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Identification of Clinical and Laboratory Changes in Acute Pneumonia in Young Children Living in an Unfavorable Ecological Environment (In Khorezm Region)

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Abstract

Object: To study the clinical features of children with acute pneumonia living in an environmentally unfavorable environment.

Methods: 165 children from 1 to 3 years of age living in different regional conditions with acute non-hospitalized acute illness were examined, including 120 patients permanently living in the Aral Sea region (Khorezm region) and 45 patients living in Tashkent (comparison group). children were examined. The hemostasis system was studied on the basis of diagnostic anamnesis, clinical signs, instrumental and laboratory diagnoses.

Results: In determining the severity of the clinical course of Zotiljam's disease, anamnestic data, the severity of external respiratory dysfunction and signs of intoxication, radiological changes in the lungs, information on the condition of the cardiovascular system, as well as the severity of disorders in other organs and systems were taken into account. Among the complaints of parents about the condition of their children, the most common was an increase in body temperature from 38.60 to 40.10 C and persisted for 6-8 days. High temperatures were recorded in the majority of children living in the Khorezm region (39.8 ± 1.20C compared to 38.9 ± 1.30C). At admission, the general condition of the children was assessed as moderately severe in 51.7% of cases in the main group and severe in 48.3% of cases, severe in 42.2% of cases in the control group, and moderately severe in 55% of cases. Children from Khorezm

Although children living in Tashkent were more often hospitalized in critical condition, the data were not reliable (R> 0.05).

Keywords: acute pneumonia, ecology, clinic, laboratory.

The ecology and health of the population of the Aral Sea region is an urgent problem not only for Uzbekistan, but also for the entire world community. The unfavorable environmental situation is a heavy burden on the entire population of the Republic of Karakalpakstan, but children are especially affected, since the child's body, due to the functional immaturity of tissues and systems of adaptation and protection, is especially sensitive to the influence of environmental factors. Changes in ecology in the Aral Sea region are reflected in the health of the younger generation in many ways, it is an increased incidence of respiratory diseases, among which acute respiratory infections, bronchitis and pneumonia come out on top. According to the World Health Organization (WHO), pneumonia is the most frequent cause of death of children in the world, in particular, in the structure of mortality among children under 5 years of age, it is 17.5%, annually claiming the lives of about 1.1 million children in

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this age group (WHO, 2016). The prevalence of pneumonia among children and adolescents in the Republic of Uzbekistan ranges from 17.7% to 19.5%.

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2.1. Table. The general condition of children with out-of-hospital acute pneumonia

General condition when taken	The main group (n=120)		Control group (n=45)	
	abc	%	abc	%
Moderate severe	62	51,7	26	57,8
Severe	58	48,3	19	42,2

In patients, focal shadows of different sizes were detected on the radiograph. In most cases, emphysema (enlargement of the rib space, low diaphragm, increased lung area clarity), infiltration of peribronchial and perivascular tissue took root, and an increase in lung images was noted. In 42 (28%) children, enlargement of the thoracic cavity due to enlargement of the thymus was observed, which is an adaptive response of the immune response to infectious stress, especially in the first stage of the pneumonic process in viremia.

The configuration of the heart shadow is usually unchanged, but in some cases dilatation of the vascular bundle, enlargement of the left ventricular border, and flattening of the lumbar region have been note(2.1.table).

Distribution of children according to the form of out-of-hospital acute pneumonia

According to the shape	The main group (n=120)		Control group (n=45)		Data reliability,P<
	abc	%	abc	%	
focal pneumonia	86	71,1	25	55,6	-
focal confluent pneumonia	31	25,8	14	31,1	-
segmental pneumonia	3	2,5	6	13,3	P< 0,05

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In terms of morphological forms: the furnace zotiljam was more common in the main group (71.7% vs. 55.6%, respectively), and the segmental type was less common (25.8% vs. 31.1%, respectively), but the indicators are not reliable. . In the control group, more fragmented zotiljam disease (13.3%) was reported, while in the main group, its share was 2.5% (R <0.05).

2.3. table. Distribution of groups in acute zotiljam disease according to the localization process

Localization	The main group (n=120)	Control group (n=45)	Data reliability,P<
Left-sided pneumonia (n/%)	7/5,8	4/8,9	-
Right-sided pneumonia (n/%)	48/40	23/51,1	-
Bilateral pneumonia (n /%)	65/54,2	18/40	<0,05

In the majority of children examined, 65 (54.2%) children in Khorezm region had bilateral aneurysms, 18 (40%) in the control group, and right-sided aneurysms in both groups (40% and 51.1; R <0.05, respectively). 7 (5.8%) reported more left-sided zotiljam disease (57.5% compared to 20%;),

In the main group, cough was observed in 100% of cases, in the control group - 55.6% (R <0.01), shortness of breath - 73.3% and 40.0% (R <0.05), respectively, sleep disorders - 86, respectively. , 7% and 66.7% (R <0.01), paleness - 86.7% i v 60.0%, respectively, loss of appetite was observed in 100% of cases in the main group and 80% in the control group.

All the children were conscious. Against the background of frequent morbidity in the main group of children, the course of zotiljam disease was very severe, with complications in 74 (61.7%) patients.

The severity of the disease is associated with the presence of syndromes that aggravate its course. In all children, the initial period of the disease was marked by obvious signs of intoxication, hemodynamic disturbances, respiratory failure, and damage to other organs and systems.

Objective examination of children in the main group revealed obvious signs of intoxication and respiratory failure, manifested by hyperthermia syndrome (average body temperature 39.9 ± 0.10), hyperventilation with an average respiratory rate of 77.2 ± 0.2 per minute. Wet cough was observed in 85.7% of children.

Acute respiratory failure was observed in all patients in both groups, of which NE1 - 10.6% and 22.2% (R <0.05), respectively; NE2 was observed in 57.5% and 53.3% of cases, respectively, and NE 3 was observed in 31.7% and 24.4% of cases, respectively. 73.3% of children in the main group and 40.0% of children in the control group reported shortness of breath at rest. It was accompanied by a change in the frequency and depth of breathing, it was superficial in front, the rhythm changed, pauses and periods of acceleration, apneas appeared.

At very high levels of toxicosis, inhalation was highly toxic (in four patients). In all cases, swelling and tightening of the nasal wings, involvement of auxiliary muscles in breathing, and sinking of the lower part of the chest were noted.

Respiratory rate ranged from 50 to 70 beats per minute. Mixed shortness of breath was observed — followed by the appearance of dry wheezing, which was especially prevalent in the main group of children (Table 2.3.).

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2.3. Table. Frequency of occurrence of the main clinical signs of out-of-hospital morbidity in children in the comparatively studied groups

Clinical signs	The main group (n=120)		Control group (n=45)		χ^2	P
	абс.	%	абс.	%		
Weakness	61	50,8	32	71,1	4,45	<0,05
Appetite disorders	120	100,0	36	80,0	3,32	>0,05
Sleep disorders	104	86,7	30	66,7	2,87	>0,05
Dryness of the skin	94	78,3	17	37,8	2,48	<0,05
Skin discoloration	104	86,7	27	60,0	0,62	>0,05
Cyanosis of the nasolabial triangle	87	72,5	20	44,4	1,91	>0,05
Temperature::	118	98,3	21	46,7	8,63	<0,05
subfebrile	31	25,8	9	20,0	0,49	>0,05
febril	106	88,3	16	35,6	7,81	<0,05
suffocation	88	73,3	18	40,0	0,71	>0,05
Oral wheezing	106	88,3	9	20,0	15,31	<0,01
Cough: - dry	45	37,5	7	15,6	6,66	<0,05
moist cough	75	62,5	18	40,0	0,66	>0,05
Percussion: shortened	68	56,7	36	80,0	7,27	>0,05
The sound of the box	26	21,7	9	20,0	0,07	>0,05
Auscultation:						
- rough breathing	45	37,5	32	71,1	0,97	>0,05
- shortness of breath	66	55,0	14	31,1	0,65	>0,05
Whistling: dry	45	37,5	32	71,1	1,07	>0,05
wet wheezing	66	55,0	14	31,1	0,58	>0,05

In 68 children in the main group (56.7%) there was a decrease in lung volume on pulmonary percussion, while in the control group this figure was 80.0%; box sound was observed in 26 children in the main group and 9 children in the control group (21.7% and 20.0%, respectively).

During pulmonary auscultation in 45 children (37.5%) in the main group and 32 (71.1%) children in the control group - dry wheezing on the background of rough breathing, 66 people in the main group (55.0%) and 14 people in the control group (31 , 1%) shortness of breath in children, 32 (21.3%) patients with small wheezing wet wheezing

Hemodynamic disturbances were manifested in most children with pale skin, tachycardia, and suffocation of heart tones. These symptoms were particularly pronounced in patients with leading cardiovascular syndrome.

In 108 (72%) of the children in the main group, changes in peripheral pulse rate to beats, a decrease in blood pressure, and systolic murmur in the apex of the heart were detected in 32 (21.3%) patients. In 55 patients (36.6%), the gray-yellow color of the skin, its marbling, a decrease in blood pressure, and a pulse were indicative of vascular insufficiency.

These symptoms were assessed by our research as peripheral circulatory system damage in the form of vasomotor or vasoregulatory collapse as a result of exposure to microbial toxins and pathological reflexes from inflammatory foci to the lungs in outpatient zotiljam disease.

In the main group of patients there was a clear trend for changes in SLE: heart murmurs, tachycardia,

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systolic murmur and moderate increase in blood pressure, ECG - sinus tachycardia in 83 (55.3%) children, signs of left ventricular fibrillation, 21 (14%) showed signs of ST segment shift in the patient.

In addition, a number of patients were diagnosed with transient arrhythmia and incomplete blockade of the right leg of the Giss tumor, impaired conduction along the subcortical myocardium. Changes in this ECG are often indicative of metabolic changes in the myocardium due to electrolyte imbalance

In the control group, systolic murmur was observed in only 12 (30%) children. However, ECG analysis in each individual follow-up was of great practical importance because it helped to identify and clarify the nature of the disturbances.

Obstructive syndrome, cardiorespiratory syndrome in 60 (50%), carditis from extrapulmonary complications in 39 (32.5%) children and 6 (5.0%) in 10 (8.3%) of the main group of children in the analysis of complications of nosocomial disease.) were reported to have sepsis. In the control group, 2 (4.4%) children had obstructive syndrome (R <0.05), 11 (24.4%) had cardiorespiratory syndrome, and sepsis was not observed.

Conclusions:

1. Thus, a comparative analysis of the clinical picture of out-of-hospital zotiljam allows us to talk about a more positive course of the disease in children living in Tashkent (control group).

2. As for the differences in the clinical course of the disease in children, it should first be noted that the clinical manifestations of the disease have the same characteristics in both groups of patients.

3. There are significant differences in the frequency of complications in children in the Khorezm region, the severity of the main symptoms of the disease, the duration of their elimination in the background of the therapy, the nature of the prognosis.

4. The main clinical signs of the disease in children of Khorezm region are severe general condition, high fever lasting 6-7 days, mainly dry cough, respiratory and cardiovascular insufficiency II-III degree, the main clinical sign of expiratory dyspnea in children living in Tashkent served as.

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