

Dog Bites

POST-EXPOSURE PROPHYLAXIS

Wound Treatment

Should be immediate and is essential even if the person presents long after exposure

- Immediate washing and flushing with soap and water, or water alone for a minimum of 15 minutes
- If the wound is deep or in absence of running water, flush with a saline filled syringe to remove dirt and saliva. After thorough washing and drying of the wound, any one of the available antiseptics should be applied.
- Wounds should not be sutured.

Management of a patient following an animal bite

Table 15.4 Risk assessment and categorization of exposure

Category	Type of contact	Type of exposure	Recommended post-exposure prophylaxis
I	Touching or feeding of animals Licks on intact skin	None	None, if reliable case history is available
II	Nibbling of uncovered skin Minor scratches or abrasions without bleeding	Minor	Wound management Anti-rabies Vaccine
III	Single or multiple transdermal bites or scratches, licks on broken skin Contamination of mucous membrane with saliva (i.e. licks) Exposures to bats	Severe	Wound management Rabies immunoglobulin Anti-rabies vaccine

Day 0* denotes day of first vaccination, not necessarily day of bite.

Note: Administer RIG along with vaccine in all category II bites and category III bites in case of immune-compromised/immune-suppressed patients (persons on steroids chloroquine and chemotherapy for malignant diseases, and HIV/AIDS patients).

- Injection of Tetanus toxoid should be given to the un-immunized individual.

Give tetanus toxoid series at the same time according to national immunization schedule.

- To prevent sepsis in the wound, a suitable course of antibiotic (amoxicillin or doxycycline) should be given for at least 5 days.

Application of rabies vaccine and/or immunoglobulin

Rabies vaccine

Intramuscular regimen

- All intramuscular injections must be given into the deltoid region or, in small children, into the anterolateral area of the thigh muscle.
- Vaccine should never be administered in the gluteal region.

Dosage

- Tissue-culture or purified duck-embryo vaccines of potency at least 2.5 IU per single intramuscular immunizing dose should be applied according to the following schedules.

Zagreb Regimen (2-1-1)

- One dose is given in the right arm and one dose in the left arm at day 0, and one dose applied in the deltoid muscle on days 7 and 21.
- The 2-1-1 schedule induces an early antibody response and may be particularly effective when post-exposure treatment does not include administration of rabies immunoglobulin.

Essen Regimen

- One dose of the vaccine should be administered on days 0, 3, 7, 14 and 28.

Intradermal regimen

- In this regimen, (0.1ml) of rabies vaccine is administered on multiple sites in the dermis of skin.

Thai Red Cross Regimen (2-2-2-0-2)

- Injection of 0.1 ml of reconstituted vaccine is given per ID site one on each deltoid area (left and right arms), one inch above the insertion of deltoid muscle on days 0, 3, 7 and 28.
- Day 0 is the day of first dose administration of IDRV and may not be the day of rabies exposure/dog bite.

General guidelines for use of intradermal vaccination

- Intradermal injections must be administered by trained staff.
- 1ml syringe with hypodermic needle (e.g. Insulin Syringe) should be used for intradermal administration.
- Always use a new syringe for each patient.
- Reconstituted vaccines must be used as soon as possible or within 6 hours if kept at +2 to +8°C.
- Vaccine when given intradermal should raise a visible and palpable bleb in the skin. If a bleb is not raised, repeat the injection slightly away from the first one (The technique is similar to BCG inoculation).
- If the dose is inadvertently given subcutaneously or intra-muscularly or in the event of spillage, a new dose should be given intradermal in nearby site.

Rabies immunoglobulin

Immunoglobulin should be given a single dose of:

Human anti-rabies immunoglobulin (HRIG)

Dosage: 20 IU/kg (Maximum dose is 1200 IU or 4 vials)

Equine anti-rabies immunoglobulin (ERIG)

Dosage: 40 IU/kg (Maximum dose varies from 3000 to 4000 IU, depending on the preparation; check the prescriber's leaflet)

- Administer RIG dose preferably at the time of the first dose of rabies vaccine.
- If rabies vaccine is not immediately available, administer RIG dose and start the vaccine series as soon as possible.
- If RIG is not immediately available, it may be administered at any time through day 7 following the first vaccine dose.
- RIG is not necessary after day 7 since sufficient vaccine-induced rabies antibody will be present in most vaccine recipients.

Method of infiltration

- Infiltrate the calculated dose of RIG (whether HRIG or ERIG) into and around the wounds. Multiple needle injections into the wound should be avoided.

- After all wounds have been infiltrated, remaining RIG, if any, should be administered by deep intramuscular injection at an injection site distant/away from the vaccine injection site.
- If the calculated dose of the rabies immunoglobulin may not be sufficient to infiltrate all wounds, it is advisable to dilute the immunoglobulin in sterile Normal Saline 2 to 3 folds to be able to permit infiltration of all wounds.
- The total recommended dose of immunoglobulin must not be exceeded as it may suppress the antibody production by the vaccine.

Rabies Post-Exposure Prophylaxis for Immuno-compromised Persons

- In patients with compromised immune status, care of the wound is the same as with the immuno-competent individuals
- Vaccination of these individuals should be done by IM route.
- In an unvaccinated person a full course of Essen Regimen (Day 0, 3, 7, 14,28) should be used.
- In previously vaccinated persons, the regimen is the same as with the immuno-competent persons.
- Regarding RIG, it should be given to all patients with category II & III exposure if they are not vaccinated previously, HRIG should preferably be used.
- It is essential to check whether these patients achieve protective level of rabies antibody after the completed course of prophylaxis.

PRE-EXPOSURE PROPHYLAXIS

- Pre-exposure vaccination is administered as one full dose of vaccine intramuscularly or 0.1 ml intradermally on days 0, 7 and either day 21 or 28.
- It is especially recommended for the following:
 - Laboratory staff handling the rabies virus and infected material
 - Clinicians and nurses attending to human rabies cases
 - Veterinarians
 - Dog catchers
 - Wildlife wardens