INSECT STINGS / BITES

Introduction

Stinging insects found in Wisconsin include honey bees, wasps, hornets, and yellow jackets. They belong to the class *Hymenoptera* and are most prevalent during the summer and early fall. A reaction occurs as the result of venom release into the skin during the sting. The severity of the reaction varies depending on sensitivity to the venom and previous exposure.

Local reaction: Most reactions to insect bites and stings cause a painful or itchy sensation, redness, and swelling at the site that may last for several days. Some extension of the swelling is normal. Large local reactions (LLRs) may involve larger areas of swelling around the bite or sting; these can last for 48 hours up to one week). Large local reactions occur in about 10% of insect stings. Rarely, the site of the sting becomes infected and antibiotics are required.

Systemic reaction: Only a small percentage of people develop life threatening systemic reactions to insect venom. Anaphylaxis is the most severe allergic reaction; this involves at least two organ systems out of the following: skin, lungs, nose, lips, throat, and gastrointestinal tract. An anaphylactic reaction usually occurs within minutes of a sting but may occur up to 24 hours afterward. If an individual is known to be allergic to insect stings, the next sting is 60% likely to be similar or worse than the previous sting.

It is unknown why patients with past LLRs are at low risk for future anaphylaxis while those with past systemic allergic reactions are at high risk, when both reactions appear to be IgE-mediated.

Initial Management

WISHeS Illness and Injury Protocols: Stings
See: Anaphylaxis

1. Obtain subjective data:
    a. Determine type of insect if possible and timing of bite
    b. Determine history of stings and prior reactions.

2. Obtain objective data

3. Call fire-rescue (911) if any of the following symptoms are present:
    i. LUNGS: short of breath, wheeze, repetitive cough, rapid breathing
    ii. HEART: pale, blue, faint, weak pulse, confused
    iii. THROAT: tight, hoarse, trouble breathing or swallowing
    iv. MOUTH: swelling of tongue or lips
    v. SKIN: many hives over body, facial swelling
    vi. GUT: vomiting, cramping pain, nausea

4. If student has a diagnosed life threatening allergy, follow emergency plan.

5. If student is undiagnosed, follow stock epinephrine protocol if symptoms of anaphylaxis are present.

6. Notify parent/guardian, principal, and school nurse.

7. Provide care for a local reaction:

    a. Wash the site with soap and water.
    b. Bees (and occasionally yellow jackets) have a barbed stinging apparatus that becomes lodged in the skin and rips away, along with the venom sac, from the insect's body following a sting event. The venom is released within the first several seconds after the sting, so if the insect or stinger can be flicked off of the skin immediately, it may help limit the amount of venom injected. However, if the patient presents minutes later, immediate stinger removal is not critical, because the venom will have already been fully expelled. Remaining stingers should eventually be removed because they can cause pain and rarely foreign body reactions.
    c. Apply a cool compress to site to slow absorption of venom, to relieve pain or itching, and to help minimize swelling.
    d. Observe student for at least fifteen minutes for possible reaction.
    e. Notify parent/guardian if student is uncomfortable and unable to participate in school activities. Persistent pain and itching is common but may be referred for medical evaluation. If unable to contact parent/guardian, allow student to rest with adult supervision and monitor for signs and symptoms of severe reaction.

8. Document in electronic student health record
    a. Subjective Data
        i. Details of sting/bite incident (what, when, where)
        ii. Symptoms of anaphylaxis
        iii. Pain/sensation
        iv. History of previous allergic reactions
    b. Objective Data
        i. Appearance of sting/bite area (red, swelling, etc)
        ii. Signs of anaphylaxis
    c. Interventions
        i. First aid performed
        ii. Referral for further care
        iii. Education regarding monitoring for allergic reaction and infection

Follow-up

1. Discuss self-care and prevention activities with student and parents.

2. Prevention of bites and stings.

    a. Shoes should be worn at all times.
    b. Dark colored and flowery clothing should be avoided; white is preferred.
    c. Avoid scented soaps and cosmetics.
    d. Avoid eating and drinking outside.
    e. Insect feeding grounds (flowerbeds, garbage collection areas) should be avoided.
    f. Wasps and hornet nests or beehives in home or school vicinity should be destroyed.
    g. Encourage every child with known allergic sensitivity to insect bites or stings to wear a medic alert tag and have an emergency medication kit at school.

Resources

Hirsch, L. (Ed.). (2014, April 01). Bug Bites and Stings. Retrieved January 01, 2015, from http://kidshealth.org/parent/firstaid_safe/emergencies/insect_bite.html

Stinging Insect Allergy Symptoms, Diagnosis, Treatment & Management. (n.d.). Retrieved January 01, 2015, from http://www.aaaai.org/conditions-and-treatments/allergies/stinging-insect-allergy.aspx

WISHeS Project Resources. (n.d.). Retrieved January 31, 2015, from http://www.wishesproject.org/

Visscher PK, Vetter RS, Camazine (1996). Removing bee stings. UpToDate.com (accessed 6/28/2023)