Arkansas Department of Health

4815 West Markham Street ● Little Rock, Arkansas 72205-3867 ● Telephone (501) 661-2000

Procedures for post-exposure rabies treatment:

Administration of rabies post-exposure prophylaxis is a medical urgency, not a medical emergency. Prior to providing PEP, a risk assessment should be performed to ensure PEP is indicated. Because PEP can cause adverse reactions, when possible, alternative measures, such as animal quarantine or testing, should be utilized before initiating PEP.

The decision to administer PEP should be based on the following criteria:

1. Nature of the exposure
2. Species of animal involved in the exposure
3. Availability of the animal for quarantine or rabies testing

When a documented or likely exposure has been confirmed, post-exposure prophylaxis should be administered regardless of the length (days, weeks, months) of the delay since the exposure. Generally, delays of several days are acceptable while waiting for an animal to be located and tested, up to five days pending search for a healthy-appearing dog or cat, or up to 10 days if a healthy dog or cat is being confined and observed for signs of rabies.

Due to the complexity of the epidemiology and pathogenesis of t rabies, the Arkansas Department of Health is available to provide consultation for risk assessment. Ultimately, the decision to provide post-exposure prophylaxis rests with the patient and his or her physician.

Post-exposure prophylaxis

Post-exposure prophylaxis, which has been shown to be uniformly effective when appropriately administered, consists of:

1. wound treatment,
2. local infiltration of rabies immune globulin (RIG),
3. and vaccination,

WOUND TREATMENT

The most important initial procedure following a possible rabies exposure is thorough wound cleansing and management. In animal studies, thorough wound cleansing alone without other post-exposure prophylaxis has been shown to markedly reduce the likelihood of rabies.

- ***Thorough wound cleansing*** using water and soap. If available, a virucidal such as diluted providone-iodine solution should be used.
- Determine if the patient needs a booster dose of tetanus.
- Antibiotics and wound closure should be considered on a case-by-case basis.

HUMAN RABIES IMMUNE GLOBULIN (HRIG)

For persons who have never been vaccinated against rabies previously, postexposure anti-rabies vaccination should always include administration of both passive antibody and vaccine. Persons who have been previously vaccinated or are receiving pre-exposure vaccination for rabies should receive only vaccine. The combination of human rabies immune globulin (HRIG) and vaccine is recommended for both bite and non-bite exposures, regardless of the interval between exposure and initiation of treatment.

- HRIG is administered only ONCE, on the first day of treatment. Administer Human Rabies Immune Globulin (HRIG—product name Imogam® Rabies-HT or HyperRAB^{TM} S/D) at 20 IU/kg body weight or 1 ml. for each 16 ½ pounds of body weight. EXACT DOSAGE SHOULD BE GIVEN.
    - Because RIG might partially suppress active production of antibody, no more than the recommended dose should be given.
- If possible, the full dose should be infiltrated around any wound(s) and any remaining volume should be administered IM at an anatomical site distant from vaccine administration. The anterolateral thigh should be considered to preserve the deltoids for vaccine administration.
- Also, RIG should not be administered in the same syringe as vaccine.
- RIG should not be given in the gluteal muscle.

RABIES VACCINE

Also on the first day of treatment, administer one (1) dose of the Human Diploid Cell Vaccine (HDCV) Imovax® Rabies or Purified Chick Embryo Cell Vaccine (PCEC) RabAvert® .

- For adults, the vaccination should always be administered intramuscularly in the deltoid area (arm).
- For children, the anterolateral aspect of the thigh is also acceptable.
- The gluteal area should never be used for rabies vaccine injections because observations suggest administration in this area results in lower neutralizing antibody titers.
    - If HRIG was administered in the arm or hand, use the opposite arm for the vaccine.

Every attempt should be made to adhere to the recommended vaccination schedules. Once vaccination is initiated, delays of a few days for individual doses are unimportant, but the effect of longer lapses is unknown. For most minor deviations from the schedule, vaccination can be resumed as though the patient were on schedule. When substantial deviations from the schedule occur, immune status should be assessed by performing serologic testing 7 – 14 days after administration of the final dose in the series.

Per ACIP guidance, the Rapid Fluorescent Focus Inhibition Test (RFFIT) gives an indicator of adaptive immune response to rabies vaccination. Complete virus neutralization at a 1:5 serum dilution by the RFFIT is an indicator of an adequate immune response.

RABIES POST EXPOSURE PROPHYLAXIS SCHEDULE:

Day 0 (first day)	**Human Rabies Immune Globulin (HRIG) -** Dose varies by weight and is usually several shots given around wound and IM. Not in gluteal muscle.	**Rabies Vaccine** 1 ML IM in deltoid muscle of arm
Day 3		**Rabies Vaccine** 1 ML IM in deltoid
Day 7		**Rabies Vaccine** 1 ML IM in deltoid
Day 14		**Rabies Vaccine** 1 ML IM in deltoid

ADVERSE REACTIONS:

Rabies Vaccine (HDCV or PCECV):

Human diploid cell vaccine (HDCV) or purified chick embryo cell culture vaccine (PCECV) have similar profiles. Serious reactions following rabies vaccine administration are very rare.

- Local reactions (most common – 11% - 90%): pain, redness, swelling, itching, and/or induration at the injection site
- Systemic reactions (less common – 5% - 56%): fever, headache, dizziness, myalgia, weakness, and gastrointestinal symptoms
- Hypersensitivity reactions (rare – 6% of booster doses): urticaria, pruritic rash, and angioedema within 1 to 14 days post-injection
- Neurologic adverse events (very rare): resemble Guillain-Barré syndrome – have complete recovery

Rabies Immune Globulin (Human):

HRIG has a good safety profile – no immediate hypersensitivity reactions or immune-complex-like diseases are reported. Additionally, there is no evidence of other diseases being transmitted by commercially available HRIG in the United States.

- Local reactions (50% - 100%): pain at injection site
- Systemic reactions (75%): low-grade fever and headache
- Although not reported specifically for HRIG, angioneurotic edema, nephritic syndrome, and anaphylaxis have been reported after receipt of immune globulin. These reactions occur so rarely, that a causal relationship between immune globulin and these reactions has not been established.

Reporting Adverse Reactions
All clinically significant adverse events occurring following administration of rabies biologics should be reported to the Vaccine Adverse Event Reporting System (VAERS), even if causal relation to vaccination is not certain. Although VAERS is subject to limitations common to passive surveillance systems, including underreporting and reporting bias, it is a valuable tool for characterizing the safety profile of vaccines and identifying risk factors for rare serious adverse reactions to vaccines.

VAERS reporting forms and information are available electronically (https://vaers.hhs.gov/index) or by telephone via a 24-hour toll-free telephone number, 800-822-7967. Web-based reporting is available, and providers are encouraged to report electronically to promote better timeliness and quality of safety data.

Clinically significant adverse events following HRIG administration should be reported to the Food and Drug Administration's MedWatch. Reports can be submitted electronically to http://www.fda.gov/MedWatch.

For further information, feel free to call
Arkansas Public Health Veterinarian
Office: (501) 280-4136