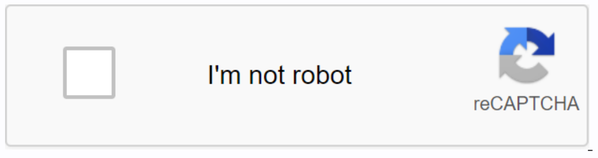

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Fisiopatologia de shock anafilactico pdf

36. Anaphylaxis and anaphylactic shockDra. Vict'ria Cardona DahlMedic specializes in Allergenology. Alergology Section of the Universitari Vall d'Hebron Hospital, Barcelona What are anaphylaxis and anaphylactic shock? Anaphylaxis is the most severe allergic manifestation there is. It is defined as a widespread and rapidly established allergic reaction that can become fatal. Unlike other allergic diseases that affect only one organ, such as allergic rhinitis (affecting only the nose), in this case the allergic reaction is systemic, which means that it affects the whole body, and can give varied symptoms in various systems. In addition, it is a reaction that appears quickly, usually in a few minutes. It can become severe, producing respiratory symptoms such as asphyxia, or cardiovascular, with a drop in tension and loss of consciousness. In very extreme cases, it can lead to a fatal outcome, especially if symptoms are not recognized and do not act quickly. When anaphylaxis occurs with cardiovascular involvement and blood pressure reduction, it is called anaphylactic shock. Patients at higher risk of more severe anaphylaxis are those with a previous history of asthma or cardiovascular disease. Anaphylaxis is therefore a medical emergency. It is very important that all healthcare professionals can immediately diagnose a patient with anaphylaxis in order to start appropriate treatment quickly. How is anaphylaxis produced? Anaphylaxis occurs as a result of the explosive release of substances by cells, mast cells and basophils, which induce typical symptoms of an allergic reaction. These cells are activated by various mechanisms. The most typical mechanism is the classic immediate allergic reaction in which an allergen joins IgE antibodies (immunoglobin E), which are found on the surface of immune system cells such as mast cells and basophils. This joint works as a key that fits into a lock and opens these cells, which release the substances that cause the symptoms. Other mechanisms can activate mast cells and basophils, through antibodies such as IgG or directly by the action of drugs and various chemicals or physical stimuli. Among the substances that produce and release mast cells and basophils, histamine stands out. It is capable of causing dilation of blood vessels (vasodilation), increased permeability of these (liquid output) and stimulation of nerves. This leads to the development of swelling (edema), redness (erythema) and itching (itching), which on the patient's skin will manifest as hives or hives. In addition, histamine causes bronchoconstriction (narrowing of the bronchi, such as in seizures Other substances released are tryptose, leukotrieno, prostaglandins, chemokines and cytokines. Anaphylaxis is the most severe allergic manifestation there is. (Credits, F. 127) What proportion of the general population suffers from anaphylaxis? It is difficult to estimate which proportion of the population has presented anaphylaxis, because studies that have tried to investigate this issue vary widely depending on the authors, countries, study methods, etc. Anaphylaxis is estimated to affect between 3 and 30 individuals per 100,000 people per year. Among these cases, mortality was between 0.05 and 2%. Thus, we see that this is not a very common disease, and that only a few cases become fatal. This means that, for example, in Spain, between 1,500 and 15,000 anaphylaxis probably occur each year, and that fatal cases are between 1 and 300. The relevance of these figures is that many cases could be avoided with good diagnosis and treatment, and given that, in rare cases, the people involved are young individuals, even children, without previous severe illness. FIGURE 1. Activation of mastocytes and basophils What are the most common causes of anaphylaxis? The most common causes of anaphylaxis are medicines, food and stings of bees and wasps. In adults, the main cause is medications, including antibiotics such as penicillins and their derivatives, often followed by aspirin and anti-inflammatory drugs. The second place is occupied by foods, among which are fruits such as peach, nuts and seafood. In children, the most common trigger are foods such as egg, milk, nuts, fish and seafood. Other less common causes are latex, especially relevant in the health context, where rubber gloves are used in most medical examinations and procedures; or anisakis, which is a parasite found in fish. In general, they are not harmful substances in themselves, but harmless products for most people that are not allergic, and that can be found on a day-to-day life in many contexts. In some cases, anaphylaxis may be due to other agents such as exercise or cold. In addition, there are other rare diseases that can manifest clinically with anaphylactic reactions; is the case of mastocytosis, where there is an excess of mast cells that are easily activated, releasing substances that trigger allergic symptoms. In a non-negligible percentage of cases, no specific cause is found, even after a thorough allergenic study. FIGURE 2. Causes of anaphylaxis Source: Anaphylaxis Action Guide: Galaxy. How does anaphylaxis manifest itself? Symptoms of anaphylaxis can be very varied. In general, so that a allergic can be considered anaphylaxis, should affect two or more systems of the body as listed below. Symptoms appear quickly and duration may vary, up to a few hours, depending on the treatment given. In some symptoms of anaphylaxis may recur within a few hours after initial remission. This is called biphasic anaphylaxis. The skin is the most affected organ in anaphylaxis, up to 80% of cases. The most typical symptoms are: Itching, which often begins on the palms or the floor of the feet; in the ear canal or genitals, and which can then be generalized. Heat, which patients occasionally describe as a heat wave. Redness of the skin. Hives, which is characterized by habones (over-elevation of the skin, of varying size and shape, which may have a pale or pink-red color) that produce itching. Swelling of the eyelids, lips, face, genitals or other parts of the body when subcutaneous tissue is affected. Both the upper respiratory tract (nose, throat) and the lower (bronchi) can be complicated in an episode of anaphylaxis. The patient may have nasal congestion, sneezing, nasal itching, foreign body sensation or pressure in the throat (either by swelling of the envula or bell, or by what is known as glottis edema, when this part of the larynx swells), suffocation, cough of pharyngeal involvement, disturbance of the voice (hoarse voice) or difficulty swallowing. If there is significant swelling, salivation sometimes occurs that the patient cannot swallow. When the bronchi are affected, bronchospasm occurs (a kind of asthma crisis), in which the bronchi are closed, making it difficult to pass air, thus leading to asphyxiation, coughing and wheezing (wheezing) in the chest. One system that may also be involved in anaphylaxis reactions is the digestive system. Symptoms that occur include nausea, vomiting, abdominal pain, or diarrhea. The most severe anaphylaxis is when the cardiovascular system is already affected, which is what is known as anaphylactic shock. Lower blood pressure or hypotension may occur, tachycardia with palpitations or neurological symptoms secondary to decreased blood risk, such as dizziness or loss of consciousness. Fatal episodes of anaphylaxis are caused by severe respiratory involvement with laryngeal edema or severe bronchospasm, or by cardiovascular involvement with cardiac arrest. How is anaphylaxis diagnosed? Only clinical suspicion is available to diagnose anaphylaxis; there is no medical evidence that can confirm or dispose of it at this time. Anaphylaxis is suspected when a person develops symptoms of an allergic reaction involving more than one system in the body. Most commonly itching of the skin, redness or hives, and respiratory, digestive or cardiovascular symptoms, especially if they are established more or less quickly, after coming into contact with an allergen known, or not, for that patient. FIGURE 3. Symptoms of anaphylaxis So whenever a person has hives, she should ask herself if she has any other symptoms. However, it should be noted that up to 20% of anaphylaxis episodes can occur without skin involvement. When anaphylaxis is suspected, treatment should be started immediately. Some laboratory tests may help confirm the diagnosis of anaphylaxis, such as histamine or triple in the blood; the latter is the most used nowadays. But these tests are not quick to be performed and therefore you cannot wait for the results before starting treatment; will be used to confirm the suspected diagnosis at a later date. Anaphylaxis should be distinguished from other diseases that can be confused, such as hives, fainting, asthma attacks, among others. How is anaphylaxis treated? Treatment of anaphylaxis should be early and intense. That of a patient with anaphylaxis is not the same if applied on the street, on an outpatient basis, or in a hospital. Available resources and accessibility to hospital care. An ambulance for transfer to an emergency room should be requested quickly on the street (tel. 112). Patients who have had an episode of anaphylaxis should be placed in a comfortable, lying position, with raised legs to increase blood flow to the heart. This position is not recommended in case of vomiting or shortness of breath. Postural changes should be avoided, especially by lifting the patient or standing. Those who are unconscious, with spontaneous breathing, should lie by their side. Pregnant women should be placed on the left side to avoid compression of the vena cava through the pregnant uterus. If the patient is in a medical setting, oxygen will be administered and blood pressure measured. The drug chosen for the treatment of anaphylaxis is intramuscular adrenaline (or epinephrine). It is a drug that acts quickly and improves most symptoms of anaphylaxis. In addition, it is considered that it can improve the survival behind it. Administration of the adrenaline dose can be repeated several times within 5-10 minutes if the response obtained is insufficient. Subsequently, the patient constants will be monitored and given intravenous sera, if necessary. Although its efficacy is not as clear, antihistamines or corticosteroids may be given depending on the circumstances. Antihistamines decrease skin symptoms, and corticosteroids may decrease the likelihood of a relapse of symptoms after (biphasic anaphylaxis). When symptoms of bronchospasm, such as asphyxiation or wheezing in the chest, are present, a bronchodilator inhaler like those used to relieve bronchial asthma will be given. What is adrenaline and how does it work? Adrenaline is a substance produced by the human body; is synthesized in the adrenal glands in stressful or risky situations. Its main actions are to increase blood pressure, decrease swelling of the skin and mucous membranes, open the bronchi and improve the passage of air, as well as block the release of substances by cells involved in anaphylaxis (mast cells and basophils). It used to be used subcutaneously, but it has been shown that a faster effect is achieved if administered intramuscular. The intravenous route is reserved for use in specialized medical units. Adrenaline usually causes mild side effects; the most common are tremors, nervousness and palpitations. Occasionally, it can cause more serious side effects such as cardiac arrhythmias, angina or heart attack, pulmonary edema, hypertension crisis, or intracranial bleeding. These serious side effects occur most often in case of overdose or if the patient has already had a history of previous heart disease, hypertension, hyperthyroidism (excessive production of thyroid hormones); if you are being treated with certain types of medications (some antidepressants), or if you use cocaine. Therefore, in these circumstances, the risk-benefit ratio for the use of adrenaline should always be carefully considered. What should a patient do after having had anaphylaxis? When a patient develops anaphylaxis, and has been seen in ER, he should remain under observation for a few hours to ensure that the response to treatment is adequate and that symptoms do not recur. After discharge, you should receive a full medical report, which contains maximum information about possible causes, medical constants, examinations performed and administered treatment. Subsequently, it should preferably be referred to the allergist to determine what the trigger was and how to avoid it, and to educate the patient and his/her family members about what to do in case they present a new anaphylaxis. Patients who have already had a previous anaphylactic reaction often recognize symptoms when new anaphylaxis is initiated. The patient should be instructed to identify the signs/symptoms that suggest the onset of anaphylaxis, to initiate an action plan consisting of: Inform a companion of the situation (if possible). Consider whether auto-injecting adrenaline should be administered and, if so, do so immediately. Locate the nearest emergency phone (112) or the emergency room. patients should carry emergency equipment with them, including self-injecting adrenaline. In all cases of patients who have had anaphylaxis, the need to indicate a medical warning board or wristband about their allergy should be valued. Can the patient inject the adrenaline alone? Currently there are self-injecting adrenaline devices that allow the patient to apply it in case of anaphylactic reaction. These devices are a kind of easy-to-use pens that provide an adequate dose of adrenaline intramuscular. There are several different doses so that they can be used in adults and children. These adrenaline autoinjectors are prescribed for patients who have the possibility to develop anaphylaxis; usually because they have previously suffered one, and they cannot be absolutely sure that they can escape the allergen responsible. Use of an adrenaline auto-injector. (Credits, F. 129) Both patients and their close friends should receive education and training in the use of the autoinjector and regularly practice its use with an appropriate training device, so that they know what to do in emergency situations. When an anaphylactic reaction occurs, the patient should always go to a medical emergency after the use of an adrenaline auto-injector. How does the allergist look for the cause of anaphylaxis? The first thing the allergic doctor will do is develop a very complete medical history. This is the main step that will allow you to find a suspicion about the cause in most cases. From here you will plan a series of tests that may consist of allergic skin tests (bites or intradermal tests), blood tests, or even a test that involves administering the suspect agent in small doses to see if the reaction occurs again. This last test is not without risk and should always be performed in a hospital with the appropriate safety conditions to be able to control and treat a possible reaction. When the allergist has completed the study, you should write a report to the patient, telling him what he is allergic to, what to avoid, and what to do if he or she has a new reaction. It is important that copies of this report be made and forwarded to physicians visiting the patient. The patient should always keep the original document with him. Original.