Hepatitis B antibodies in patients with alcoholic cirrhosis, hospital controls, HBsAg-negative chronic cirrhosis (HBsAg-veCAC) and renal unit patients

<table>
<thead>
<tr>
<th>Group</th>
<th>No of patients</th>
<th>Total examined</th>
<th>anti-HBs alone</th>
<th>anti-HBc alone</th>
<th>anti-HBc and anti-HBs</th>
<th>Total with antibody</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic cirrhosis</td>
<td>60</td>
<td>13</td>
<td>9</td>
<td>21</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>HBsAg-veCAC</td>
<td>27</td>
<td>1</td>
<td>6</td>
<td>11</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Renal unit</td>
<td>32</td>
<td>4</td>
<td>5</td>
<td>12</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Hospital controls</td>
<td>60</td>
<td>3</td>
<td>1</td>
<td>18</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

± 11 yr; 15 subjects). A history of blood transfusion, previous jaundice, tattooing, or needle injections were excluded in the alcoholic cirrhosis group and hospital control group. In the HBsAg-veCAC group, six patients gave a previous history of jaundice, one a history of blood transfusion; in the other five patients a post-hepatitis B chronic liver disease could not be excluded.

Serum samples from each group were examined by RIA method (Abbott) for HBsAg, and antibody to HBsAg and HBcAg. All sera were HBsAg-negative.

Our antibody results are shown in the Table. These findings indicate that the prevalence of hepatitis B virus antibodies (χ² test with Yates’ correction) was significantly increased in the alcoholic cirrhosis group when compared with the hospital control group (p < 0.001); in HBsAg-veCAC and renal unit patients there was no significant difference from alcoholic cirrhosis patients.

The high prevalence of serum antibodies to hepatitis B virus in alcoholic cirrhosis as well as in renal unit patients has been confirmed in this survey in the Milan area.

Microbiological safety tests

In a recent paper “Guidelines for the evaluation of instruments used in haematology laboratories” the authors recommend that “instruments should be tested for the production during normal operations of potentially infected droplets or aerosol”. In describing how this should be done they state correctly that the most sensitive method requires the use of a biological tracer such as a bacterial spore and the services of an experienced microbiologist. They then go on to say that an estimate of the microbiological hazard can be obtained by using a fluorescent chemical marker and examining sheets of filter paper placed around the equipment under ultraviolet light for evidence of contamination. There is an implication that this procedure is an adequate substitute for the use of a biological tracer to assess any microbiological hazard that might arise from the equipment being tested. This is a dangerous assumption.

Work carried out in this laboratory to assess the sensitivity of various tracer materials added to human serum showed that microbiological challenge materials, normally used at a concentration of 1 x 10⁶ cells/ml could be detected when completely negative results were found using 1% (wt/vol) sodium fluorescein. In these tests a sensitive fluorimeter (Locarte Co, London) was used to measure fluorescence. The lower limit for detection of the biological tracers was 2500 times smaller than for the fluorescein solution. In a comparison of a spore tracer using settle plates, and sodium fluorescein and filter paper discs of a comparable area, up to 100 bacterial colonies were present on the settle plates: the filter papers were uniformly negative when examined under ultraviolet light. There are numerous examples of similar failure to detect contamination with a fluorescent marker when the use of a microbiological tracer showed heavy contamination.

When we consider the hazard from small airborne particles in the size range likely to be inhaled and retained in the lungs, the situation is a good deal worse. The small particles have a low settling rate even in still air so relatively few are likely to be deposited on filter paper surrounding the equipment. Any that do settle will probably be too small to visualise by eye when the paper is examined under ultraviolet light. The collection of small airborne particles calls for the use of efficient air sampling equipment such as that used in this laboratory.

As there is now considerable interest in drawing up international standards by bodies such as the European Committee for Clinical Laboratory Standards (ECCLS) and the International Standards Organisation (ISO) it is likely that papers such as that of Shipton, England and Kennedy¹ will be used in formulating new standards. For this reason it is important that it should be clearly stated that the use of fluorescent markers, while useful for rapidly detecting gross contamination on surfaces, should not be relied on for a proper assessment of microbiological hazards from equipment or laboratory techniques.

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References

Microbiological safety tests.

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