

Care and Treatment Plan: Bites and Scratches – *Adult and Pediatric*

Definition

An injury or mark caused by an animal or a human being. The primary puncture wounds are caused by teeth that may also tear tissue and, in some cases, remove tissue in pieces. Wounds frequently become infected.

Registered Nurses with **Remote Nursing** Certified Practice designation (RN(C)) are authorized to manage and treat bites in adults and in children who are **one year of age and older**, dependent on the bite severity. If younger than one year or the severity of the bite dictates, the child must be referred to a physician or nurse practitioner.

If a bite has been inflicted on a child, consider child protection issues, and follow local policies for referral of children considered at risk.

Management and Intervention

Note: Remove all jewelry from affected area.

- Prophylaxis for tetanus, blood borne pathogens and rabies should be provided when indicated, as per the BC Centre for Disease Control (BCCDC). A potential increased risk of thrombosis (blood clots) has been observed within 24 hours of receipt of immune globulin products, especially when given in large doses (i.e., more than 10mL).
- Additional risk factors include: age 45 years and older, history of thrombosis, or those with risk factors for thrombosis (e.g., obesity, high blood pressure, diabetes, prolonged periods of immobilization, use of estrogens, a history of heart disease, blood clotting disorders, indwelling central vascular catheters, or diseases that thicken the blood).
- As per the BCCDC, the risk of HIV from a human bite is very low and in most circumstances HIV post-exposure prophylaxis (PEP) is not required. In extreme circumstances, if either person is known to be HIV positive and the bite draws blood, causes very deep wounds, or the viral load is high then PEP could be considered after discussion with a specialist. If HIV PEP is given, the follow-up blood test should be done. There is no PEP available for HCV.

Note: People who have experienced the following should not get tetanus immunization:

- Had a life-threatening reaction to a previous dose of any immune globulin or any of its components
- Have a condition called isolated immunoglobulin A (IgA) deficiency
- Have been immunized against measles, mumps, rubella, or chickenpox within the past 14 days
- Have a history of thrombosis or risk factors for thrombosis

Goals of Treatment

- Prevent/control infection
- Preserve function
- Prevent infection from blood borne pathogens, tetanus, or transmission of rabies
- Determine need for tetanus, rabies, and blood borne pathogen diseases prophylaxis

Non-Pharmacologic Interventions

- Thoroughly cleanse and irrigate with normal saline
- Remove any debris and devitalized tissue
- Consider suture repair of low-risk bite wound lacerations. These are non-infected wounds, have no evidence of damage to underlying structures and present within 8-12 hours of injury.
- Do not suture or close:
 - Infected wounds
 - Deep puncture wounds
 - Bite wounds more than 8-12 hours old

- Crush injuries
- Bites in an immunocompromised host
- Cat or human bites
- Bites to the hand or foot

Pharmacologic Intervention for Human, Cat, and Dog Bites: Adult

- Antibiotics are routinely given prophylactically for all human bites if there is moderate to severe tissue damage, deep puncture wounds or bites to the face, hand, foot, or genitals that are more than a simple superficial abrasion.
- Assess for risks of blood borne pathogen transmission and treat appropriately
- Only 3-28% of dog bites become infected and routine prophylaxis is not recommended
- 28-80% of cat bites become infected. Antibiotics are routinely given prophylactically for cat bites as they have a greater prevalence of anaerobes and infection.
- Prophylaxis is required for elderly unvaccinated or partially vaccinated populations

Prophylaxis

- Amoxicillin 500mg/Clavulanate 125mg PO TID for 3-5 days, or
- Amoxicillin 875mg/Clavulanate 125mg PO BID for 3-5 days

If allergic to Penicillin:

- Doxycycline 100mg PO BID for 3-5 days

Treatment for infected bites or scratches

- Amoxicillin 500mg/clavulanate 125mg PO TID for 7-14 days, or
- Amoxicillin 875mg/clavulanate 125mg PO BID for 7-14 days

If allergic to penicillin:

- Doxycycline 100mg PO BID for 10 days

Pregnant and Breastfeeding Women

- DO NOT USE doxycycline
- Amoxicillin/clavulanate as outlined above may be used, or
- Clindamycin 300-450mg QID for 3-5 days

Pharmacological Interventions for Human, Cat, and Dog Bites: Pediatrics

Note: Ensure recent weight obtained (for drugs doses dependant on weight).

- Prophylaxis for blood borne pathogens should be provided when indicated as per BCCDC's *Blood and Body Fluid Exposure Management* guideline.
- Antibiotics are routinely given prophylactically for cat bites as they have a greater prevalence of anaerobes and infection (65% vs. 50%) and *P. multocida* (75% vs. 50%) than do dog bites.
- Antibiotics are routinely given prophylactically for all human bites if there is moderate to severe tissue damage, deep puncture wounds or bites to the face, hand, foot, or genitals that are more than a simple superficial abrasion.
- If infection has already occurred (especially for a bite on the hand) consult with physician or nurse practitioner to consider intravenous (IV) antibiotics
- Exposure to the face and hands increases the risk of rabies because these body parts are highly innervated, providing greater and faster opportunity for virus to enter the nervous system.

Antibiotic prophylaxis is required when:

- The wound has been closed or there is evidence of infection
- It is moderate to severe
- Puncture wounds, particularly if penetrating bone, tendon or joint
- Crush injury/edema
- Preemptive early antimicrobial therapy for 3–5 days is recommended for patients who (a) are immunocompromised; (b) are asplenic; (c) have advanced liver disease; (d) have preexisting or resultant edema of the affected area; (e) have moderate to severe injuries, especially to the hand or face; or (f) have injuries that may have penetrated the periosteum or joint capsule

Assess for risks of blood borne pathogen and/or rabies transmission and treat appropriately.

Prophylaxis

- Amoxicillin/clavulanate 40mg/kg/day PO divided TID for 3-5 days (dosing is based on amoxicillin component).

Pregnant and Breastfeeding Youth:

- Amoxicillin/clavulanate may be used as listed above
- DO NOT USE doxycycline

Treatment for infected bites or scratches

- Amoxicillin/clavulanate 40mg/kg/day PO TID 10 days (dosing is based on amoxicillin component).

Pregnant and Breastfeeding Youth:

- Amoxicillin/clavulanate may be used as listed above
- DO NOT USE doxycycline

Potential Complications

- Septic arthritis
- Osteomyelitis
- Abscess formation
- Tendonitis
- Nerve damage
- Compartment syndrome
- Fracture
- Sepsis
- HIV, Syphilis and Hepatitis B and C as a result of exposure to body fluids (*human bites only*)
- Tetanus and/or Rabies

Client Education and Discharge Information

- Advise on condition, timeline of treatment and expected course of disease process
- Instruct to keep wound clean and dry
- Keep injured area elevated
- If redness, swelling or pain increases, return to clinic for assessment
- If appropriate, review measures to avoid animal bites

Monitoring and Follow-up

- Return to clinic in 24 hours for re-assessment

Consultation and/or Referral

- Refer all human bite wounds over the knuckle or having the potential to injure underlying structures to a physician or nurse practitioner
- Refer to a physician or nurse practitioner to consider intravenous (IV) antibiotics if infection has already occurred from a human bite
- A common location for the human bite is over the knuckles:
 - This injury is usually sustained when a closed fist strikes the teeth of an opponent
 - There is frequently penetration of the tendon sheath and/or the joint space
 - The hand must be examined with the fingers in a flexed position so that the deeper structures are in the identical position that they were when the injury was sustained
 - Only in that position can injury to the underlying structures be visualized through the open skin wound
 - Sometimes a foreign body such as a broken tooth is found in the wound
- Refer all facial bites to a physician or nurse practitioner
- Refer any concerns regarding rabies or unprovoked attacks to public health or a local medical health officer
- Encourage client to report a dog attack/bite to RCMP, animal control officer or appropriate official

Documentation

- As per agency policy.
- Additional public health reporting may be required in relation to rabies prophylaxis.

References

More recent editions of any of the items in the References List may have been published since this DST was published. If you have a newer version, please use it.

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