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Animal Bites and Rabies Risk: A Guide for Health Professionals

RPEP Overview

The rabies RPEP regimen involves administration of human rabies immune globulin (HRIG), which is given only once, and a series of four 1.0 mL rabies vaccinations. HRIG and the first vaccination are given on the first day of treatment (designated day 0) and three additional rabies vaccinations are given on days 3, 7, and 14.

Immunocompromised persons receive a fifth vaccination on day 28, and should be tested for seroconversion 7 to 14 days following completion of the PEP regimen.

Patients who have previously received either pre or post-exposure rabies prophylaxis should receive only two rabies vaccine boosters following an exposure, given on days 0 and 3. **Patients who have been previously vaccinated SHOULD NOT receive HRIG**, even if the pre or post-exposure rabies prophylaxis regimen was given many years prior.

Human Rabies Immune Globulin (HRIG)

Human Rabies Immune Globulin (HRIG) provides rapid passive immune protection with a half life of approximately 21 days. It is given only once, on the first day of the PEP regimen (designated day 0). No more than the recommended dosage of HRIG should be given because excessive HRIG can partially suppress active production of antibody. If the HRIG was not administered on day 0, it may be administered up to and including day 7 of the PEP regimen. Beyond day 7, HRIG is not indicated, as the patient's antibody response to the vaccine occurs in that timeframe.

- The recommended dosage of HRIG is 20 IU/kg body weight for all ages including children.
- Infiltrate as much of the HRIG as possible into and around the bite wound.
- Administer the remaining HRIG intramuscularly (IM) at a site distant from the first vaccination site, generally in the quadriceps or deltoids.
- If there is no wound, such as following a bat-in-the-bedroom exposure, then HRIG may be given in the deltoids, quadriceps, or gluteals.

Rabies vaccine

A 1.0 mL dose of rabies vaccine is given IM in the deltoid area of adults or the anterolateral thigh of young children on days 0, 3, 7, and 14 of the rabies PEP regimen. The first vaccination

is given concurrently with the HRIG at a site distant from the HRIG. An additional fifth dose of rabies vaccine is given on day 28 to immunocompromised patients. Rabies vaccine must **NOT** be given in the gluteals due to the possibility of poor absorption from that site and lower neutralizing antibody titers.

Two inactivated, cell culture rabies vaccines are currently available in the United States: human diploid cell vaccine (HDCV) or purified chick embryo cell vaccine (PCEC). Both are considered equally safe and efficacious. It is recommended that a vaccine series be initiated and completed with the same vaccine product; however, decreased efficacy or increased frequency of adverse reactions have not been documented when the series is initiated with one vaccine product and completed with another. The rabies vaccine series induces an active immune response that requires 7 to 10 days to develop and persists for many years.

Previously vaccinated persons

Previously vaccinated individuals are those who have completed a pre-exposure or post-exposure regimen of human diploid cell vaccine (HDCV) and purified chick embryo cell vaccine (PCEC), or who have received a different vaccine outside of the U.S. and have a documented rabies antibody titer of ≥1:5 by the rapid fluorescent focus inhibition test (RFFIT). These individuals are given two 1.0 mL doses of vaccine intramuscularly in the deltoid area on days 0 and 3 following an exposure. **No HRIG is administered.** Please consult with MDH epidemiologists if the patient's previous pre- or post-exposure vaccination regimen was administered more than 20 years prior to the current exposure.

Deviations from recommended PEP vaccination schedule

Once the decision to initiate rabies PEP has been made, it should be started as soon as possible. Every effort should be made to adhere to the recommended PEP regimen schedule, especially the first two days of treatment, days 0 and 3. After day 3 of the regimen, deviations of a few days are acceptable. For most minor delays or interruptions, the vaccination schedule can be shifted and resumed as though the patient were on schedule. For example, if a patient misses the dose scheduled for day 7 and presents for vaccination on day 10, the day 7 dose should be administered that day, and the final dose given one week later on day 17. Please consult MDH epidemiologists for advice when substantial deviations from the recommended schedule have occurred.