Rabies Post-Exposure Prophylaxis (PEP) with Human Rabies Immunoglobulin (HRIG) Algorithm for Adult and Pediatric Patients

Figure 1. Rabies HRIG for PEP Algorithm

1 Contact with bat includes persons who were in the same room with a bat even if a bite mark cannot be found. Examples include a sleeping person who finds a bat in the room or a bat found in a room with a previously unattended child.

2 See table 1 for vaccine post-exposure prophylaxis recommendations for patients who have previously been vaccinated.

3 All mammals have the potential to be infected with rabies. The following are considered reservoirs that may put patients at risk of transmission and infection: dogs, cats, bats, ferrets, fox, coyotes, raccoon, and skunks. Animals not considered reservoirs include rabbits, hamsters, guinea pigs, squirrels, mice or opossums.

4 If unknown, attempt to obtain further history prior to clinical decision. Animal testing should be coordinated with metro health.

5 Symptoms of the acute neurological phase include hyperactivity, agitation, hypersalivation, hydrophobia, altered mental status, autonomic stimulation, progressive paralysis, and seizures.

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Dosing and administration information
Post-exposure prophylaxis (PEP) is recommended for patients presenting with bites from possible rabies reservoirs

- PEP should be initiated as soon as possible after exposure, but appropriate assessment of the above factors should be taken into consideration prior to administration
  - CDC recommends domesticated animals be confined and observed or wild animals be euthanized and tested if able to identify rabies infection
    - PEP should be administered if animal shows signs of rabies infection during observation or animal tests positive
- The algorithm (Figure 1) is used to assess patient risk for rabies infection secondary to bite exposure
- Administer PEP if it is deemed appropriate
  - PEP includes human rabies immune globulin (HRIG) + human diploid cell vaccine (HDCV)
  - HRIG (HyperRAB®) dose: 20 units/kg (rounded to nearest 300 units for adult patients > 45 kg)
    - Pediatric dose: 20 units/kg – Rounding is acceptable if rounded dose remains within 10% of calculated dose
      - Patients < 21 kg, order the exact 20 unit/kg dose
      - Patients > 21 kg and < 45 kg, round to the nearest 150 units
  - Administration
    - Infiltrate as much HRIG as possible around the bite site
    - Administer remaining volume into deltoid (intramuscular) in opposite limb of vaccine administration – do not administer vaccine and HRIG in the same site
      - Facial bites: For lower risk animal bites (ie. dog or cat), consider avoiding HRIG administration in the face and use alternative site
  - Pediatric consideration:
    - Alternative site/remaining volume HRIG injection:
      - Age < 3 years old: anterolateral thigh or gluteus
      - Age ≥ 3 years old: deltoid, anterolateral thigh, or gluteus
      - Volume of HRIG dose may require multiple separate injections
    - HDCV (Imovax®) should be administered in all patients deemed appropriate for PEP administration
      - Patients who have previously completed a series of vaccinations receive a shorter course for re-vaccination. HRIG is NOT indicated in these patients.
      - HDCV is the formulary vaccine at UHS; other formulations include purified chick embryo cell (PCEC) or rabies vaccine adsorbed (RVA)
        - Vaccine series should be completed with same vaccine (if possible)
      - Pediatric administration
        - Site and needle size vary based on age and size of the child
        - Vaccine is not recommended to be administered in the gluteus

<table>
<thead>
<tr>
<th>Table 1. Recommended HRIG and HDCV based on patient factors</th>
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<tbody>
<tr>
<td>Vaccination Status</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Not vaccinated</td>
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<tr>
<td>Immunocompetent</td>
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<tr>
<td>Immunocompromised*</td>
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<tr>
<td>Previously vaccinated</td>
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<tr>
<td>*Immunocompromised: HIV CD4 &lt; 200, post-transplant requiring immunosuppressive therapy, corticosteroid use, recent cytotoxic chemotherapy, neutropenia (ANC &lt; 500), current antimalarial use, functional asplenia</td>
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References

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