

Immunodiagnosis of Parasitic Infections

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OBJECTIVE: To employ commercially prepared antigens in the SAFA test and the IHA test for screening patients with suspected amebiasis, filariasis or malaria to evaluate the test systems and to detect candidate patients for other studies.

DESCRIPTION: Under contract with the R & D Command, Parke-Davis and Co. has produced two antigens which have been standardized in preparation and in the resulting nitrogen content per milliliter of fluid. One has been prepared from axenic cultures of E. histolytic, the other from D. immitis. The antigens may be used in both the SAFA and IHA test systems. An antigen has been prepared at WRAIR intended for use in the diagnosis of P. falciparum infections. It is intended to test these antigens for specificity and sensitivity with sera from a population with a broad spectrum of infection and immunity, and to provide a reference diagnostic capability in support of other U.S. installations in SE Asia.

PROGRESS: A disparity in test results has been experienced using the Parke-Davis antigen for the diagnosis of amebiasis by the SAFA test as compared with results obtained from the IHA. Positive control sera obtained from Taipei provide reproducible and dependable results with the IHA test, but do not correlate with the SAFA procedure's results, the latter showing little or no reaction at the recommended dilution (1:20). A loss of potency in this test system may be due to a storage factor. The antigen has been useful in the IHA system to detect amebic infections in patients in Bangkok.

Sera from the 9th Medical Laboratory, RVN, which were positive by the CF test using the Parke-Davis antigen were tested by the SAFA and the IHA systems and only 5 of 39 reacted with the former method and only 11 of the 39 with the latter.

Screening of 1339 sera from troops arriving in Vietnam from CONUS detected 60 which reacted significantly with the IHA test. The SAFA has yet to be performed. Of 100 sera from cases of hepatitis in Vietnam, none reacted with the IHA or SAFA.

The SAFA test has been employed routinely as a test for filariasis. The test was found to be adequately sensitive in the studies of canine heartworm in gibbons (elsewhere, this report). Of the 1339 sera from troops arriving from CONUS who have been studied so far, 6 were found to give significant reactions. Of 638 troops departing RVN for CONUS, 3 were found to give positive reactions for filariasis. The sera from 100 hepatitis patients failed to react with the filarial antigen.

No antigen for testing for malaria by the SAFA technic has been received. Both arriving and departing personnel from Vietnam will be studied for malarial antibody by this method in the next report period.

An attempt to obtain a reactive fraction of larval and adult gnathostomes has been initiated, and a weakly reactive fraction has been obtained. The requirement for such an antigen is critical in some areas of Thailand, and this effort will be actively pursued.

SUMMARY: The SAFA test has been found to be relatively insensitive in the diagnosis of amebiasis, whereas the IHA using the same antigen has been satisfactory. The SAFA has provided satisfactory results in the monitoring of filarial infections of gibbons. No immunodiagnostic studies have been initiated in malaria.