FALSE POSITIVE SEROLOGICAL REACTIONS FOR SYphilIS IN LEPROSY

BY

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It was proposed at the serological laboratory for the Ceylon Army Command to study the incidence of false positive serological reactions for syphilis given by sera from cases of leprosy. This inquiry, however, had to be closed prematurely because of early demobilization of the unit. As it has not been possible for the writer to record further observations, the available data is tabulated below. Sixty-four specimens of blood from clinically non-syphilitic lepers were supplied by the superintendent of the leprosy hospital at Hendala, Ceylon.

Comment

The high incidence of false positive Wassermann and/or Kahn tests in this series of 64 lepers, as shown in Table I (overleaf), needs no comment as the

<table>
<thead>
<tr>
<th>Disease</th>
<th>Total no. of cases</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>20</th>
<th>40</th>
<th>80</th>
<th>120</th>
<th>160</th>
<th>240</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria</td>
<td>12</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Small-pox vaccination</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Eosinophilia</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Leprosy</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

* The Kahn units in any serum that was positive on dilution were determined according to the formula $S = 4D$, where $S$ was the serum titre in terms of Kahn units and $D$ was the highest dilution ratio giving a 4 plus reaction. This was slightly different from the original method but was adopted by the U.S. Army with Kahn's approval as per Army Pathology laboratory service, current notes, No. 13, October, 1944.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Total no. of cases</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>20</th>
<th>40</th>
<th>80</th>
<th>120</th>
<th>160</th>
<th>200</th>
<th>240 or above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria</td>
<td>12</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Eosinophilia</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Small-pox vaccination</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Leprosy</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>
occurrence of this has been recognized by most lepro-
logists. It has also been generally acknowledged that
the cutaneous type of the disease gives rise to false
positive reactions much more often than the neural
type. The Kahn verification test (the triple quanti-
tative technique described by Kahn (1944)) was performed
in ten cases with a positive standard Kahn test.
Seven out of these ten showed the false positive type
of reaction; the other three revealed a combination
of false positive and laetic types of reactions. The
quantitative titres with the serial dilutions of sera
with 0·9 per cent. saline varied from 4 to 240 units as
shown in Table II. Seven out of these cases showed
titres of 40 or more. This was unlike the low titres
usually observed in sera showing false positive
reactions in malaria, small-pox vaccinations, and
eosinophilia as shown in Table II and described
elsewhere by the writer (1947, 1948) in detail.

The quantitative titres with the serial dilutions of
sera with distilled water were also much higher than
were observed in other conditions exhibiting false
positive reactions, as shown in Table III.

During work with sera from malaria, eosinophilia,
and small-pox vaccinations, it was found that false
positive reactions in these diseases are usually associ-
ated with low titres (4 Kahn units or less). This
however, has not been so with leprosy, in which
higher titres have been met with.

Summary

Results of Wassermann and Kahn tests in sixty-
four cases of leprosy have been tabulated. Kahn
verification tests were performed in ten of these
sixty-four cases. The quantitative titres with the
serial dilutions of sera with 0·9 per cent. saline and
distilled water respectively were found to show
comparatively higher than those observed in sera showing
false positive reactions in malaria, small-pox
vaccination, and eosinophilia.

I take this opportunity to thank Dr. D. S. De Simon,
Medical Superintendent, Leprosy Hospital, Hendala,
Ceylon, the medical officers attached to the hospital,
and Sergeant Jansen, Ceylon Medical Corps, without
whose co-operation it would not have been possible to
take up this inquiry.

References

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