

Pediatricians' knowledge about recent advances in anaphylaxis treatment in İstanbul, Turkey

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Severe anaphylactic reactions are medical emergencies in children and require immediate recognition and treatment. Many advances have been reported recently in the treatment of anaphylaxis. Despite this, little is known about whether or not these advances are known by all pediatricians. To evaluate the knowledge of pediatricians on the recent advances in the treatment of anaphylaxis, some pediatricians from İstanbul were asked to complete an anonymous questionnaire. A total of 124 pediatricians agreed to participate in the study. Most attendants (92%) knew epinephrine as the first drug in the treatment of anaphylaxis, but more pediatricians (65%) also preferred subcutaneous route as the most effective route for injection. In addition, more than 80% did not know the trademarks of epinephrine autoinjectors or the amount of the drug in the autoinjectors. Our data show that the level of pediatricians' knowledge about recent advances in the management of anaphylaxis is unsatisfactory. Pediatricians' failure to know recent advances in the management of anaphylaxis may endanger children when assistance is required. Educational programs aimed at improving the general knowledge of pediatricians on recent advances in anaphylaxis are urgently needed.

Key words: anaphylaxis, pediatrician, allergy, epinephrine.

Anaphylaxis is one of the most urgent of clinical allergic events in every field of medicine, affecting between 1% and 2% of the general population¹. For many years, epinephrine has been accepted as the first drug of choice to be used in the therapy of anaphylaxis, without any significant changes in the dosage and administration route². However, a few years ago, it was shown that epinephrine given via intramuscular (i.m.) route is more effective than by subcutaneous route³, which has been assumed as the administration route of choice for many decades⁴.

Since this important improvement in the field of medicine has taken place mainly in allergy and clinical immunology, we do not know whether pediatricians other than allergists and immunologists are familiar with these advances⁵⁻⁷. This study was performed to ascertain whether or not pediatricians, who may see cases with anaphylaxis in their daily practice, are aware of the recent advances in the management of anaphylaxis.

Material and Methods

The study was undertaken among pediatricians from various hospitals of İstanbul during various medical meetings for pediatricians in the city. For this purpose, a questionnaire designed to document the general knowledge of pediatricians on the management of anaphylaxis as well as on recent advances in the field of anaphylaxis treatment was distributed on site, and physicians were asked to respond to the questions without disclosing their identifications. The survey consisted of 10 questions: two pertained to demographic data and the remaining eight to the management of anaphylaxis (Table I). The questionnaire also included items about tradenames of epinephrine autoinjectors for pediatric use.

Results

The questionnaire was returned by 124/224 (65%) pediatricians. Eighty of the pediatricians were female and the mean age of attendants

Table I. Questionnaire Items and Responses of the Pediatricians

	n	%
Have you ever seen any case with ANP?	2	1.6
Which drug should be used as the first choice in the management of ANP?		
Epinephrine	114	92
Antihistamines	4	3.2
Corticosteroids	6	4.8
Which route do you prefer as the initial route for epinephrine injection?		
Intramuscular	42	34
Subcutaneous	80	64.5
Intravenous	2	1.5
What is the dose of epinephrine in a 20 kg child?	102 ⁽¹⁾	82.2
Do you know any trademark of epinephrine autoinjectors?	22 ⁽¹⁾	17.8
What is the amount of epinephrine in the child form of autoinjectors?	4 ⁽¹⁾	3.2
When do the effects of corticosteroids begin after systemic intake?		
Soon	12	9.7
In 1-2 hours	36	29
In 3-4 hours	32	25.8
In 6 hours	44	35.5
Which antihistamines should be preferred in the treatment of ANP?		
H1 antihistamines alone	52	42
H2 antihistamines alone	10	8
H1 plus H2 antihistamines	55	44.4
The new generation antihistamines	7	5.6

ANP: Anaphylaxis.

⁽¹⁾ The number of correct answers.

was 36 ± 3.5 years. The mean period in pediatric practice was 8.4 years. According to the results of the questionnaire, most attendants (92%) knew epinephrine as the first drug in the treatment of anaphylaxis, but only 34% of the doctors answered that epinephrine should be used via the i.m. route as the preferred initial route when required (Table I). Most doctors (82.3%) did not know any trademarks of the epinephrine autoinjectors and 96.8% of them did not know the amount of the drug in the autoinjectors. About 3.2% of the pediatricians considered antihistamines and 4.8% corticosteroids to be the first-line therapy in anaphylaxis.

Discussion

Anaphylaxis is one of the most urgent clinical pictures in daily medical practice and should be diagnosed and treated as soon as possible^{1,8}. Since anaphylaxis may occur anywhere – especially in medical settings – all pediatricians should know how to diagnose and treat anaphylaxis in the light of recent advances⁹.

Epinephrine is the drug of choice and the mainstay of therapy of anaphylaxis, and subsequent therapeutic intervention depends on the clinical

response to this drug^{10,11}. Until 10-15 years ago, it had been accepted that the subcutaneous route was the preferred route for epinephrine⁴. Simons et al.³ showed that epinephrine is more effective when given by the i.m. route in the management of anaphylaxis¹⁰. Unfortunately, this very important change has not yet been reflected in general textbooks, academic programs in medical schools or in pediatric congresses¹². As a result of this delay, many pediatricians from our group still believe that the subcutaneous route of epinephrine is the route of choice. Thus, we think any development concerning the majority of the pediatricians should be published in general pediatrics journals with a wide readership rather than only in subspecialty journals.

Although ampule form of epinephrine is not expensive to manufacture, autoinjector forms of epinephrine are very expensive even in developed countries¹³. However, the principal problem with epinephrine autoinjectors is the lack of availability of these drugs in our country and in many other developing countries¹³. As such, the unfamiliarity of the pediatricians from our study group with the trademarks of autoinjectors can be appreciated. When required, prescriptions for

epinephrine autoinjectors are sent abroad by the patients to obtain the drugs, which increases the cost that is already considered prohibitive in this country. We believe the manufacturers of epinephrine autoinjectors should adjust the prices for developing countries and should familiarize the non-allergist pediatrician about these drugs.

Corticosteroids have a delayed onset of action and do not reverse the cardiovascular effects of anaphylaxis and should not be used in place of epinephrine and H1 antihistamines¹⁴. Nevertheless, corticosteroids were indicated as the first-line drug choice in the management of anaphylaxis according to some of the respondents from our study group.

In conclusion, many significant developments have been reported in recent years in the management of anaphylaxis. Unfortunately, most of the pediatricians who may encounter such patients in their daily practice do not seem to be aware of these advances. Significant advances in any field of pediatrics should be reflected in general pediatric textbooks, lectures and journals in addition to the subspecialties as soon as possible to inform general pediatricians accordingly.

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