Urticaria and Angioedema

Allergy and Immunology Awareness Program
Urticaria

Commonly known as ‘hives’, urticarial is an itchy rash with swelling that appears on the surface of the skin. The red raised bumps on the skin become white if pressed on. The hives can appear on any part of the body and vary in size. They usually disappear within hours to days, but occasionally come back.

Causes

The body’s defense system is in charge of checking anything that comes into contact with it. The defense system labels regular things as ‘safe’ and dangerous things that can harm you (like viruses), as ‘unsafe’. The defense system will protect the body from harmful things by making antibodies to attack ‘unsafe’ things.

The defense system may sometimes make a mistake by considering something that is safe as being unsafe and will attack it. The chemicals the defense system releases to fight against ‘unsafe things’ are called histamines. Histamines, along with other chemicals, cause the skin to itch, to redden and to swell.

Mast cells are specialized cells within the immune system. They are formed in the bone marrow and when they are stimulated, they release a number of chemicals including histamine, leukotriene and others that start an allergic reaction. Histamine makes three major changes on the skin: redness, swelling and itchiness.

Allergens

Allergic reactions can happen when the allergen enters the body, either by swallowing, breathing or touching it. Common allergens include foods (e.g. peanuts), drugs (particularly antibiotics such as penicillin) and dust and venoms from the stings of insects (e.g. bee, wasp, yellow jacket, hornet, fire ant). Generally, any kind of allergen has the potential to cause urticaria. Even latex can be an allergen to some people.

Angioedema

A swelling from the deeper layers of the skin, angioedema often shows a big swelling on the body parts affected (e.g. lips, around the eyes).

Urticaria and angioedema can happen together or alone

Most cases are not considered to be very dangerous, but they can cause severe discomfort and affect the person’s quality of life.

Classification

Urticaria is classified according to the length of time that the swelling and itchiness stays. Less than six weeks is called acute. More than six weeks is chronic. This makes a difference in the way doctors treat these conditions.
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Non-specific causes

Urticaria and angioedema can be a part of a bigger reaction like anaphylaxis. Anaphylaxis is a life-threatening allergic reaction. It is very serious and can cause the blood pressure to drop to a very low level. This can be a total body allergic reaction to any number of things.

Some infections can also cause the defense system to react a certain way, therefore leading to urticaria. If medication was taken for these infections, it can be hard to tell whether the urticaria was caused by the infection or whether it was caused by the medicine. Antibiotics like penicillin can be the cause of hives in some people. The doctor will most likely order a number of tests to find out.

Drugs that may cause hives are:

- Certain types of pain killer: Aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs) e.g. ibuprofen
- Some types of high blood pressure medicines: ACE inhibitors e.g. Enalapril
- Contrast dye used for imaging like computed tomography (CT) scan and x-ray

Physical urticaria

Urticaria and/or angioedema can be caused by things around us, like a change in temperature, something pressing on the skin, or even vibration. Two rare causes of hives are being exposed to sunlight and touching water.

Urticaria and systemic diseases

Urticaria could be a feature of systemic disorder e.g. systemic lupus erythematositis, rheumatoid arthritis, vasculitis or malignancies. This type of urticaria usually persists for more than 24 hours and may cause staining of the skin after the rash disappears. The urticaria is more painful than itchy.

Urticaria and Autoimmune Thyroid Disease

Autoimmune disease means that the body produces antibodies that attack its own cells and organs. Chronic hives can be associated with thyroid problems. The doctor can run tests to see whether or not your thyroid is affected. It may be the cause of your urticaria.

Chronic Idiopathic Urticaria and Idiopathic Angioedema

Most of these chronic cases happen without a known cause. When nothing seems to be causing the hives or angioedema, it is called idiopathic. The lab tests usually show that everything is as normal. Chronic urticaria and idiopathic angioedema do not need a contact with an allergen for them to happen – they just do.

Treatment

- Even without treatment, most cases of acute hives and angioedema will resolve spontaneously within hours.
- Avoiding the allergens, if any, is the number one step.
- A special preservative-free diet has been suggested. It is also helpful to avoid stress and fatigue.
- Try to keep the air around you cool and comfortable. Avoid tight or restricting clothes, as well as long periods of sitting or walking.
- There are also certain medications that may worsen chronic urticaria rather than help. Therefore, it is best to avoid medicines such as angiotensin converting enzyme (ACE) inhibitors, aspirin and non-steroidal anti-inflammatory drugs (NSAIDs).
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- There are also certain medications that may worsen chronic urticaria rather than help. Therefore, it is best to avoid medicines such as angiotensin converting enzyme (ACE) inhibitors, aspirin and non-steroidal anti-inflammatory drugs (NSAIDs).
Intravenous immunoglobulins are also effective in refractory cases. Omalizumab is an IgE antibody that was found to be effective in the treatment of chronic urticaria in patients with symptoms not controlled by H1 antihistamines. It prevents the IgE mediated activation of mast cells and the release of histamine which prevent urticaria formation. No monitoring is required.

After the symptoms become fully controlled, the patient will have to continue on the same treatment for two to three months before the dose can be reduced gradually or the medications stopped. This should be done after a physician consult.

For more information, please contact us at: AIAP@hamad.qa

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- If the hives or angioedema are in fact part of an anaphylactic reaction, then you may be in urgent need of an epinephrine injection.
- H1 antihistamines can be prescribed by your doctor that will block the effect of histamine in your body.

The second generation drugs are preferred as the first line therapy due to less side effects (sedation, dry mouth, blurred vision, constipation, urine retention) and they stay in the body for a longer time, which allows for less daily dosing. Continuous use on a daily basis is found to be superior to “as needed” use as they prevent the development of the swelling rather than treat already existing one.

The newer second generation H1 antihistamines, or what are known as the “third generation H1 antihistamines”, are safer and do not cause heart problems. If there is no improvement of the symptoms after two weeks of initiation of second generation antihistamine, the doctor may increase the dose of the drug. The dose can be increased up to fourfold of the recommended dose to achieve symptomatic control. Another option is adding a second first generation antihistamine or adding an H2 antihistamine. The doctor could also add another type of medications known as leukotriene receptor blockers e.g. montelukast, which block the production of leukotriene.

One of the chemicals produced by the immune system involved in urticaria formation is a substance known as leukotriene, so by inhibiting the action of this substance, urticaria formation decreases. While taking these drugs, the patient needs to follow up with his doctor and monitor his liver enzymes regularly. The doctor can add a first generation antihistamine at bed time. If the symptoms are still not controlled, the case is said to be refractory. The doctor will then consider using an anti-inflammatory or immunosuppressive drug:

- Corticosteroids
- Cyclosporine
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