

AUTHOR	THEVANESAM, V
ORIGINAL TITLE	A Re-assessment of the bacteriological clinical and immunological features of typhoid in SriLanka
DEGREE	DM
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INSTITUTE	University of Peradeniya
LOCATION	UP(MED)
MAIN HEADING	TYPHOID FEVER
ABSTRACT	<p>Typhoid fever, caused by <i>Salmonella typhi</i>, is endemic in many parts of the technologically underdeveloped world including Sri Lanka; it results in high morbidity with a mortality of 2 - 3per cent. The diagnosis of typhoid depends on the recognition of its clinical features, serological tests and definitively, on the isolation of <i>Salmonella typhi</i> from body fluids or tissues. A change in the clinical presentation of typhoid has recently been reported. This study of the clinical features in patients with bacteriologically proven typhoid showed that a mild febrile illness with headache, intestinal symptoms (especially diarrhoea)occurred frequently. Rigors were not uncommon and should therefore not exclude a diagnosis of typhoid. Hepatosplenomegaly were the only physical signs which were detected with any constancy. Unusual presentations were not seen in our patients. The clinical picture of typhoid was however not sufficiently distinctive to permit of a definite clinical diagnosis. Complications were uncommon. Isolation of <i>Salmonella typhi</i> from patients' blood by both clot and whole blood culture gave comparable results. Isolation rates from blood and faeces in patients with a tentative diagnosis of typhoid (on clinical features and serological reactions) were low. Strains isolated from our cases confirmed with the typical morphological, cultural, biochemical and antigenic properties described for the species. Fifty percent of the Vi + strains were of phage type E1 with approximately 25per cent of Vi or with degraded Vi, suggesting that phage typing would not be of much value in epidemiological studies. All the strains were sensitive to chloramphenicol by the disc diffusion method, with MIC values in the tube dilution tests ranging from 2.5 to 10ug/ ml,(values reported from other studies lie between 0.75 5ug/ml). The serological diagnosis of typhoid is useful in the diagnosis of typhoid fever particularly in countries with inadequate facilities for the isolation of <i>Salmonella typhi</i>. A study of the 'O' and 'H' antibody titres in patients with bacteriologically proven typhoid and in control subjects (healthy volunteers and patients with non-typhoidal illnesses) showed that antibody titres are significantly higher in patients with typhoid. 'O' antibody titres of over 1:240 could be used with 92per cent confidence as a diagnostic criterion of typhoid if either blood culture is either not available or negative. The 'H' antibody titres were less helpful, false negative results having been obtained in approximately 30i.Of patients. Basal antibody titres were found to vary</p>

considerably between the healthy volunteers, normal blood donors and conservancy labourers although these subjects were from the same geographical area. A study of the Cell Mediated Immune Response (CMIR) to Salmonella typhi antigens in patients with typhoid fever was done using the leucocyte migration inhibition test and a crude extract of antigens from Salmonella typhi. An antityphoid CMIR developed a significant number of patients with bacteriologically proven typhoid fever. The duration of the clinical illness and occurrence of complications could not be correlated with the development or absence of a CMIR. There was also no correlation between the 'O', 'H' and 'Vi' agglutinin titres and the development of an antityphoid CMIR in the typhoid patients. Two groups of control subjects (healthy volunteers from the general population and conservancy labourers) were also studied concurrently with the patients for their humoral and Cell Mediated Immune Response to Salmonella typhi. Patients with typhoid had a significantly higher incidence of an antityphoid CMIR than healthy volunteers but no difference was found between the positivity rate in patients and in conservancy labourers, probably on account of the latter's occupational exposure to human faeces which may have contained Salmonella typhi. The Humoral Immune Response (HIR) and CMIR were also studied in two groups of normal volunteers (members of the general public and conservancy labourers who had no previous history of typhoid or antityphoid vaccination), before and after subcutaneous (SC) and intradermal (ID) immunisation with heat killed - tricresol preserved TAB vaccine to determine the efficiency of the vaccine in inducing an antityphoid CMIR. In the first study, a significant antityphoid CMIR was demonstrable in both SC and ID vaccinated subjects though there was no significant difference between the two groups. The liability of the CMIR inducing antigen(s) was suggested by the reduction of the rate of CMIR induction with ageing of the vaccine. In the second study done with a fresh vaccine over a shorter period of time, the development of a significant antityphoid CMIR was confirmed. Post immunisation energy in the Cell Mediated Immune Response was seen after both SC and ID immunisation, in both studies and may partly explain the development of provocation typhoid.