

Lay summary

EAACI GUIDELINES ON ALLERGEN IMMUNOTHERAPY: HYMENOPTERA VENOM IMMUNOTHERAPY

An allergy is as a condition that makes people become suddenly sick after they had contact to a substance, a so-called allergen. This may happen to some after being stung by certain insects, mainly by bees, wasps, hornets or, in some countries, also by fire ants. From childhood to old age, allergic people can develop mild, but uncomfortable symptoms in the skin with redness and intense itching while flares appear. Some people may show severe signs of an allergic reaction, such as breathing difficulties with cough and breathlessness or a runny nose, sneezing and a strange, hoarse voice. All these reactions are due to a misled response of the body's immune system, whereby levels of a certain type of antibody, the so-called IgE antibody, become very high in the blood and start fighting actually harmless substances.

Although the risk of getting stung by bees or wasps is very high (up to 94% of people get stung at least once in their lives) it also depends on certain factors, such as age (children get more often stung while playing barefoot outdoors) or the risk of exposure (greater risk for gardeners and beekeepers). It is important to know that the first bee-, wasp -or hornet sting actually never leads to an allergic reaction but swelling and some pain are very common at the sting site. Upon repeated stings, our bodies' immune system can produce IgE-antibodies to the venoms of bees, wasps or hornets.

Systemic allergic reactions to insect venoms affect up to 7.5% of adults and up to 3.4% of children. The risk for more severe, even life-threatening, reactions is much higher in adults, because they may have other chronic diseases and need to take certain medications. Although deaths due to a bee, wasp or hornet allergy can occur, they are extremely rare in children.

As each sting carries the risk for future systemic allergic reactions, patients need to carry an emergency kit including an adrenaline auto-injector. However, the only treatment that effectively improves severe venom allergy, is venom immunotherapy (VIT).

VIT can be administered to adults and to children from the age of five years. Increasing doses of bee or wasp venom are injected into the skin until a dose is reached, which usually equals two bee and up to ten natural wasp stings. It must be continued for at least three to five years and in some patients life-long. Treatment success is greater for wasp (96%) than for bee venom allergy (84%). To prevent side effects during VIT, antihistamine tablets can be given before the injections and possibly doubling the venom dose may also prevent future systemic allergic reactions. Sometimes a sting challenge test needs to be performed in specialized centres to find out, whether patients have now become tolerant to future stings.

There are still gaps in our knowledge of VIT and further research will help further improve venom immunotherapy.



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