Symptoms After Subcutaneous Immunotherapy

**SKIN**
- Swelling, itching, redness, warmth at injection site
- Itchy, red, or watery eyes
- Itchy, watery, runny, or congested nose

**RESPIRATORY**
- Coughing
- Wheezing
- Shortness of breath
- Throat tightness
- Trouble swallowing
- Hoarse voice

**GASTROINTESTINAL**
- Vomiting
- Diarrhea
- Stomach pain (not distractible)

**CARDIOVASCULAR**
- Sudden sleepiness
- Difficult to rouse (lethargic)
- Dizziness
- Pale or blue color
- Fainting and/or loss of consciousness

**NEUROLOGICAL**
- Sudden anxiety
- Feeling of impending doom

**SYMPTOMS ARE MILD**
If local reactions large (>10 cm) or symptoms bothersome, consider:
- Reduce or repeat dose
- Pre-dose with 2nd gen AH (e.g. cetirizine) 1-2 h ahead of dose
- Application of ice after injection

**SYMPTOMS ARE SERIOUS**
GIVE EPINEPHRINE (autoinjector or pre drawn syringes) I.M. lateral thigh
Repeat every 5 minutes if ongoing symptoms

AFTER FIRST DOSE EPINEPHRINE:
1. If ANY RESPIRATORY SYMPTOMS or HX OF ASTHMA: give salbutamol
2. If ANY CARDIOVASCULAR SYMPTOMS: supine position, attempt I.V. or I.O. access and fluid resuscitation *Immediately call 911 – see below*
3. If cutaneous symptoms: give 2nd generation antihistamine (e.g. cetirizine 20 mg)

**IF ANY CARDIOVASCULAR SYMPTOMS or >1 dose of epinephrine required: CALL 911**
- Pre-draw at least 1 additional doses of epinephrine to send with EMS
- MOA to copy anaphylaxis flow sheet to send with patient
- Call ED Physician to provide handover after EMS departure

**Quick Reference Dosing**
**Epinephrine**
- Ampule/syringe: 0.1 mg/kg max 0.5 mg dose
- Autoinjector
  - <20 kg: 0.15 mg
  - 20-50 kg: 0.3 mg
  - >50 kg: 0.5 mg
- Large body habitus: Emerade device preferred

**Salbutamol**
- <20 kg: 5 inhalations
- >20 kg: 10 inhalations

**Post-anaphylaxis Patient Management**
1. Arrange debrief with treating allergist to discuss event, possible cofactors, desire to continue treatment and restart dose
2. Prescribe epinephrine autoinjector, to be carried to and from SCIT visits
3. If bronchospasm during reaction OR history of asthma, evaluate controller medication +/- need for additional medication on day of injections

Adapted from: Soller et al, JACIIP 2019; 7: 2759-67
Safety Checks Before Immunotherapy

- Patient is well
- Patient has very mild symptoms:
  - Runny nose
  - Headache

- If history of anaphylaxis with immunotherapy, confirm autoinjector available
- If on beta-blocker therapy, confirm held on day of immunotherapy OR treating allergist has approved and glucagon is on hand for use in anaphylaxis
- Patient and MD/RN to confirm:
  - Patient name (on vial)
  - Dose (vial and amount – refer to dose administration record)

Administer dose subcutaneously into triceps skin fold

Patient to wait in MD office for 30-45 minutes after administration

- Identified contraindication to immunotherapy
  - Fever (>38.5°C)
  - Vomiting or diarrhea
  - Coughing, breathing difficulties
  - Incomplete asthma control or asthma exacerbation
  - Identified cofactor(s)* of allergic reaction
    - Fever/illness
    - Vigorous activity
    - Excessive heat
    - NSAIDs
    - Alcohol
    - Excessive fatigue (e.g. jet lag, post night shift)

Hold immunotherapy dose

- Optimize asthma control
- Review cofactor avoidance

Re-book visit

*Cofactors can lower the threshold for mast cell degranulation and therefore increase the likelihood of reaction, and should be avoided within a few hours of administration of immunotherapy treatment

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Note: This document is provided as an example. It is recommended that you review the available literature to determine the most appropriate management strategies for your practice.