

Serologic Effect of Duck Embryo Rabies Vaccine

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OBJECTIVE: This study is to determine the human serological response to duck embryo (DE) rabies vaccine given prior to exposure and after exposure to individuals who have and have not received pre-exposure immunizations, as well as to compare the serologic response to DE rabies vaccine as detected by the indirect fluorescent antibody (IFRA) test and the mouse neutralization (MI) test.

DESCRIPTION: Sera are collected from Peace Corps Volunteers receiving pre-exposure anti-rabies immunizations with DE vaccine. Sera are also collected from U.S. military personnel and Thai nationals during and after administration of post-exposure rabies immunizations with DE vaccine. Sera are also collected from U.S. military personnel and Thai nationals during and after administration of post-exposure anti-rabies immunizations with DE vaccine. Traditionally, approximately 25 percent of the Peace Corps Volunteers in country receive post-exposure treatment during their tour. Sera are collected from these individuals during and after treatment. The anti-rabies titers are determined by the IFRA test. Aliquots of sera are frozen for future use in MI test. Sera were collected from 56 Peace Corps Volunteers, 22 U.S. military personnel and 28 Thai nationals. During the third quarter of the reporting years, it was discovered that the reproducibility of the IFRA test results was not satisfactory. Therefore, all results were discarded and efforts to improve the test are in progress. Two sources of error have been identified. Slides with infected mouse brain impression smears cannot be stored in the frozen state after fixation for more than two weeks without resulting in lower titers. Resuspended anti-human globulin conjugated with fluorescein isothiocyanate has a shelf life in the refrigerator of less than six days. The use of new smears and freshly resuspended conjugate has eliminated the errors in reproducibility of titers determined on a single day. However, titers of a serum specimen determined on different days still occasionally vary by as much as two dilutions, thus invalidating the entire second test. Sera continues to be collected and frozen but progress on determining titers has been halted until the test has been modified to produce more satisfactory results.

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