

Bites and Envenomation

Aliases

Stings

Patient Care Goals

Bites, stings, and envenomation can come from a variety of insects, marine and terrestrial animals. There is a spectrum of toxins or envenomation with very limited EMS interventions.

1. Assure adequate ventilation, oxygenation and correction of hypoperfusion.
2. Maintain pain control which also includes limited external interventions to reduce pain.

Patient Presentation

Inclusion Criteria

1. Bites, stings, and envenomation can come from a variety of marine and terrestrial animals and insects causing local or systemic effects.
2. Patients may present with toxin specific reactions which may include:
 - a. Site pain
 - b. Swelling
 - c. Muscle pain (hallmark of black widow spider bites)
 - d. Erythema
 - e. Discoloration
 - f. Bleeding
 - g. Nausea
 - h. Abdominal pain
 - i. Hypotension
 - j. Tachycardia
 - k. Tachypnea
 - l. Muscle incoordination
 - m. Confusion
 - n. Anaphylaxis or allergic reactions
3. There is a spectrum of toxins or envenomation and limited EMS interventions that will have any mitigating effect on the patient in the field.
 - a. The critical intervention is to get the patient to a hospital that has access to the antivenin if applicable.

Exclusion Criteria

None

Patient Management

Assessment

1. Assess ABCDs and, if indicated, expose and then cover to assure retention of body heat.
2. Monitor vital signs which include temperature.
3. Apply a ECG cardiac monitor, examine rhythm strip for arrhythmias, and consider obtaining a 12-lead ECG
4. Check blood glucose Level.
5. Monitor pulse oximetry and for respiratory decompensation.
6. Obtain pertinent patient history.
7. Conduct patient physical with special consideration to area of envenomation or bite.

Treatment and Interventions

1. Consider an IV Normal saline fluid bolus 20 mL/kg [*AEMT*]

2. .
3. Consider **vasopressors [PARA]** after adequate fluid resuscitation for the hypotensive patient [for adult vs. pediatric dosing see Shock guideline].
4. Treat seizures per Seizures guideline.
5. Provide adequate analgesia per the Pain Management guideline.

Patient Safety Considerations

- Do *not*:
 - Apply tourniquets, tight Ace[®] or crepe bandage, or constricting bands above or below the site of the envenomation.
 - Perform incision and/or suction wound to remove toxin.
 - Apply cold packs or immerse the affected extremity in ice water (cryotherapy).
 - Try to capture the offending marine or terrestrial animal or insect
- If the offending organism has been killed, be aware that many dead insect, marine, or fanged animals can continue to bite or sting with venom and should be safely placed in a hard sided and closed container for future identification.
- Patient may still have an imbedded stinger, tooth, nematocyst, or barb which may continue to deliver toxin if left imbedded. Consider safe removal without squeezing the toxin delivery apparatus.

Notes and Educational Pearls Key Considerations

Vinegar has potential to increase pain associated with jellyfish sting as it can increase nematocysts discharge in certain species. Providers must be familiar with endemic species and how to best address exposure.

Pertinent Assessment Findings

1. Assess for signs and symptoms of local and systematic impact of the suspected toxin.
2. Be aware that patient may still have an imbedded stinger, tooth, nematocysts, or barb which may continue to deliver toxin if left imbedded.

Quality Improvement

Associated NEMESIS Protocol(s) (eProtocol.01)

- 9914079—Injury-Bites and Envenomations, Land
- 9914081—Injury-Bites and Envenomations, Marine

Key Documentation Elements

- It is helpful to accurately describe the suspect bite or sting source without risking patient or EMS provider.
- Document appropriate transport of offending source animal or insect
 - Only transport source animal or insect if can be done safely in a hard-sided container.
- Repeat evaluation and documentation of signs and symptoms as patient clinical conditions may deteriorate rapidly.
- Document time of symptoms onset and time of initiation of exposure-specific treatments.
- Describe therapy and response to therapy.

Performance Measures

- Offending organism was managed appropriately without secondary exposure.
- Appropriate and timely definitive treatment was provided.
- Appropriate pain management was provided.

References

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