Getting to know Hereditary Angioedema

Information for Patients and Caregivers

Pharming

What is hereditary angioedema?

1 in 50,000 people have hereditary angioedema[1]

People with hereditary angioedema (HAE) are unable to make enough of the functional blood protein, C1-esterase inhibitor (C1-INH). Lack of this inhibitor results in overproduction of an inflammatory substance called bradykinin, which causes leakage of fluid from blood vessels and build-up of excessive fluid, which is the cause of localised swelling.[1,2]

The skin, digestive system, and upper airways are often affected.[3] Swelling usually takes place under the skin or mucous membranes, develops over several hours, and may last for 2-5 days, if untreated.[2]

Children aged less than two years are very rarely affected[4,5]

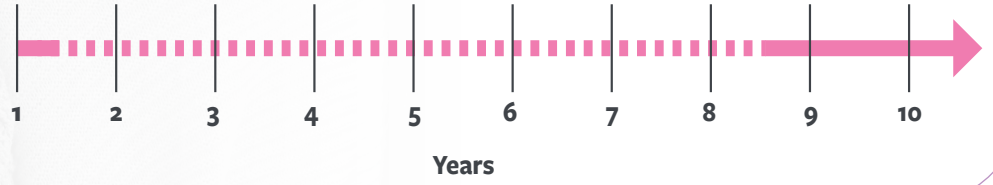
Symptoms often worsen during puberty[6]

Mean age at onset is 8-12 years[3]

HAE continues throughout life[6]

Because HAE is uncommon and symptoms are similar to those of other skin conditions, diagnosis is often delayed.

Delay in diagnosis 1.4 to 8.5 years[2]



Types of HAE

There are three types of HAE which differ according to the amount of C1-INH a patient has and how well it works:[7]

TYPE I:

Most patients (about 85%) have this type of HAE, in which they don't produce enough C1-INH.[7]

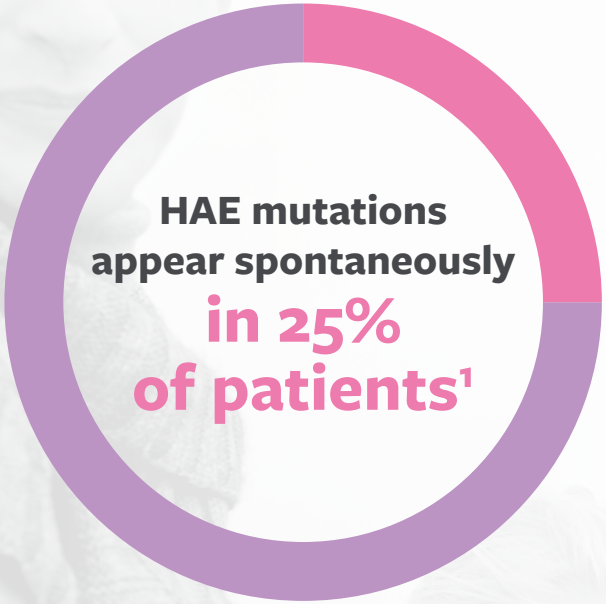
TYPE II:

This is less common than Type I (it occurs in about 15% of patients). People with Type II have normal levels of C1-INH but it doesn't function properly.[7]

TYPE III:

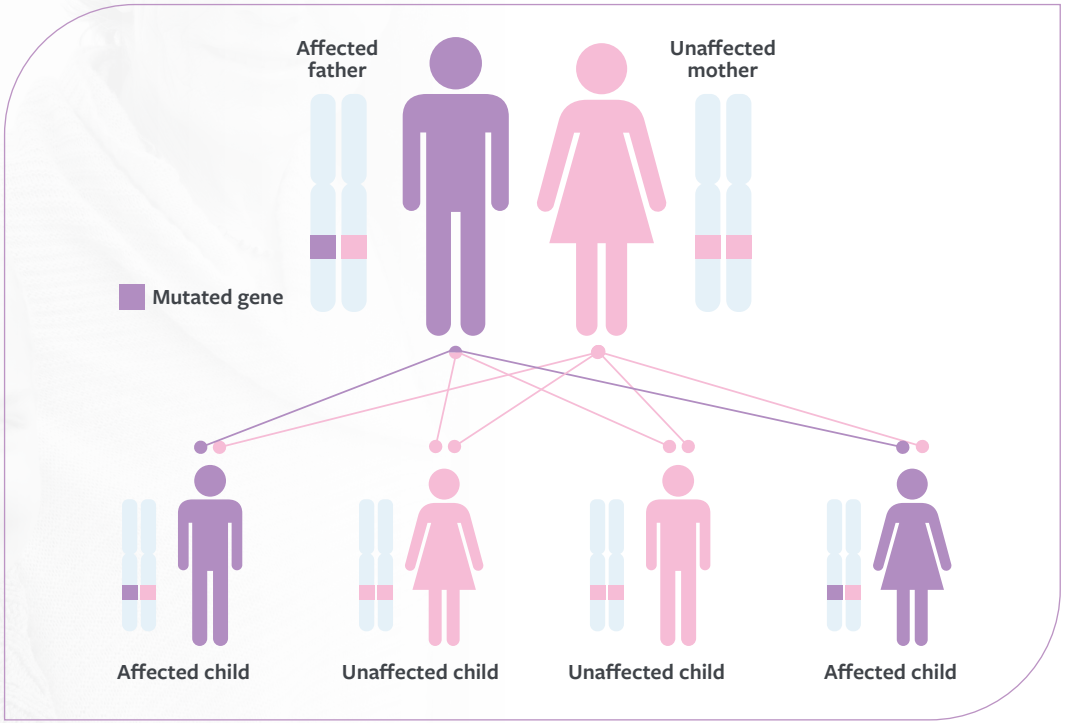
This is a very rare type of HAE that mostly affects females, in which patients have normal levels of fully functional C1-INH but patients still experience angioedema attacks.[7]

What causes HAE?



HAE is an autosomal dominant genetic disease.[2] This means that the gene mutation is located on one of the non-sex chromosomes and that one copy of the mutation from either parent is enough to cause the disease. Therefore, the affected parent has a 50% chance of passing HAE on to their children.

The absence of family history does not rule out the HAE diagnosis though as the disease can manifest itself by a spontaneous mutation of the C1-inhibitor gene (de novo mutation). These patients can pass on the defective gene to their offspring.



Diagnosing HAE

If the doctor suspects HAE from the person's symptoms and medical history, it can usually be diagnosed with a blood test.[8] This test measures the amount and functionality of C1-INH, and also the amount of another important blood protein called C4, which is usually low in people with HAE.[8]

If there is any doubt, a genetic test can be carried out to confirm the diagnosis.[8]

Triggers for HAE[2,4,5]

Most episodes start without warning; however, trigger factors have been identified in people with HAE. Some examples are:

- **Accidental injury**
- **Infection (e.g. cold or flu)**
- **Emotional stress**
- **Surgery, particularly dental surgery**
- **Hormonal fluctuations**

Warning signs and symptoms of an HAE episode

Some people have warning signs and symptoms that an episode is coming, which may appear as early as 16 hours beforehand.[4] Knowing your own warning signs can help you to make sure you are treated as early as possible.

Discomfort at the site of the swelling and a non-itchy, spreading rash with a wavy border are two examples.[1,2] Other warning signs and symptoms include:[1,2,4]

Fatigue/weakness/lack of energy

Mood swings

Headache

Tingling

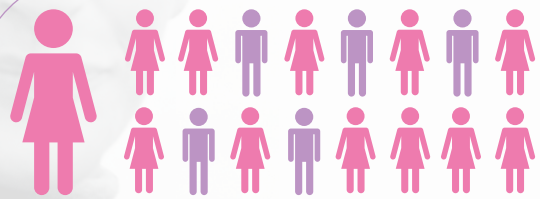
Nausea

Thirst

Joint or muscle pain

Recognising these signs and symptoms can help people to make sure they receive early treatment before symptoms have a chance to become severe.

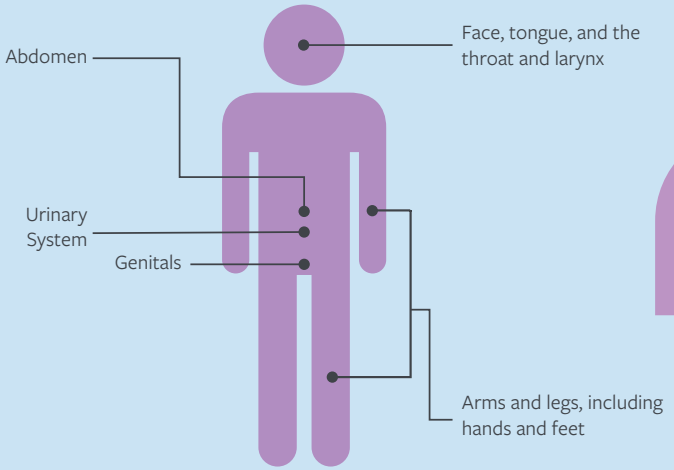
HAE episodes



Women tend to be more severely affected than men and also have more frequent episodes of HAE;[3] oestrogen-containing medicines tend to make HAE symptoms worse.[1,3]

The frequency of HAE episodes varies among different people and tends to be unpredictable: some people may have very few symptoms while others may have episodes every few days.[2] Episodes may start in one part of the body and spread to another before they disappear.[6]

Swelling typically builds up over the first 24 hours,[6] and episodes can last for 2-5 days if not treated.[2] They may affect any part of the body, but the most common sites are:[2-4,6]



If swelling occurs in the throat and affects the airways, it can be life-threatening[3,4]

The severity of symptoms varies among family members and people with early onset of HAE often have more severe disease than those with late onset.[3]

Swelling in the arms and legs is usually less painful; however, abdominal symptoms may become more severe with time,[5] so it is important to treat all episodes as early as possible. Prompt treatment is particularly important for people with swelling of the face and/or mouth, even if this is apparently mild, to make sure the swelling does not spread to the airways and impair the person's ability to breathe.[3,4]

Treating HAE

A number of medicines are available to help people with HAE to manage their symptoms and enjoy active lives. Your healthcare professional will discuss the different options to find out which one is suitable for you.

References

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For additional questions regarding HAE feel free to reach out to us: **medinfo.uk@pharming.com**