



**METHOD FOR OPTIMIZING THE TREATMENT OF ACUTE  
RESPIRATORY DISEASES IN CHILDREN  
СПОСОБ ОПТИМИЗАЦИИ ЛЕЧЕНИЯ ОСТРЫХ РЕСПИРАТОРНЫХ  
ЗАБОЛЕВАНИЙ У ДЕТЕЙ**

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**Abstract.** *The results of treatment of children with acute respiratory tract diseases using the medicament Bon-appetit during a period of decreased activity of the inflammatory process are presented. The medicament is well tolerated (85%) with minor side effects (14% - bowel disorder, drowsiness, thirst). Normalization of acute phase parameters was observed, and external respiration function was restored faster. The use of the medicament Bon-appetit during the recovery period contributed to the relief of the main symptoms of the disease of the middle and lower respiratory tract due to its anti-inflammatory, expectorant, antioxidant, antitoxic, immunomodulatory and restorative effects.*

**Keywords:** *appetite, children, Bon-appetite, bronchitis, pneumonia.*

### **Introduction.**

The widespread of pathology of the respiratory system (45-60%) in the structure of general morbidity, the increase in frequency in recent years in all developed countries, the tendency for a protracted, recurrent course and high mortality determine the relevance of increasing the effectiveness of treatment of children with respiratory diseases [1, 2]. Of particular importance is the treatment of bronchitis and pneumonia, the frequency of which is not decreasing and averages about 1000 cases per 100,000 population [4, 5, 6, 7]. At the same time, there is an increase in these diseases in children of large cities and megalopolises due to the immunosuppressive effect of xenobiotics, which also inhibit air conditioning and mechanical air purification systems [3].

In a child's body after acute respiratory diseases, immunological and biochemical changes persist for a long time and autonomic dysfunctions appear [1, 2, 3, 5]. Appetite is one of the indicators of the degree of intoxication, hypoxia, liver dysfunction and metabolism [3].

With all acute diseases, manifested by pain, increased body temperature, lack of oxygen, the child, as a rule, refuses to eat. This reaction is biologically appropriate to reduce the load on the liver and enhance its detoxification, immune and metabolic



functions. Gradually, appetite is restored as endogenous intoxication decreases [1, 2, 3]. But to speed up recovery, it is important that the child begins to eat food with desire and that all components of food products contribute to the restoration of impaired functions of various body systems.

### **Research objectives.**

Studying the effect of the medicinal drug Bon-appetit (American Norton Corporation, USA) on the dynamics of appetite and the course of the underlying disease; its tolerability and side effects, as well as comparison of treatment results in the study and control groups.

### **Main text.**

The observation was carried out in children aged from 4 to 17 years, who were treated at the Odessa Children's City Hospital No 1.

The children were divided into 3 groups: I – 80 children with acute simple bronchitis, II -80 with acute obstructive bronchitis, III – 80 with acute pneumonia. The children of each group were divided into 2 groups of equal size (40 children each) and comparable in condition - the main and control groups.

Verification of the diagnosis and prescribed therapy complied with the protocols of the Ministry of Health of Ukraine for the management of this pathology. In the complex of treatment of children of the main groups, starting from 4-5 days for bronchitis and 5-7 days for pneumonia after normalization of temperature, reduction of symptoms of intoxication and inflammatory changes in the hemogram, Bon-appetite was additionally included in an age-appropriate dosage (3-5-10 ml) 3 times a day for 28 days. Bon-appetite was chosen due to the multifaceted effects on the body of the medicinal herbs included in its composition, its convenient form of release (syrup) for children and its affordable price. Thus, the medicament Bon-appetite, in addition to enhancing appetite and stimulating taste buds, has a pronounced anti-inflammatory, antispasmodic, antioxidant, antitoxic, decongestant, mucolytic, expectorant, immunomodulatory and metabolism-enhancing effect, i.e. has an etiopathogenetic mechanism of action in diseases of the middle and lower respiratory tract. In addition, the components of the medicament are a source of vitamin C, which is necessary for the child during the period of restoration of the activity of all body systems after an illness. The effectiveness of the medicament Bon-appetite was assessed by the dynamics of appetite, catarrhal, intoxication and asthenic syndromes, laboratory and instrumental data.

For an objective assessment, the tolerability of the Bon-appetit medicament was assessed in accordance with a scale based on objective data and subjective feelings of the patient. Tolerability of the medicament was considered good in the absence of side effects and negative dynamics of laboratory parameters; satisfactory - with minimal side effects that do not require discontinuation of the medicament and the absence of negative dynamics of laboratory parameters; unsatisfactory - in the presence of side effects that require discontinuation of the medicament and the need to use medications to eliminate them, and deterioration of laboratory parameters; extremely unsatisfactory if the side effects threatened the health and life of the patient and required an extension of the patient's hospitalization. Control examinations were carried out on the 5th, 10th, 15th and last days of taking the Bon-appetite.



## Research results.

In the main groups of children who received Bon-appetite as part of complex treatment, appetite increased faster than in control groups (Table 1).

**Table 1 - Comparative dynamics of appetite in children with acute respiratory tract diseases on the 10th day of treatment with Bon-appetite**

Characteristics of appetite	Group I acute simple bronchitis		Group II acute obstructive bronchitis		Group III acute pneumonia	
	Main (Bon-appetit)	control	Main (Bon-appetit)	control	Main (Bon-appetit)	control
<b>1. Frequency of administration per day, times</b>						
1	-				-	-
2						
3	8	16	9	11	13	16
4	13	9	15	17	15	17
5	19	15	16	12	12	5
<b>2. Serving volume (relative to the average standard)</b>						
haven't eaten anything						
have eaten less than half a serving	5	4	4	11	7	11
have eaten half a serving	12	17	15	12	12	11
Average serving	18	15	17	14	16	15
More than average serving	5	4	4	3	5	3
<b>3. Speed of food intake, min.</b>						
More than 20	15	21	25	28	28	32
15-20	23	19	15	12	12	8
10-15	2					
5-10						
up to 5						
<b>4. Picky eating</b>						
picks at food	28	32	29	33	31	35
eats everything	12	8	11	7	9	5
<b>5. Degree of desire to eat food</b>						
Eats with desire	27	22	25	21	16	13
Eats without desire	13	18	15	19	24	27

As can be seen from Table 1, the majority of children of main groups began to eat more often, more, faster and with desire.

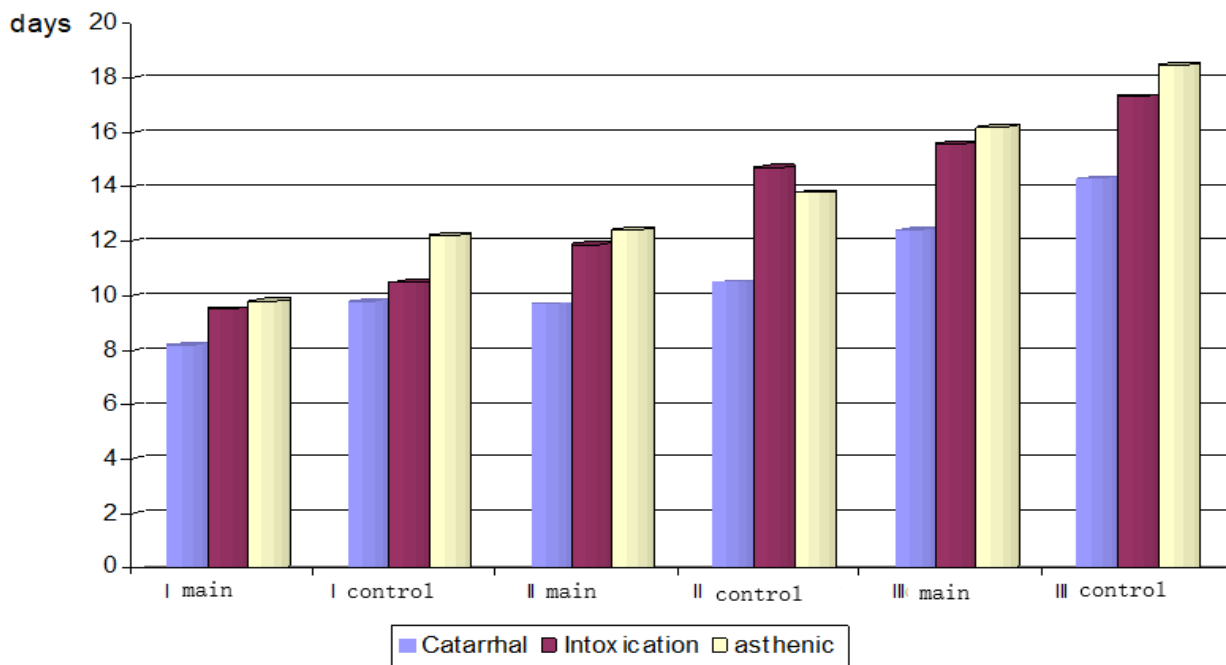
A comparison of the dynamics of clinical syndromes showed that the main manifestations of the disease were relieved earlier in children who received Bon-appetite, than in patients who took standard therapy (Fig. 1).

Comparative dynamics of the rheological properties of sputum, showed more pronounced dynamics in children in the groups receiving Bon Appetit (Table. 2).

A comparative analysis of the proteinogram and the level of C-reactive protein (CRP) in the blood serum (Fig. 2 and 3) showed that by the 10th day of treatment the level of  $\alpha_2$ -globulins was normalized in a larger number of children taking BON-appetit compared to the control groups. Thus, in group I, the level of  $\alpha_2$ -globulins was normalized in all 40 (100%) children of the main group and 35 (87%) in the control



group, in group II - in 38 (95%) children of the main group and in 31 (77%) control, in group III – 32 (80%) and 25 (62%), respectively. Analysis of the level of C-reactive protein (CRP) on the 10th day of treatment also showed more pronounced dynamics in patients who took Bon-appetit additionally, especially in acute pneumonia: 38 (95%) children of the main group versus 34 (85%) of the control group.



**Fig.1. Comparative dynamics of the duration of manifestations of clinical syndromes in children with acute respiratory tract diseases (days).**

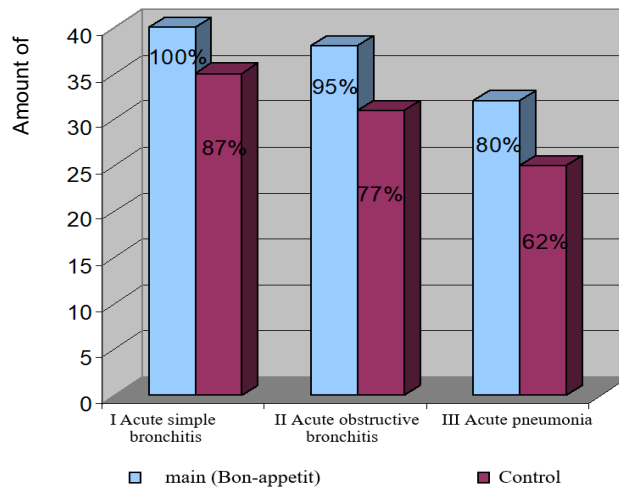
**Table 2 – Comparative dynamics of the relaxation time of sputum filaments in children with acute respiratory diseases (number of children).**

Groups			relaxation time of sputum filaments, seconds		
			<0,2	0,3-0,5	> 0,5
I -Acute simple bronchitis	Main	Before treatment	3	34	3
		On day 10	40		
	control	Before treatment	4	32	4
		On day 10	36	4	
II - Acute obstructive bronchitis	Main	Before treatment		24	16
		On day 10	34	6	
	control	Before treatment		25	15
		On day 10	30	8	2
III - Acute pneumonia	Main	Before treatment		24	6
		On day 15	35	4	1
	control	Before treatment		25	5
		On day 15	29	8	3

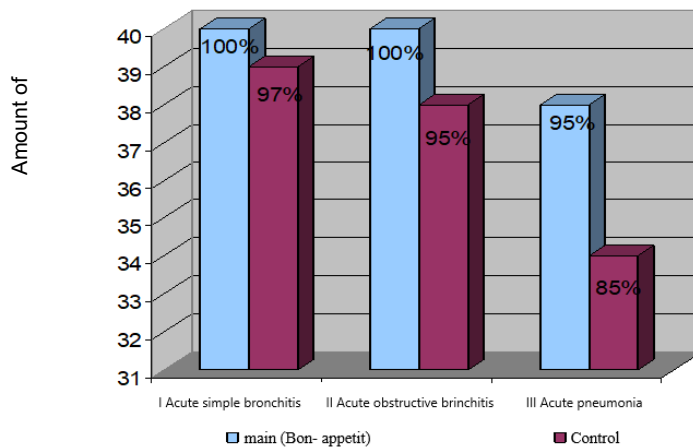
External respiratory function was assessed by computer spirometry using lung vital capacity (LVC) and Tiffno index (TI), which was calculated as the ratio of forced expiratory volume to LVC (Fig. 4 and 5). Analysis of these indicators on the 15th day of taking Bon-appetit demonstrated more active positive dynamics in children who



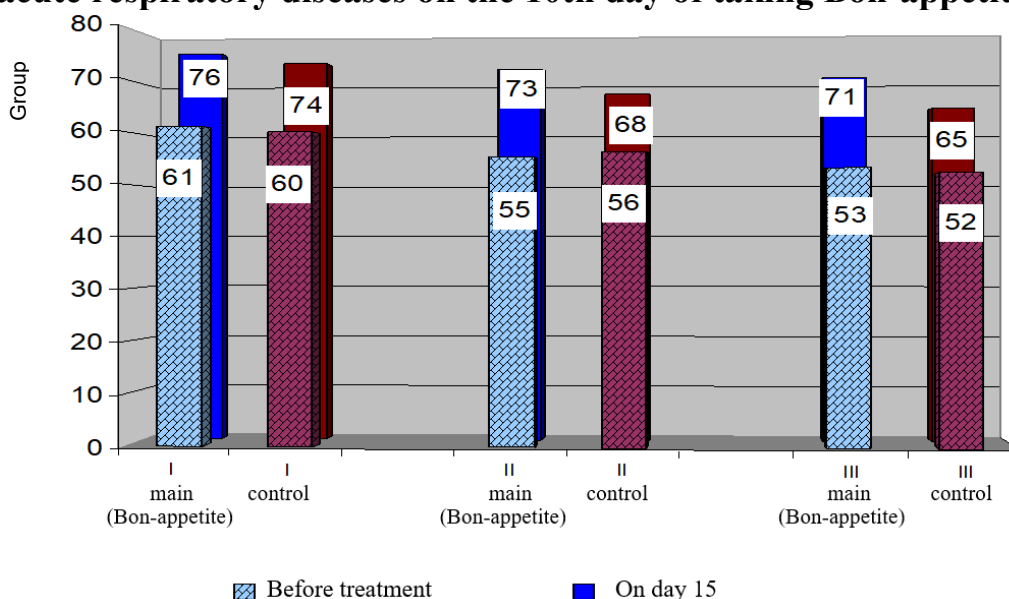
received Bon-appetite as part of complex therapy compared to patients with standard prescriptions.



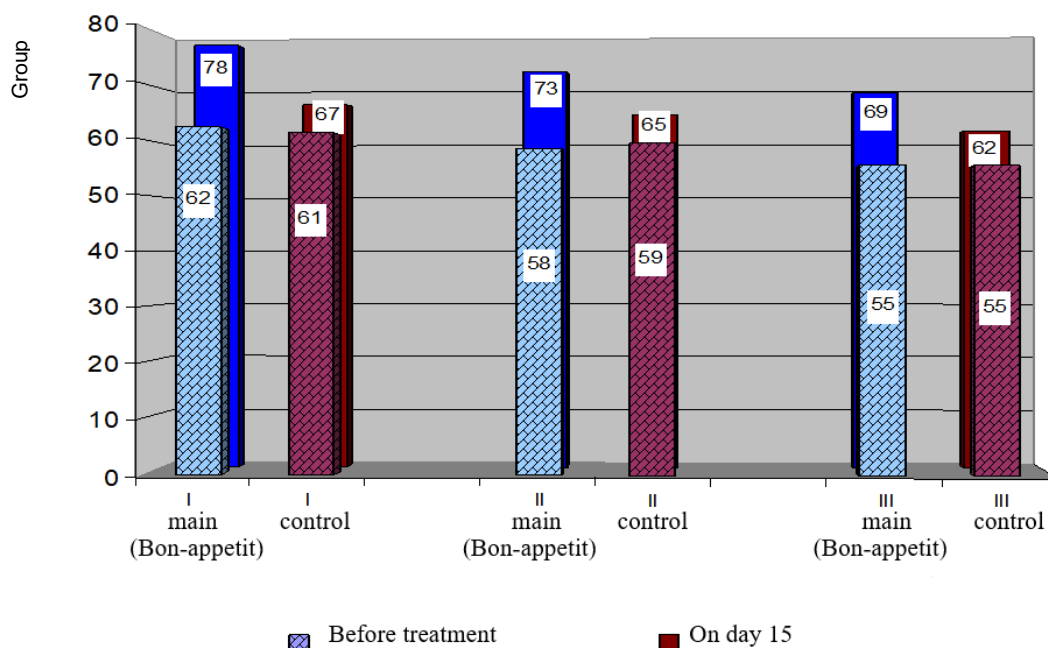
**Fig.2. Comparative characteristics of normalization of serum  $\alpha_2$ -globulin levels in children with acute respiratory tract diseases on the 10th day.**



**Fig. 3 Comparative dynamics of normalization of CRP levels in children with acute respiratory diseases on the 10th day of taking Bon-appetit.**



**Fig.4. Comparative dynamics of lung vital capacity (LVC) in children with acute diseases of the middle and lower respiratory tract on the 15th day of taking Bon-appetit.**



**Fig.5. Comparative dynamics of the Tiffno index in children with acute diseases of the middle and lower respiratory tract on the 15th day of taking Bon-apetit.**

Tolerability of the medicament Bon-appetit in the main groups (120 children) was good in 102 (85%) patients, in 17 (14%) children minor side effects were observed (bowel disorders, drowsiness, thirst) and were relieved when the dosage was reduced. 1 (0.08%) child had an allergic reaction in the form of acute urticaria, which stopped after taking antihistamines. The exact connection between the occurrence of side effects and the use of the Bon-appetit, used in complex therapy, has not been proven.

### Conclusions

1. The use of the medicament Bon-appetit in the complex of etiopathogenetic treatment of children with acute simple bronchitis, acute obstructive bronchitis and acute pneumonia during the recovery period contributes to a more rapid relief of the main symptoms of the disease.

2. While taking the medicament Bon-appetit, the rheological properties of sputum improved in children, acute-phase indicators of the inflammatory process normalized, and external respiration function was restored more quickly.

3. Due to its anti-inflammatory, expectorant, antioxidant, antitoxic, immunomodulatory and restorative effects, good tolerability, convenient release form and pleasant taste, we recommend the inclusion of the Bon-appetit in the general therapeutic complex for children with diseases of the middle and lower respiratory tract during the period of decreased activity of the inflammatory process.

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**Аннотация.** Представлены результаты лечения детей с острыми заболеваниями дыхательных путей с использованием препарата Бон-аппетит в период снижения активности воспалительного процесса. Переносимость препарата хорошая (85%) при незначительных побочных эффектах (14% - послабление стула, сонливость, жажда). Наблюдалась нормализация острофазовых показателей, быстрее восстанавливалась функция внешнего дыхания. Применение препарата Бон-аппетит в период выздоровления способствовал купированию основных симптомов заболевания средних и нижних дыхательных путей благодаря противовоспалительному, отхаркивающему, антиоксидантному, антитоксическому, иммуномодулирующему и общеукрепляющему действиям.

**Ключевые слова:** аппетит, дети, Бон-аппетит, бронхит, пневмония