely Syphicheck kit was used in our hospital for rapid confirmation.

Our study group consisted of 300 pregnant females randomly selected from antenatal clinic (ANC) and 300 high risk patients attending dermatology department of Post Graduate Institute of Medical Sciences, Rohtak, with genital ulcers. Previous history of syphilis was excluded. All samples were initially screened qualitatively and quantitatively by Venereal Disease Research Laboratory (VDRL) test using antigen obtained from Serology Laboratory, Kolkata by standard protocols. All VDRL positive samples were followed by one step dipstick test for syphilis (Syphicheck) obtained from Qualpro diagnostics, Goa, India (Rs. 1375/- for 25 tests). Test was done and interpreted according to manufacturer’s instructions.

Out of 300 ANC cases 210 (70%) were both VDRL and Syphicheck negative. Among ANC only two cases were Syphicheck positive out of which one was VDRL positive in titre R4 and other was VDRL negative. Also Syphicheck detected 88 (29.3%) biological false positive cases (Table).

Out of 300 genital ulcer cases from dermatology department, 81 (27%) were both VDRL and Syphicheck negative. A total of 216 cases were diagnosed as syphilis on clinical and serological grounds; out of which 207 (122 titre >R8, 77 titre R1-R8 and 8 among non-reactive VDRL) were Syphicheck positive while rest 9 (6.8%) cases were VDRL reactive in titre more than R8 but Syphicheck negative and compatible with clinical illness. These nine cases were Syphicheck positive after 15 days. Only three (1.7%) gave biological false positive results and these were still Syphicheck negative after 15 days (Table).

Correlation between negative VDRL test and Syphicheck was 97%. With VDRL titre >R8, 93.1% samples were Syphicheck positive, however, with VDRL titre R1-R8, 46.1% were Syphicheck positive. Also Syphicheck detected 9 (3%) cases which were VDRL negative (Table).

VDRL or Rapid Plasma Reagin (RPR) test is most widely used screening test for syphilis in India as they are rapid and economical. Because neither of these tests assay for syphilis specific antibodies, there are problems associated with both their specificity and sensitivity. In early primary disease antilipoidal antibodies may not have developed and in late syphilis (late latent and tertiary) upto 30% of individuals may lack antilipoidal antibodies. In addition, because a variety of