



Comparative assessment of intestinal microbiocenoses of healthy children living in ecologically unfavorable conditions of the Southern Aral Sea region and in the city of Tashkent.

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ABSTRACT: The article provides information on a comparative assessment of intestinal microbiocenoses of healthy children living in unfavorable conditions in the South Aral Sea region and in Tashkent.

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Introduction

It is known that in the whole human body there is not one indigenous bacterium, but a certain, most often individual combination of microorganisms. For example, Escherichia coli, lactic acid bacteria, bifidobacteria and other lesser known microorganisms are constantly found in the intestine. A specific combination of bacteria is called microflora, and the normal (optimal for maintaining the health of a given organism) quantitative and qualitative composition of microflora is eubiosis.

The problem of maintaining health, the search for ways to reduce the adverse effects on the body of the external environment are currently extremely relevant for our country. Technogenic and environmental disasters, infectious diseases, the expansion of low-quality medicines and food, self-

poisoning with alcohol and drugs, psychoemotional stress and many other harmful factors deplete the body's defenses, reduce its adaptive potential (1,2,3,4,5,15, 16).

One of the most important systems for maintaining and preserving the body's homeostasis is its normal microflora inhabiting the gastrointestinal tract, genitourinary system, and skin. It has a multifaceted effect on the protective, adaptive and metabolic-trophic mechanisms of the body, and its disturbances under the influence of factors of an endogenous or exogenous nature can lead to the loss or distortion of these functions, which entail manifestations of dysbiosis - changes in the qualitative and quantitative composition of the organism's microflora. The spectrum of clinical syndromes and pathological conditions, the pathogenesis of which is associated with dysbiosis, is currently very wide and tends to increase.

Main part

As we have already noted above, various factors play a role in the development of intestinal dysbiosis in practically healthy children, but a decrease in the activity of the protective mechanisms of the human body remains the leading one (6,7,8,10,11,12).

The study of intestinal microbiocenoses in children with diarrheal diseases was carried out in comparison with two control groups of healthy children: group I - 25 children living in relatively favorable ecological conditions in Tashkent (according to I. M. Mukhamedov et al. 1996) and II - control group-32 children living in the zone of ecological disadvantage of the Southern Aral Sea region. The data of I.M.Mukhamedov practically correspond to the generally accepted norms for the content of obligate and facultative microorganisms in the intestine (13).

The comparative assessment of intestinal microflora indicators of these two control groups of children presented in Table 1 revealed significant quantitative and qualitative differences. As you can see from the above table, healthy children of the Southern Aral Sea region have a deficiency of obligate microflora, namely, bifidobacteria and lactobacillus of the 3rd order. The amount of one of the main intestinal microorganisms - lacto-positive *Escherichia coli*, practically

Table 1.

Indicators of intestinal microbiocenoses of practically healthy children in Tashkent (I - control group) and South Aral region (II - control group) in lg CFU / g M + m.

| Microorganisms | I- control group of children of Tashkent city n-25 | II- control group of children from the Southern Aral Sea region-32 |
|--|--|--|
| Bifidobacteria | 10,15±0,35 | 6,48±0,33* |
| Lactobacilli | 8,80±0,56 • | 5,10±0,14* |
| Lacto-positive <i>Escherichia coli</i> | 9,16±0,33 | 9,92±0,66 |
| Lactose negative intestinal sticks | 3,21 ±0,33 | 4,67±0,76* |
| Staphylococci | 4,03±0,12 | 4,82±0,38 |
| Enterococci | 5,11 ±0,23 | 5,78±0,12* |
| Mushrooms of the genus <i>Candida</i> | 2,60±1,76 | 4,25±0,41 |

Note: * - reliable differences of the given data

E. coli does not differ in children of I- and II- control groups: 9.92 ± 0.66 lg CFU / g and 9.16 ± 0.33 lg CFU / g, respectively.

Of the facultative microorganisms of the large intestine, attention is drawn to an increase in the number of fungi of the genus *Candida* by almost 2 orders of magnitude and weakly enzymatic, with reduced antagonistic properties of lactose-negative *E. coli* - by almost 1, 5 orders of magnitude, ($P < 0,001$) differences in the number of staphylococci and enterococci did not exceed the 1st order. Thus, the

analysis of the research results shows the presence of intestinal dysbiosis in practically healthy local children.

The indicators of dysbacteriosis are the deficiency of normal obligate intestinal microflora - bifidobacteria and lactobacilli, changes in the structure of *E. coli*, the predominance of lactose-negative *E. coli*, inactive in enzymatic and antagonistic relations, and a significant increase in fungi of the genus *Candida* (9,14).

Dysbiotic deviations in the composition of the intestinal microflora of practically healthy children of the Southern Aral Sea region are clearly shown in Figure 1.

The percentage of studied by us intestinal microorganisms of children living in Tashkent, corresponding to generally accepted norms, we conventionally designated as 100%. Then the percentage composition of the intestinal microbiocenosis of children of the II-control group was: bifidobacteria below the norm by 36.2%, *Lactobacillus* - by -2.1% ($P < 0.001$), the content of lacto-positive *E. coli* of both groups practically did not differ from each other. friend. ($P > 0.05$).

The deficiency of bifidobacteria and lactobacilli naturally led to an increase in the composition of the microbiocenosis of facultative microorganisms, namely: fungi of the genus *Candida* - by 63, 41,%, lactose-negative *E. coli* - by more than 50%. In smaller quantities, staphylococci and enterococci increased - within 20%, ($P < 0.001$).

Analysis of the above research results indicates that ecologically unfavorable environmental factors affect the composition of the intestinal microbiocenosis of "practically healthy" children living in this zone.

Fig. 1. Comparative assessment of the composition of the intestinal microbiocenosis of healthy children in the I control group and II in the control group
Obligate microflora

Optional microflora

The development of intestinal dysbiosis in children of this region is associated with a decrease in the number of normal, obligate microflora: bifidobacteria and lactobacilli, as well as an increase in facultative, opportunistic microorganisms - fungi of the genus *Candida*, lactose-negative *E. coli* and, to a lesser extent, staphylococci of streptococci, but despite changes intestinal microbiocenosis, most children and their parents do not have complaints of intestinal dysfunction and there are no clinical manifestations of dysbacteriosis (control group II), they remain practically healthy (17,18,19,20). Thus, this is obviously explained by the formation of the local ecoflora of the intestine, which has compensatory mechanisms associated with the resistance of lacto-positive *E. coli* to unfavorable environmental conditions, their high enzymatic and antagonistic activity, vitamin-forming and other properties.

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