RABIESWATCH

YOUR SOURCE FOR RABIES AWARENESS AND EDUCATION

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Emergency Department Nursing Perspective on Challenges With HRIG Administration

Timely and Appropriate Administration of Postexposure Prophylaxis (PEP) Is Crucial to Preventing Rabies Infection

Rabies is a deadly infectious disease that is essentially incurable if appropriate preventative measures are not taken soon after exposure.[1-3] Timely evaluation and proper administration of PEP is critically important when patients present to an emergency department (ED) with a potential rabies virus exposure.[2]

As Administrative Supervisor in his hospital's ED, Ken Stephens, RN, of Vail, Colorado, sees all kinds of critical-care cases come through his door, including potential rabies virus exposures. In addition to evaluating patients quickly and thoroughly to decide on management steps, Ken says that managing patients' needs and expectations is extremely important. This is especially true for patients who do not know much about rabies and why follow-up is so crucial.

"Most people who present in the ED after being bitten by an animal that might carry rabies are really worried. As I evaluate them and talk with them about the threat of rabies, I can judge how well they understand their situation and how likely they are to commit to PEP, including all follow-up injections. In some cases, though, when I sense a patient is not taking this seriously enough, I'll tell them directly, 'If you get rabies, you're going to die.'[a] That usually helps to clarify the issue." — Ken Stephens, RN

[a] Although rabies is essentially 100% fatal, 1 patient has recovered from rabies without PEP treatment. This patient received a controversial intensive care strategy of antiviral therapy and induced therapeutic coma. Numerous patients have subsequently failed this experimental protocol.[1,4]

As Ken notes, human rabies immune globulin (HRIG) is an integral component of PEP in previously unvaccinated patients, as outlined by experts of the United States Advisory Committee on Immunization Practices (ACIP) and the World Health Organization (WHO).[5,6]

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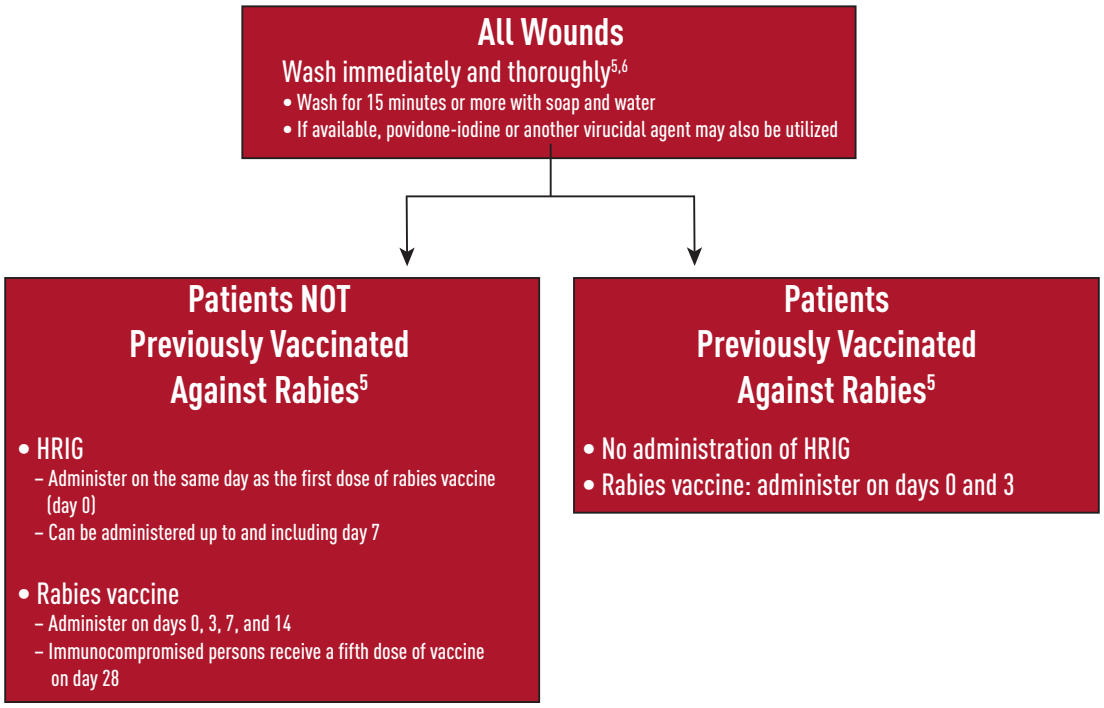
Expert Recommendations for Rabies PEP[5,6]



"We are very fortunate to have the support of our pharmacy to maintain HRIG and vaccine supplies sufficient to start PEP for a family of 5 at all times. That's partly because we're a large rural hospital that receives trauma cases and critically ill patients from a large referral area. But it also reflects that we are definitely seeing an increase in bat exposures in Colorado."— Ken Stephens, RN

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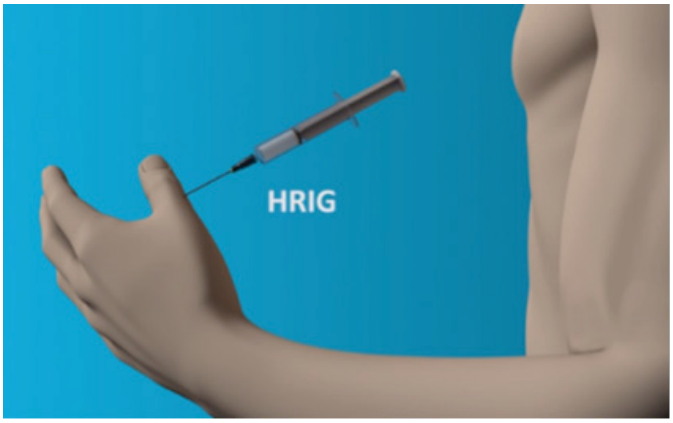
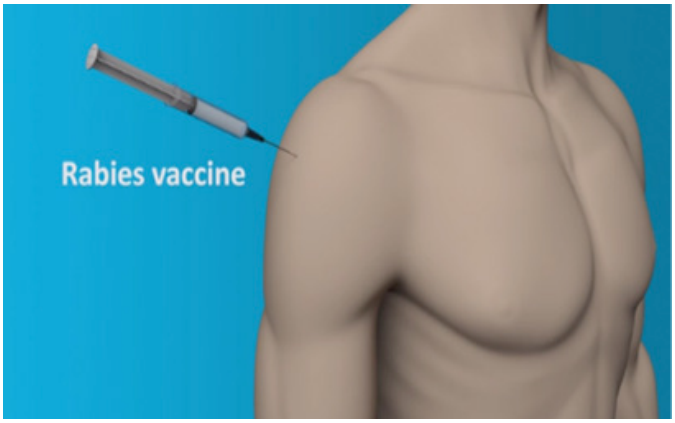
Proper HRIG Administration Technique Is Essential for Protection of Patients Not Previously Vaccinated Against Rabies

"We face an educational challenge due to seasonal changes in our physician staff. Many ED physicians who come from other areas of the country are not as familiar with rabies or PEP. We see this as an educational opportunity in the ED setting."
— Ken Stephens, RN

HRIG should be administered **directly** into and around the wound, injecting as much volume in that area as possible.[5]

- Always administer HRIG with the first of 4 rabies vaccinations in the ED[5]
- Infiltrate the full dose into and around the wound, if anatomically feasible[5]
- For small wounds such as those on fingers, toes, ears, or the face, inject as much HRIG as possible into the wound area, then administer the remainder of the dose intramuscularly at a site distant from the rabies vaccine administration site[5]
  - For example, if HRIG is injected into LEFT thumb and shoulder, the first rabies vaccine would be injected intramuscularly into the RIGHT shoulder





- Do not exceed recommended dose[5]
- HRIG can be administered up to and including day 7[5,7]
- The gluteal region should not be used as an injection site because of the risk of injury to the sciatic nerve[7]
- HRIG should never be administered in the same syringe or needle or in the same anatomical site as vaccine[5,7]

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Ken notes that administration of the full HRIG dose typically requires multiple intramuscular injections beyond the initial injection directly into and around the wound site. This is especially true with small wound sites in children and adults.

"To prepare the HRIG administration, we first calculate the patient's total required dose based on 20 IU per kilogram body weight, which is 0.133 mL per kilogram.[7] We inject as much of that HRIG dose as possible into and around the wound site. Then, we look at the volume of HRIG solution still in the syringe and divide that volume by the usual volume we can inject into any single intramuscular site—that's 1.0 to 1.25 mL in children and 2.5 mL in adults. That tells us how many total intramuscular injection sites we will need to deliver the full HRIG dose. These sites must be away from the vaccine injection site and not in the gluteal region."
— Ken Stephens, RN

Preparation for ED Discharge and Follow-Up Complete PEP

"In addition to our local, year-round population, we also have a substantial number of seasonal visitors and tourists in our area. That creates a challenge for discharge and follow-up to ensure that all of these patients have access to the 3 additional vaccine doses they need to complete the full PEP schedule we started them on."
— Ken Stephens, RN

- Schedule follow-up vaccinations on days 3, 7, and 14 at an appropriate healthcare facility[5]
  - Goal should be for all patients to receive all vaccine doses to prevent fatalities
  - Immunocompromised patients should receive a fifth vaccine dose on day 28[5]
- Educate patients and family about the risk of rabies virus infection
- Collect essential information for follow-up for additional vaccines
  - Home and work address
  - Cell phone number
  - Emergency contact
  - Name of primary care physician
- Inform patients that rabies is a **fatal disease** with **no cure**
  - Patients must return for follow-up vaccines

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.

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.

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.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

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1. Crowcroft NS, Thampi N. The prevention and management of rabies. *BMJ.* 2015;350:g7827. doi:10.1136/bmj.g7827. **2.** Bailey AM, Holder MC, Baker SN, Weant KA. Rabies prophylaxis in the emergency department. *Adv Emerg Nurs J.* 2013;35(2):110-119. **3.** 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. **4.** Nigg AJ, Walker PL. Overview, prevention, and treatment of rabies. *Pharmacotherapy.* 2009;29(10):1182-1195. **5.** 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. **6.** World Health Organization. Rabies fact sheet. http://www.who.int/mediacentre/factsheets/fs099/en/. Updated March 2017. Accessed June 23, 2017. **7.** HyperRAB® S/D (rabies immune globulin [human]) Prescribing Information. Grifols.

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For more information, go to www.rabieswatch.com