

Indirect Fluorescent Rabies Virus Antibody Test

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OBJECTIVE: The indirect fluorescent rabies virus antibody test is a valuable tool for rapidly determining the antibody response to immunization with rabies vaccine. In the past, several unsuccessful attempts have been made to correlate the titers of antibody as detected by this test and by the standard mouse neutralization test using individual sera from patients receiving post-exposure antirabies treatment. The objective of the current study is to repeat previous effort and expand on them by studying comparative titer responses in Peace Corps volunteers, all of whom receive pre-exposure antirabies immunizations. In addition to the comparative titer aspects of the study, this is an unparalleled opportunity to study the response to post-exposure treatment following pre-exposure antirabies immunization since 15-25% of the volunteers require such treatment during their tour in Thailand.

DESCRIPTION: The standard IFRA test is used to examine all human sera. Single serum samples from patients receiving post-exposure antirabies immunizations are coded and titrated by both the IFRA technique and the mouse neutralization test for rabies virus antibody. In the recently initiated study, serum is collected from each newly arrived Peace Corps volunteer, coded and tested for an IFRA titer. Additional sera are collected and tested throughout the pre-exposure course of immunizations. If and when a volunteer is exposed to rabies virus, a second series of sera specimens is collected for IFRA titer determination. Mouse neutralization tests are performed for comparative purposes using each of the sera specimens from randomly selected volunteers.

PROGRESS: During the reporting period a total of 324 sera were submitted and examined for antirabies titers by the IFRA technique. Of these, 54 were selected for IFRA-Mouse Neutralization comparisons. A quantitative relationship could not be demonstrated between the titers determined by the two methods. These specimens were, for the most part, collected from different individuals at different intervals following immunization. The current study provides sequential sera at prescribed intervals and permits a comparison of antibody appearance and development as well as quantity. The first group of 85 volunteers arrived in Thailand during the last month of the reporting period.

SUMMARY: Although the IFRA test continues to be a valuable tool for evaluating antibody response in man to rabies vaccination, efforts to compare results of this test with the results of the more widely accepted mouse neutralization test have failed. A new study was initiated using sequential sera specimens from Peace Corps volunteers in order to compare the time of appearance, the course of development, and the titer of the antibody detected by both the IFRA test and the mouse inoculation test. In addition, the antibody response to post-exposure treatment is being studied.

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