Pre-hospital anaphylaxis severity and the applied therapy

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Aim: Rapid diagnosis of anaphylaxis and prompt, appropriate therapy are a prerequisite for saving life. The aim of this study was to examine the prehospital method of diagnosis, assessment of the severity of anaphylaxis and choice of therapeutic procedures. **Materials and methods:** The study involved 182 patients in the Tuzla area with acute allergic reactions that met the clinical criteria for the 2006 diagnosis of anaphylaxis NIAID / FAAN (National Institute of Allergy and Infectious Diseases / Food Allergy and Anaphylaxis Network). Based on the site of treatment, in emergency medical service and primary health care clinics, patients were divided into two groups. The frequency of symptoms, the applied drugs and the final outcome of the prehospital treatment were compared. **Results:** A total of 182 patients were analyzed, primary health care clinics N = 118 (64.8%), emergency medical service N = 64 (35.2%). Cardiovascular symptomatology of anaphylaxis was more represented in emergency medical emergency medical department (p = 0.024). Adrenaline was administered at 9 (14.1%) patients with emergency medical care, in primary health care clinics at 22 (18.6%). Statistically is a significant difference in relation to the place of treatment. Statistically higher number of patients in emergency medical care had fluid replacement, antihistamines and glucocorticoids applied (p <0.05). Larger number of patients in emergency medical care had a volume recovery, antihistamines, glucocorticoids (p <0.05). Larger number of patients in emergency medical care had a volume recovery, antihistamines, glucocorticoids (p <0.05). In emergency medical department had prehospital finished treatment of anaphylaxis 53 patients with anaphylaxis (82.8%) , in primary health care clinics had 30 (25.4%). Statistically a significant number of patients from primary health care clinics refer to clinical-hospital treatment (p <0.05). **Conclusion:** Due to different presentation and a small number of standardized diagnostic criteria, there is no unique approach in diagnosing and treating anaphylaxis. Adrenaline must be a medication of choice in anaphylaxis. Future researches should provide precise but simple guidelines for diagnosis and therapy of anaphylaxis.

Table 1. Symptoms listed by organ criteria for the diagnosis of anaphylaxis (n = 182)

Symptoms	Emergency medical services n = 64 (%)	Family doctors practice n = 118 (%)	p value
Skin	57(89,1)	106(89,8)	1,0
Generalized itching	46(71,8)	92(77,9)	
Generalized flushing/erythema	16(25,0)	58(49,1)	
Generalized urticaria	41(64,1)	34(28,8)	
Subcutaneous tissue and mucosa	48(75,0)	93(78,8)	0,69
Localized angioedema	21(32,8)	54(45,8)	
Generalized angioedema	27(42,2)	39(33,0)	
Respiratory tract	31(48,4)	52(44,1)	0,16
Sensation of throat tightness	27(42,2)	38(32,2)	
Throat itching	13(20,0)	14(11,9)	
Hoarseness	27(42,2)	24(20,3)	
Wheezing/bronchospasm	31(48,4)	46(38,9)	
Gastrointestinal tract	16(25,0)	42(35,6)	0,19
Dysphagia	9 (14,1)	26 (22,0)	
Abdominal pain	16 (25,0)	30 (25,4)	
Nausea	6 (9,4)	12 (10,2)	
Vomiting	11(17,2)	22 (18,6)	
Diarrhea	9(14,1)	13 (11,0)	
Cardiovascular system	21(32,8)	20(16,9)	0,024
Tachycardia ^a	18(28,1)	12(10,2)	
Mild Hypotension ^b	12(18,7)	15(12,7)	
Severe hypotension ^c	7(10,9)	7(5,9)	
Urinary or fecal incontinence	4(6,2)	3(2,5)	
Central Nervous System	17(26,5)	23(19,5)	0,36
Uneasiness	2(3,1)	5 (4,2)	
Altered mental status	7(10,9)	12(10,2)	
Dizziness	7(10,9)	12(10,2)	
Loss of consciousness	3(4,7)	5(4,2)	
^a Heart rate above or equal to 100 beats per minute			
^b Systolic blood pressure between 110 and 90 mmHg according to references [1, 12]			
^c Systolic blood pressure below 90 mmHg according to references [1, 12]			

Table 2. Prehospital therapies of anaphylaxis Emergency medical services and Family doctors practice (n=182)

Treatment	Emergency medical services n = 64 (%)	Family doctors practice n = 118 (%)	p value
Adrenaline	9(14,1)	22(18,6)	0,30
Intravenous fluids	45(70,3)	44(37,3)	<0,001
Antihistamines H1	62(96,9)	71(60,2)	0,004
Glucocorticoids	63(98,4)	98(83,0)	0,02
Intravenous Ranitidine	62(96,9)	2 (1,7)	<0,001
Inhalative Salbutamol	9(14,1)	12(10,2)	0,83
Intravenous Aminophyllin	18(28,1)	7 (5,9)	<0,001

Table 3. Outcome of pre- hospital treatment of anaphylaxis in Emergency medical services and Family doctors practice (n=182)

Outcome treatment	Emergency medical services n = 64 (%)	Family doctors practice n = 118 (%)	p value
Pre-hospital completed	53(82,8)	30(25,4)	<0,001
Clinical	5(7,8)	27(22,9)	<0,001
Hospitalization	6(9,4)	61(51,7)	<0,001