

Anaphylactic shock: how to recognize and what to do?



Anaphylactic shock is the strongest and usually life-threatening reaction of the immune system resulting from contact with a specific allergen to which the body has already been sensitized. This reaction takes place thanks to the activation of mast cells and basophils, which, when confronted with an allergen, begin to massively release various substances, including histamine.

When these substances enter the blood, they cause an increase in blood vessel permeability, muscle contraction, bronchospasm, cardiac dysfunction and other symptoms.

Anaphylactic shock causes rapid deterioration of the patient's condition. Shortness of breath, vomiting, skin rash, dizziness, drop in blood pressure and even cardiac arrest may occur. Rapidly dilating blood vessels can reduce blood flow to vital organs, which can lead to organ failure or death.

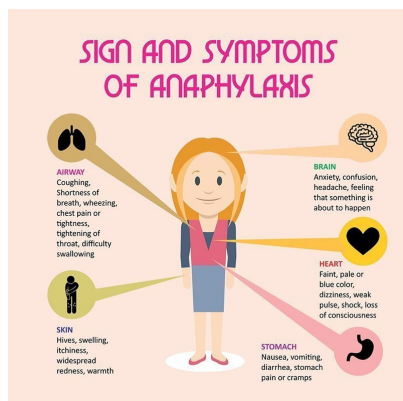
Shock is characterized by rapidly developing systemic inflammation that can affect several organ systems at once. Emergency medical attention is often required to prevent death. Although anaphylactic shock is usually triggered by allergens such as certain foods, medications or insect stings, in some cases it can be difficult to determine the exact cause. However, regardless of the cause, prompt and appropriate treatment is vital.

What causes anaphylactic shock?

The occurrence of anaphylactic shock is a reaction of the body's immune system to specific allergens that it has previously encountered and to which it reacts sensitized. The range of causes is wide, but some allergens are more likely than others to cause this dangerous condition:

1. **Some foods**, especially nuts, eggs, milk, fish and shellfish, are very common triggers of anaphylactic shock. Although any food can cause a reaction, the products mentioned
2. **Several drugs**, including some antibiotics (such as penicillin), nonsteroidal anti-inflammatory drugs, and chemotherapy drugs, can cause anaphylactic shock. Even small dose
3. **Bees, beetles, hornets, and certain ducks** can cause a severe allergic response in some people.
4. Some people may have an allergic reaction to the latex proteins found in **natural rubber**. This can cause problems for medical professionals who need to use latex gloves or f
5. Although this is a less common cause, in some people **vigorous exercise** can cause anaphylactic shock. This is called exercise-induced anaphylactic shock.
6. Some people may have a reaction to the **contrast materials** used in radiological examinations.

In most cases, the causative agent of anaphylactic shock is clearly identifiable. However, in some patients the cause may remain unknown, in which case it is called idiopathic anaphylactic shock. Regardless of the cause, it's important to recognize early symptoms and get medical help right away.



Symptoms

Symptoms of anaphylactic shock can appear within minutes or hours after exposure to the allergen. Symptoms can be mild or very severe, depending on personal sensitivity and the amount of allergen. It should be noted that these symptoms can progress rapidly, and failure to notice or ignore them can lead to death. Here are the main symptoms of anaphylactic shock:

- **Skin reactions.** Redness of the skin, itching, tingling or a rash, including fever or tingling in the mouth, are common.
- **Difficulty breathing.** Pulmonary edema or bronchospasm can cause shortness of breath, convulsive breathing sounds, cough, chest pain or pressure.
- **Symptoms of the cardiovascular system.** These include tachycardia (fast heart rate), hypotension (low blood pressure), heart rhythm problems, chest pain or even cardiac arrest.
- **Symptoms of the digestive system.** Abdominal pain, vomiting, diarrhea or colic are common symptoms of anaphylactic shock.
- **Neurological disorders.** Manifested by dizziness, weakness, loss of consciousness or even convulsions.
- **Other.** Voice changes due to swelling of the mucous membrane in the throat, an early suspected symptom may be chills or chills, abdominal pain, urinary incontinence.

If a person experiences any of the above symptoms, especially after contact with a known allergen, it is necessary to consult a doctor or go to the hospital immediately. Anaphylactic shock is a life-threatening condition, and prompt medical attention can be life-saving.

Treatment of anaphylactic shock

Treatment of anaphylactic shock is urgent and requires immediate medical intervention, as it is a life-threatening reaction. Treatment depends on the severity of the shock, but here are the main principles of treating anaphylactic shock:

1. **Adrenaline injection.** This is the main and first method of treatment for anaphylactic shock. Adrenaline should be injected into the inner thigh as soon as possible after the first symptoms.
2. **Respiratory support.** The patient may require oxygen or intubation if breathing is severely compromised or if there is a threat of mucosal closure due to swelling.
3. **Fluid infusion.** In cases of hypotension or shock, a rapid infusion of fluids may be required to help stabilize blood pressure.
4. **Antihistamines.** These medications can be used to reduce or stop itching, tingling, and other symptoms of an allergic reaction.

5. **Corticosteroids.** Steroids, such as prednisolone, may be prescribed to reduce the inflammatory response and for preventive treatment to prevent a subsequent reaction.
6. **Beta adrenergic agonists.** Patients who experience bronchospasm or dyspnea may be prescribed inhaled bronchodilators.
7. **Patient monitoring.** After treatment of anaphylactic shock, the patient should be observed in the hospital for at least 4-24 hours, as a subsequent anaphylactic reaction may occur.
8. **Teaching.** Patients who have been diagnosed with a risk factor for anaphylactic shock should be taught how to handle anaphylactic shock, including the use of an auto-injector.

For a patient known to be at risk of anaphylactic shock, the doctor may prescribe an adrenaline autoinjector that must be carried everywhere. It is important to inform family members, friends and colleagues about this condition so that they can provide help if needed.



Is anaphylactic shock preventable?

Prevention of anaphylactic shock is very important for people who are at risk, as this condition can be life-threatening. There are several basic methods and strategies to reduce the risk of anaphylactic shock.

1. Each patient at risk of anaphylactic shock should **have an individual plan** of action prepared by an allergist or other specialist. This plan should include information about what to do in an emergency.
2. It is very important **to identify and avoid substances** that can cause an allergic reaction. This may mean avoiding foods, medications, or insect bites.
3. Patients at known risk of anaphylactic shock should be prescribed and trained to **use epinephrine autoinjectors** (eg. EpiPen). These devices allow the rapid injection of adrenaline.
4. It is important **to inform family members, friends, teachers and employers** about the risk of anaphylactic shock so that they can provide help if necessary.
5. Patients should regularly **consult with their doctors and participate in educational programs** to stay informed about the latest measures to prevent anaphylactic shock.
6. If there is no clear cause of anaphylactic shock, an allergist may perform **allergy tests** to identify potential allergens.

Above all, it is important to remain alert and ready to act if symptoms of anaphylactic shock occur, as this condition can develop very quickly and requires immediate treatment.

Sources of information:

1. World Allergy Organization. "Anaphylaxis in Clinical Practice." 2020.
2. American Academy of Allergy, Asthma & Immunology. "Anaphylaxis." 2021.
3. National Institute of Allergy and Infectious Diseases. "Anaphylaxis." 2019.