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INDUCTION OF ANTITYPHOID CELL MEDIATED IMMUNITY BY TAB VACCINE

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The efficacy of current TAB vaccination schedules in complete protection against typhoid is now in doubt. While the role of antityphoid antibodies in protection and recovery from typhoid has also been queried, Cell Mediated Immune Responses (CMIR) are now thought to be of importance in antityphoid immunity.

The CMIR (using the Leucocyte Migration Inhibition Test) and the Humoral Immune Response (HIR, using the Widal test) have been investigated in two groups of healthy adult volunteers before and 6 weeks after intradermal (id) or subcutaneous (sc) immunisation with a heat killed, tricresol preserved TAB vaccine, with special reference to the possibility that the id route evokes greater CMIR than the sc route.

36.8% of 19 volunteers vaccinated by the id route showed a CMIR, compared with 31.3% of 16 sc vaccinated volunteers using the same batch of vaccine over a 6 month period. While the overall difference was not significant ($p > 0.5$) it appeared that the id vaccinated volunteers tested earlier in the trial showed a greater incidence of CMIR positivity, although as the trial progressed, the difference became less marked. The H and O antibody titres following id vaccination did not show a corresponding decline, suggesting that the CMIR to *S. typhi* was induced by a labile antigen(s) which loses its potency on storage of the vaccine.

A further 21 volunteers were vaccinated with a fresh batch of vaccine over a 1 month period. 57% id vaccinated and 50% of sc vaccinated volunteers developed CMIR. This difference too was not significant.

Post immunisation anergy was seen with id and sc immunised volunteers but was more marked with the sc vaccinated group. Such anergy may be partly responsible for provocation typhoid.

Trials on a larger number of subjects with higher doses of vaccine would be needed to confirm the superiority of id TAB in inducing CMIR; the total dose of id vaccine used in our trials was one fifth of the sc dose and it is possible that higher id doses may result in a greater CMIR.

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