LETTER TO THE EDITOR

INTRADERMAL B.C.G. VACCINATION BY DERMO-JET

Sir—A successful trial of the Dermo-jet injector versus the conventional intradermal method of giving B.C.G. vaccine to schoolchildren in B.A.O.R. was described by Power (1967). A further small trial using a similar angle-headed type of Dermo-jet and similar technique has been carried out in Hong Kong.

From an initial panel of approximately 300 school children aged between 11-17 years, 200 who were negative to the standard Heaf test were offered B.C.G. vaccination. Those accepting were vaccinated by the intradermal injection of 0.01 ml of freeze-dried B.C.G. (Glaxo) vaccine or by one shot of the same batch of vaccine administered by Dermo-jet. Ten T.U. PPD Mantoux tuberculin-testing was carried out exactly eight weeks after vaccination and the results read exactly 72 hours later. The size and type of the local vaccination lesion were measured by taking the mean of two diameters of induration. The recorder did not know which method of vaccination had been used. Only 103 children completed the trial.

The size of local B.C.G. vaccination lesions and the results of subsequent Mantoux testing are shown in Tables I and II respectively. Two Dermo-jets were used. The second instrument was found to be defective after 15 injections, and was then put aside.

Table I
Local reaction to vaccination

<table>
<thead>
<tr>
<th>Batch number</th>
<th>Size of vaccination lesion</th>
<th>Intradermal group</th>
<th>Jet injector group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number of children</td>
<td>Mean size (mm)</td>
</tr>
<tr>
<td>Glaxo 808 G</td>
<td></td>
<td>52</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Table II
Results of tuberculin—testing with 10 T.U. PPD

<table>
<thead>
<tr>
<th>Batch number</th>
<th>Results of mantoux test (10 T.U. PPD)</th>
<th>Intradermal group</th>
<th>Jet injector group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number of children</td>
<td>Per cent positive</td>
</tr>
<tr>
<td>059 Nov 1965</td>
<td></td>
<td>52</td>
<td>98.1</td>
</tr>
</tbody>
</table>

The trial results in general compare well with those achieved in B.A.O.R. particularly as regards the size of B.C.G. vaccination lesions. However, the average size of the Mantoux reaction was much smaller both in the intradermal and jet injector groups. The difference suggests variation in the potency of PPD or in techniques in measurement of the size of the Mantoux reaction. Also the failure rate by jet injector was higher in B.A.O.R. However, of the 7 failures recorded (i.e. negative to 10 T.U. Mantoux reaction,) 4 occurred using the defective Dermo-Jet. All B.C.G. lesions healed well and there were only two children with persistently discharging ulcers.
The results of this small trial support the findings of other investigations (Griffiths, Davitt, Brindle and Holme, 1965, Power, 1967). The main faults of this type of Dermo-Jet are mechanical failure and inaccuracy of dose. Improved instruments have recently become available which may overcome those faults, and these should be used in future trials. Power (1967) suggested also that the Dermo-Jet should be used for other immunisation procedures such as measles, yellow fever and cholera vaccinations. Cooper, Morley, Weeks and Beale (1966) proved the value of administering measles vaccine by Dermo-Jet both in terms of antibody response and lack of complications. This would suggest the more extensive use of the Dermo-Jet in military practice.

I am, etc.,

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REFERENCES