

# RABIES WATCH

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## Rabies Postexposure Prophylaxis in the Emergency Department: Top 10 Tips to Keep in Mind



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We spoke with Fredrick Abrahamian, DO, FACEP, an expert on infectious diseases including rabies and a Clinical Professor of Medicine at the David Geffen School of Medicine at UCLA, as well as the Director of Education at the Department of Emergency Medicine at the Olive View-UCLA Medical Center in Los Angeles, California. Below, Dr Abrahamian provides us with a top 10 list of tips, tricks, and information that emergency department personnel should keep top of mind about rabies and its prevention.

- 1 In the United States, rabies is most commonly reported in animals such as **raccoons, bats, skunks, and foxes**.<sup>1</sup> The majority of human cases are associated with a bat rabies virus variant<sup>1</sup>
- 2 **Bites from bats** may go unnoticed because of bats' small, thin, and sharp teeth<sup>2</sup>
- 3 Rabies postexposure prophylaxis (PEP) includes administration of **rabies vaccine and, depending on the patient's immunization history, human rabies immune globulin (HRIG)**<sup>3</sup>
- 4 Rabies vaccine provides **active immunity**; HRIG provides **passive immunity**<sup>4</sup>
- 5 Pregnant women **may** receive rabies PEP<sup>5</sup>
- 6 Adherence to the dosing regimen (20 IU/kg) for HRIG is important, as administration of **higher doses of HRIG may interfere with active production of rabies virus antibody**; if not given during the initial visit, HRIG can be given within 7 days of the first dose of rabies vaccine<sup>3</sup>
- 7 Immunocompetent individuals who have not been previously immunized should receive **rabies vaccine** on days 0, 3, 7, and 14. Immunocompromised patients should receive a fifth dose on day 28. Previously vaccinated patients should receive the vaccine only on days 0 and 3<sup>3</sup>

*(Continued)*

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- 8 In adults and older children, rabies vaccine should be administered **intramuscularly in the deltoid area**<sup>3</sup>
- 9 In young children, the preferred site of injection for rabies vaccine is **the outer aspect of the thigh**<sup>3</sup>
- 10 **Rabies vaccine should not be administered in the gluteal area** as administration of vaccine in this region results in lower neutralizing antibody titers.<sup>3</sup> **HRIG should not be administered in the gluteal area** because of the risk of injury to the sciatic nerve<sup>6</sup>

HyperRAB S/D is made from human plasma. Plasma products carry a risk of transmitting infectious agents, such as viruses, and theoretically, the Creutzfeldt-Jakob disease (CJD) agent, despite steps designed to reduce this risk.

Soreness at the site of injection and mild temperature elevations may be observed at times. Sensitization to repeated injections has occurred occasionally in immunoglobulin-deficient patients. Angioneurotic edema, skin rash, nephrotic syndrome, and anaphylactic shock have rarely been reported after intramuscular injection so that a causal relationship between immunoglobulin and these reactions is not clear.

### **Pregnancy Category C**

Animal reproduction studies have not been conducted with HyperRAB S/D. It is also not known whether HyperRAB S/D can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. HyperRAB S/D should be given to a pregnant woman only if clearly needed.

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### **IMPORTANT SAFETY INFORMATION**

Rabies vaccine and HyperRAB® S/D (rabies immune globulin [human]) should be given to all persons suspected of exposure to rabies with one exception: persons who have been previously immunized with rabies vaccine and have a confirmed adequate rabies antibody titer should receive only vaccine. HyperRAB S/D should be administered as promptly as possible after exposure, but can be administered up to the eighth day after the first dose of vaccine is given.

HyperRAB S/D should be given with caution to patients with a history of prior systemic allergic reactions following the administration of human immunoglobulin preparations.

The attending physician who wishes to administer HyperRAB S/D to persons with isolated immunoglobulin A (IgA) deficiency must weigh the benefits of immunization against the potential risks of hypersensitivity reactions. Such persons have increased potential for developing antibodies to IgA and could have anaphylactic reactions to subsequent administration of blood products that contain IgA.

As with all preparations administered by the intramuscular route, bleeding complications may be encountered in patients with thrombocytopenia or other bleeding disorders.

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Administration of live virus vaccines (e.g., MMR) should be deferred for approximately 3 months after rabies immune globulin (human) administration.

HyperRAB S/D is made from human plasma. Products made from human plasma may contain infectious agents, such as viruses, and, theoretically, the Creutzfeldt-Jakob disease (CJD) agent that can cause disease. There is also the possibility that unknown infectious agents may be present in such products.

**Please see full Prescribing Information for HyperRAB S/D.**

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## REFERENCES

1. Monroe BP, Yager P, Blanton J, et al. Rabies surveillance in the United States during 2014. *J Am Vet Med Assoc.* 2016;248(7):777-788. 2. Smith JS. New aspects of rabies with emphasis on epidemiology, diagnosis, and prevention of the disease in the United States. *Clin Microbiol Rev.* 1996;9(2):166-176. 3. Rupprecht CE, Briggs D, Brown CM, et al; Centers for Disease Control and Prevention (CDC). Use of a reduced [4-dose] vaccine schedule for postexposure prophylaxis to prevent human rabies: recommendations of the Advisory Committee on Immunization Practices. *MMWR Recomm Rep.* 2010;59(RR-2):1-9. 4. Manning SE, Rupprecht CE, Fishbein D, et al; Advisory Committee on Immunization Practices Centers for Disease Control and Prevention (CDC). Human rabies prevention—United States, 2008: recommendations of the Advisory Committee on Immunization Practices. *MMWR Recomm Rep.* 2008;57(RR-3):1-28. 5. Abazeed ME, Cinti S. Rabies prophylaxis for pregnant women. *Emerg Infect Dis.* 2007;13(12):1966-1967. 6. HyperRAB® S/D (rabies immune globulin [human]) Prescribing Information. Grifols.

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