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Anaphylaxis

Anafilaksja

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Anaphylaxis is recently becoming an increasingly popular issue among allergists, particularly upon fatigue with asthma matters. The paper “Anaphylaxis as a cause of hospitalization — a single academic centre experience” published in this issue of “Polish Pneumonology and Allergology” follows this trend [1].

Anaphylaxis is a severe, life-threatening, generalised or systemic hypersensitivity reaction, with objective and repeatable symptoms triggered by a certain stimulus at a dose well tolerated by healthy individuals.

The origins of anaphylaxis do not date back to ancient times, as one author bantered about Pharaoh Menes who might have died from wasp sting [2]. Although anaphylaxis has been defined for the first time more than 100 years ago, to date it has not been included in international classifications of diseases. This fact has serious consequences, as while analysing the significance of the reaction, one cannot rely on data included in such classifications. In order to obtain elementary epidemiology rates and various clinical aspects of anaphylaxis, it is necessary to initiate dedicated studies.

American studies suggest that the notion of anaphylaxis is poorly known in the society [3]. As many as 7.7% of the respondents believed that they had an anaphylactic reaction, but verification proved that in 5.1% of cases it was probable, and solely in 1.6% certain. Not only the knowledge of patients but also the way they

follow doctor’s orders cannot be considered satisfying. At the beginning of the current century, food-induced anaphylaxis accounted merely for 10% of cases, currently, particularly in Europe, it is believed to be a major factor causing anaphylaxis (more than 30%) [4]. It is worth mentioning that in approximately 30% of cases, anaphylaxis is triggered by the activity of at least two factors in close temporal relationship: allergen and/or physical exercise, cooling, alcohol consumption, medication, infection etc. These additional factors are referred to as cofactors [5].

On the one hand the risk of anaphylaxis depends on external factors, but on the other it depends on the properties of an organism. The highest individual risk of anaphylaxis occurs when it is necessary to reexpose the patient to a factor that is suspected to induce the episode of anaphylaxis (provocation tests, venom immunotherapy). It is known that women are at higher risk, which is caused by enhanced endothelial nitric oxide synthase through estrogen [6], anaphylaxis is also more common in people with mastocytosis [7] and those using beta blockers and/or ACE inhibitors [8]. The presented study has not confirmed more frequent occurrence of anaphylaxis in women, possibly because it analysed solely severe cases necessitating hospitalisation.

Anaphylactic reactions may be mild (e.g. oral allergy syndrome, conditioned upon cross

reactivity of pollen allergens of plants, fruits, vegetables and cereal) or severe, life-threatening leading to anaphylactic shock (peanuts, insect venom). Specific properties that distinguish individuals who react so violently, are being sought. It seems that in such individuals, after the release of mediators from mast cells, a large quantity of platelet-activating factor is generated, with its strong vasoplegic qualities being the result of disordered cellular enzymatic mechanisms of this factor inactivation. And such persons being allergic e.g. to peanuts or insect venom, with platelet activating factor-acetylhydrolase defect, which is an enzyme restoring this factor to inactive form, often experience severe, life-threatening reactions [9, 10].

It is assumed that clinical picture of anaphylaxis, although heterogeneous, does not depend on the causative agent. The results of the published study seem to confirm this theory. However, it should be emphasised that the episodes of anaphylaxis in the same patient may differ in the order of symptoms occurrence, particular organs affection, the course (severity), duration (phase) and effects (complications). Development of severe reactions, next to the properties of an organism, in great measure depends on the way of administration (activity) of the causative agent [11]. Yet even food-induced anaphylaxis may take a violent course, end with a death, although it may also develop slowly, last longer and pass through several phases, despite proper treatment. The most dangerous reactions are obstruction of the upper and lower airways (approximately 50%) and cardiovascular events (about 35%), which may result in anaphylactic shock [12]. From a practical point of view, in the emergency setting, it is crucial to differentiate between severe anaphylaxis and vasovagal reaction (syncope). In the case of the latter, which is more common, contrary to anaphylaxis, the skin is generally cool and pale, there is no urticaria, oedema, pruritus, bronchial obstruction or nausea, but usually bradycardia occurs.

There are many studies regarding the management of severe anaphylaxis [12, 13]. Although help provided depends on the available possibilities, the most important are the following: diagnosis, removal of the causative agent (if possible), assurance of the assistance of other people, assurance of patency of the airways. If adrenaline is available (a patient often possesses it), it should be administered. It is also vital to supplement liquids, give oxygen and assure that the patient is taken to hospital. Having the episode under

control, the patient should receive adrenaline for self-administration and other medicines in the event of a future anaphylactic reaction. If the cause of the reaction remains unknown, the patient should be referred to an allergist in order to attempt to establish it.

According to recently published studies, early prevention of allergy to peanuts, which is a common cause of fatal anaphylaxis, should start in 4-month old infants from risk groups (eczema) [14]. Administration of small quantities of peanut butter to such infants has decreased by 80% the risk of future allergy. The results of the studies are the next argument for earlier than it was believed, i.e. starting in the 4th month of life, introduction of solid food to the diet of infants. Unfortunately, the results of the researches regarding desensitization in food allergy have not brought about so spectacular effects (oral immunotherapy), or they are still at early stages of investigation (epicutaneous immunotherapy) [15].

Conflict of interest

The author declares no conflict of interest.

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