



# Case report of hereditary angioedema with anaphylaxis after hornet sting and consequent venom immunotherapy

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## Main question

**Can be a patient with hereditary angioedema (HAE) treated by venom immunotherapy (VIT)?**

In the literature we found no information. The fear that VIT will cause attacks of HAE, nevertheless VIT was started from the vital indication.

Procedure: on the day of application of VIT patient took danazolom 200 mg and cetirizine 10 mg in the morning, otherwise standard procedure of VIT dosing was followed.

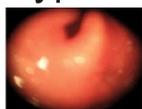
During initial phase of VIT no non - standard reaction and no attacks of HAE were observed.

## Conclusion

**VIT can be used in patients with HAE**

## Background

Patient HK, 1937, women, with two potentially lethal conditions. Both of this diagnosis were mediated through vasoactive mediators (HAE through bradykinin, anaphylactic reaction through histamine, tryptase, leucotriens...)



**1. Hereditary angioedema :**  
Risk of suffocation from laryngeal edema!



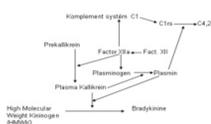
**2. Anaphylaxis:**  
Risk of shock with cardiovascular failure

**1+2. Allergic reaction is trigger of HAE!!**

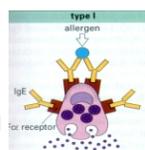
## Theory



**Patophysiology of HAE type I, II:** mutation of gene for C1INHIBITOR (INH) results in low level or dysfunction of C1INH, high level of bradykinin and angioedema.



**Patophysiology of anaphylaxis:**  
After contact with the allergen in sensitized individuals vasoactive mediators are released, followed by angioedema and cardiovascular collaps.



## Detailed case report

### Hereditary angioedema

Attacks from 1954 (17 years) - abdominal pain, escalation in pregnancy (21, 22 years): angioedema on the limbs, trunk, face, abdomen, but also on external genitalia.

Frequency 1 per week, solid, without pruritus and erythema, lasted 3 - 5 days. At 1987 first laryngeal edema

#### Laboratory tests of HAE diagnosis:

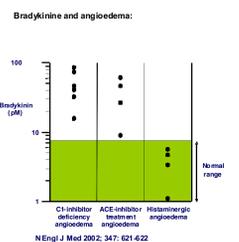
C1INH 0,03 - 0,07 g/l (normal 0,15 - 0,35 g/l)

C4 0,03 - 0,1 g/l (normal 0,14 - 0,35 g/l)

Function of C1INH 18 (normal 68 - 100)

Genetic exam.: mutation of gene for C1 INH

HAE I. Type (C1INH and C4 under 50%)



### Allergy

From year 2000 attacks of bronchial hyperreactivity, eczema, GIT pain after foods, local reaction after insect sting (HAE?, Allergy?)

#### Prick tests:

positive reaction on grass, mites

#### Insects prick tests:

bee (100) 3/7

wasp (100) 0/0

bee (300) 0/0

wasp (300) 0/0

#### i.d. test:

bee 0,01 i.d. 8/30

wasp 0,01 i.d. 6/25

#### Laboratory tests:

**Total IgE** 182 (norm. 0 - 200 IU/l)

**Specif. IgE** (norm. 0 - 0,35 U/ml):

IgE mites 2,81

IgE grass 0,752

IgE eggs 0,644

IgE peanut 0,728

IgE wheat 0,748

IgE rice 0,752

IgE bee 1,191

IgE wasp 1,961

#### Spec. IgE (posit. over 0,35 IU/ml):

IgE bee 1,811

IgE wasp 1,361

rapi m1 0,001

rves v5 2,3

rves v1 0,401

a - CCD 0,001

#### BASOTEST:

bee 11.74 (neg.)

wasp 17.64 (low posit.)

#### IgG4:

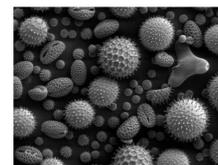
IgG4/wasp 1.71

IgG4/rves v5 0,251

IgG4/rves v1 0,071

IgG4/ bee 0.29

Tryptase 2.6 (normal 0 - 11,4)



### Anaphylaxis

From year 2010 - after sting of bee to 10 min. nausea, unable to walk, state "could not stand on her legs", equipped with epinephrine. From 2011 after sting of wasp only local reaction (she used emergency treatment (cetirizine 10mg, danazolom 200mg and prednisolonum 20 mg).

After 3 weeks she received 3 hornet sting (leg, head), she used emergency treatment, but after 30 minutes appeared nausea, generalized erytoma, urticaria and pruritus on all over the body, tremor, alternating heat and cold sensation, dyspnoea, dry mouth, heart palpitations, precollaps to collapse. She was hospitalized on intensive care unit, improvement after injection of adrenaline and corticosteroides i. v. Resume: anaphylaxis grade III (Müller).