

The Pollen

Issue N°7 - Systemic Reactions

In the previous issue we covered the first half of adverse reactions, localized adverse reactions. In this issue we will look at the other side of the coin, systemic adverse reactions.

A systemic reaction is defined as any reaction that affects an area of the body not directly related with the injection, i.e. if the injection is given in the right tricep, and a reaction occurs on the chest, then that reaction is considered to be systemic.

Unlike localized reactions, which show no correlation to systemic reactions, systemic reactions do play a large factor in future systemic reactions. It has been well documented that after having one systemic reaction, the risk of having a second reaction with a greater severity is much higher. ¹

Symptoms: (Please note that this list is not all inclusive.) ²

- Angioedema, urticaria, pruritus, erythema away from the injection site
- Erythema, pruritus, or tearing of the eyes
- Asthma, rhinitis, coughing, wheezing, or throat or tongue swelling
- Drop in blood pressure or loss of consciousness
- Nausea, headache, abdominal or uterine cramps, vomiting, and/or diarrhea.

What's Happening:

The exact mechanisms of what happens during systemic adverse reactions are not known, but depending upon the symptoms experienced and bodily systems effected some assumptions can be drawn as to what is happening. Like localized reactions, when the allergen is encountered by mast cells, histamine and other chemicals are released. When these chemicals are released into the blood stream and lymph systems, the symptoms start occurring at different sites of the body and different organ systems, such as redness and itching of the eyes or swelling of the tongue.

How a Doctor can treat:

The action(s) that a doctor can take depend largely upon the severity and the system(s) effected by the reaction. It is important to note that a vast majority of the severe systemic reactions occur within the first 30 minutes after an injection. It is important to be able to recognize the early symptoms and signs of anaphylaxis and be able to administer emergency treatment if necessary. The recommended first line of treatment for systemic reactions is currently epinephrine. ³ Premedication is also recommended if the patient is believed to have a higher risk for reaction. If a patient does experience a systemic reaction, do not administer any further injections until an action plan has been covered between the provider and the patient.



1. Kemp SF, DeShazo RD. Prevention and Treatment of Anaphylaxis. Allergens and Allergen Immunotherapy. Third Edition. 2004. 729-754.

2. Bernstein IL, Li JT, Bernstein DI, et al. Allergy Diagnostic Testing: An Updated Practice Parameter. Ann Allergy Immunol. 2008; 100: S1-S148.

3. Cox L, Nelson H, Lockey R, et al. Allergen Immunotherapy: A practice parameter third update. J Allergy Clin Immunol. 2011. S1-S55.