

Bee venom immunotherapy

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What is bee venom immunotherapy?

Bee venom immunotherapy involves injecting gradually increasing doses of bee venom into allergic individuals. The amount and strength is increased over a minimum period of sixteen weeks or until the full strength (1ml) maintenance dose is reached and tolerated. Once this has been achieved the injections are given for five years according to the protocol set out below.

How does it work?

Over time, these injections reduce the body's allergic reactions to bee stings.

Immunotherapy works through several mechanisms. It decreases cellular allergic responses, decreases the sensitising antibody (IgE) and increases tolerance to the venom. The purpose of venom immunotherapy is to reduce the severity of the reactions and the risk of fatality, and to improve patient quality of life by allowing the patient to work or play outdoors without being concerned about the possibility of experiencing a serious allergic reaction.

Bee venom immunotherapy, if given correctly and for the correct amount of time, has proven to be nearly 98% effective in preventing fatal bee sting reactions.

Bee immunotherapy provides rapid protection against bee stings. However, it is important that the patient continues to keep their EpiPen with them at all times until the course is completed and/or their doctor says that it is safe to go without.

Does bee immunotherapy last?

Yes, it does, however there is a residual risk of systemic reactions of approximately 5-10% after completion of venom immunotherapy. These reactions are typically mild and clinical features such as a history of very severe reactions to a sting, systemic reactions during immunotherapy, and a treatment duration of less than 5 years have been associated with a greater likelihood of relapse. Hence it is important to be totally committed to the full 5-year course.

What are the contraindications?

Bee immunotherapy is contraindicated in patients with medical conditions that increase the patient's risk of having treatment-related systemic reactions, such as those with severe or poorly controlled asthma or significant cardiovascular diseases. Immunotherapy is also contraindicated in patients using beta-blockers since these agents can amplify the severity of the reaction and make the treatment of systemic reactions more difficult.

What are the risks?

The risk of an adverse reaction to bee immunotherapy is low. It is however important to adhere to the schedule and other guidelines.

Most adverse reactions to immunotherapy are attributed to errors in dosage and timing. Special care should therefore be taken to adhere to the program and to understand the dosing regime. Adverse reactions are most likely to occur during the initial induction phase of immunotherapy.

Non-specific reactions such as excessive tiredness and headache are quite often reported but are of no clinical significance. However, dizziness, flushing, itching and repeated clearing of the throat often precedes a systemic reaction. It is therefore important to watch your child after his or her injection and report to the nurse/doctor if you are worried.

If a small local reaction at the injection site occurs, (<5cm swelling) the schedule can be continued as normal. If a larger area of swelling occurs, (>5cm) then additional oral anti-histamines are given and the same injection dose is repeated at the next appointment. However, these are guidelines and some children are more prone to a larger local reaction than others and the dose can normally be increased as per the schedule as long as no systemic reaction has occurred. Your nurse or doctor will know what is best.

How are the injections given and when?

Bee immunotherapy is a five-year course consisting of three phases

Phase one: (The build-up or induction phase) An injection is given every week for sixteen weeks or until the maintenance dose has been reached and tolerated. Although the maintenance dose is typically 1ml this may differ from child to child – the highest dose tolerated becomes the maintenance dose for that child. The nurse or your doctor will be able to make this decision. This build-up period can be protracted if reactions occur and the increased amounts need to be lower to prevent reactions.

Phase two: (Maintenance period) a maintenance injection every 4-8 weeks for three years. (No closer together than 4 weeks and no further apart than 8 weeks)

Phase three: (Protracted maintenance period) a maintenance injection every three months for two years.

How are the injections given?

The injections are given sub-cutaneously, which is into the layer of fat that is found between the skin and the muscle. This is for slow absorption. We use the outer aspect of the upper arm just below the triceps muscle. We use a small needle and the amount of fluid injected is never more than 1ml.

Before each injection the nurse will take your child's blood pressure, pulse and peak flow. If the peak flow is less than 15% of predicted or if your child is not well you will need to reschedule. After the injection you will wait for forty-five minutes after which the blood pressure, pulse and peak flow are repeated. If no readings have changed and if the nurse is happy that no adverse reaction has occurred, you will be allowed to go home. You will need to allow at least one hour for each appointment.

It is advised that your child does not play sport, run around or take a long hot bath after the injection. These activities could cause the vaccine to be absorbed faster than designed which in turn could lead to a reaction. This is a good day to go home to a DVD or to read a book!

What are the requirements for Immunotherapy injections?

If your child is asthmatic, immunotherapy can only be started once he or she has had a full lung function test and the asthma has been well controlled for a period of time. Parents will then need to agree to give the child their controller therapy on a regular basis and to attend six (6) monthly follow up visits with their asthma doctor for the duration of the immunotherapy course.

Your child will need to take an anti-histamine 20 minutes before the appointment. Allecet, Zyrtec, Telfast or other non-sedating preparations are preferable.