ANAPHYLAXIS AFTER IMMUNIZATION

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INTRODUCTION

Control, record and analysis of side effects following immunization play a vital role in ensuring the safety of vaccination

Adverse Events Following Immunization (AEFI) - unforeseen adverse body reactions to immunobiological drugs administration at the dose specified in the instructions for use

Anaphylaxis - is a potentially fatal generalized hypersensitivity reaction

Anaphylaxis clinical presentation - is a symptom complex, including cardiovascular, cutaneous, respiratory, gastrointestinal and other symptoms to a variable degree of its combination

Reducing the number of such serious vaccine-associated reactions is high-priority problem facing allergologists-immunologists and pediatricians

The actual prevalence of anaphylaxis during immunization is unknown

Under-Diagnosis of anaphylaxis - numerous variations in the clinical presentation of the disease (e.g., in terms of severity - from minor to fatal, a combination of symptoms - the presence or absence of urticaria, symptoms from various systems, etc., the age of the patient)

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CASE PRESENTATION SUMMARY

According to official data, for the period 2012-2017 in the Republic of Belarus 22 serious AEFI (except abscesses) were recorded

5 cases of anaphylaxis were among them

The structure of the AEFI is shown in the diagram

The age of the patients ranged from 7 to 58 years. 2 cases of anaphylaxis were recorded in children at the age of 7 and 17 years

Characteristics of the cases of postvaccination anaphylaxis are summarized in Table

Emergency care for patients was provided in accordance with the national protocols for managing patients with anaphylaxis

THE STRUCTURE OF SEVERE AEFI FOR THE PERIOD 2012-2017 IN THE REPUBLIC OF BELARUS

- Anaphylaxis
- Convulsive syndrome
- Angioedema+urticaria
- Hyperthermal syndrome
- Serum sickness
- Thrombocytopenic purpura
- Severe local reaction

In a year - in the Republic of Belarus - about 10 000 000 vaccine doses are introduced

Average frequency - 1.31 / 1 000 000 doses*

Theoretically – we expect 13 cases of anaphylaxis in the Republic of Belarus

In fact, we have 5 cases of anaphylaxis for 6 years (0.83 / y) or 15.6 times less than the expected number

Where are the remaining cases of anaphylaxis?

ANAPHYLAXIS CASES CHARACTERISTICS

Patient age, y/sex	Vaccine/serum	Onset after vaccination	Symptoms	Outcome	Prevalence in year of detection	Prevalence for the entire period of observation
31/M	dT	onset immediate	isolated critical blood pressure	patient recovered	3.23 cases per 1,000,000 doses	0.52 cases per 1,000,000 doses
17/F	dT	onset <15 min	gastrointestinal and cardiovascular	patient recovered	0.67 cases per 1,000,000 doses	
42/M	anti-tetanus anatoxin	onset <60 min	cutaneous and cardiovascular	patient recovered	11.9 cases per 1,000,000 doses anti-tetanus anatoxin	2,73 cases per 1,000,000 doses anti-tetanus anatoxin
	antitetanic serum				61.6 cases per 1,000,000 doses antitetanic serum	1.8 cases per 1,000,000 doses antitetanic serum
58/M	anti-botulinic serum type A	onset <10 min	cardiovascular and respiratory	patient recovered	1 to 28 doses	1 to 279 doses
7/F	RV MMR	onset immediate	weakness, pallor, a single vomiting, rapid loss of consciousness with a lack of pulse and respiration	fatal	4.7 cases per 1,000,000 doses	0.77 cases per 1,000,000 doses

REFERENCES

*Michael M. McNeil, Eric S. Weintraub et al. Risk of anaphylaxis after vaccination in children and adults. J Allergy Clin Immunol. 2016 Mar; 137(3): 868-878. doi: 10.1016/j.jaci.2015.07.048