



ADMINISTRATION OF OMNI BIOTIC STRESS REPAIR IN CHILDREN'S AGE

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SUMMARY

Background: In the last years of the old century and the beginning of the new century, the discovery that our gastrointestinal tract is home to a huge number of beneficial bacteria known as intestinal microflora changed the understanding of many physiological and pathological processes in the human body. Based on these scientific discoveries, the laboratories of the Allergozan Institute in Austria have created the synbiotic combinations "Omnibiotic", which are specific and aimed at specific problems related to human health.

Purpose: The aim of the present study is to investigate the effect of the probiotic Omni Biotic Stress Repair in the treatment of functional abdominal pain (FAP) and some organic gastrointestinal diseases in childhood.

Material and Methods: A prospective study has been done on children with FAP and PUD. For one year, we monitored 62 children with functional abdominal pain and duodenal ulcer who received Omni Biotic Stress Repair for 3 months. The causes of children's suffering were reported.

Results: There are 39 children with functional abdominal pain, 22 of which are girls and 17 boys, and children with peptic ulcer disease – 23/12 boys and 11 girls/. The FAP group received Omni Biotic Stress Repair as self-therapy for three months. We reported very good results in all children. Only four children did not get the desired effect, and they dropped out of the study in the first month. In children with peptic ulcer disease, the probiotic Omni Biotic Stress Repair is added as a satellite therapy to the main treatment. When clinical remission occurred, the patients continued to take only probiotics for 3 months or more.

Conclusions: Based on these scientific discoveries, the laboratories of the Allergozan Institute in Austria have created the synbiotic combinations "Omnibiotic", which are specific and aimed at specific problems related to human health.

Keywords: children, probiotic, gastrointestinal system,

INTRODUCTION

In the last years of the old century and the beginning of the new one, the discovery that our gastrointestinal tract is home to a huge number of beneficial bacteria, known as intestinal microflora, changed the understanding of many physiological and pathological processes in the human body. [1]

Microbiota is the common name for intestinal microflora. The human microbiome is a collection of all genes contained in the microbiota. [2, 3]

The microorganisms that live in us are 10 times more than the cells in our body. Their total weight is about 2 times the weight of the brain.

And they actually communicate with the brain all the time through the immune system, neurotransmitters, and the vagus nerve. According to some specialists, the microorganisms that live in our intestines form something like a second brain.

Awareness of the importance of microflora for health has led to the largest study to date of it – **The Human Microbiome Project*** – the United States Human Microbiome Project. Complete information has been gathered on the genetic material of the **Human Microbiome**.

As a result, a map of the human microbiota that inhabits our organism has been drawn up. It turns out that we coexist with unicellular organisms that exceed the number of our own cells in a ratio that reaches 10:1.

The most developed endogenous defense system is located in the intestinal tract, and exactly here, those immune cells, which protect the body from viruses, toxins and harmful bacteria, are formed. In a healthy intestine, there are 3 times more immune cells than in the bone marrow, spleen, and lymph nodes together.

The name "probiotic" was introduced for the first time by Vergin.

The most accurate definition is given by WHO, according to which we define as probiotic products containing only live microorganisms, in a sufficiently large quantity (in the order of billions), that have a balancing effect on the intestinal flora.

In Eastern medicine, for millennia, the intestines have been considered the "second brain" in the body, but it was not until the end of the last century that the Co-

Columbia University scientist and professor of cellular biology, Michael Gershon, was able to prove that throughout the entire digestive system there is a build-up of multiple neurons and they form a separate enteric nervous system which communicates with the brain through three channels – **neural, hormonal**, and by releasing **specific biologically active substances** from the bacteria that inhabit the intestines. The recent studies show “this second “brain” controls the digestive system via a complex network of over 100 million nerves and chemicals that send messages to the central nervous system, and this “brain” allows us to feel in our “guts”. [4]

These neurons have the ability to communicate with each other through the language of neuromediation and are responsible for a number of complex processes.

About 95% of the neuromediator serotonin is produced and acts in the abdominal area and controls a number of processes – control of the food passage through the intestines, regulation of the immune protection, and a small part of it reaches the brain, where it is responsible for the realization of the path of pleasure, i.e. the feeling of happiness, content, satisfaction, etc.

Since the existence of mankind, there has always been stress, but people did not then know about its impact on the health of the organism.

In 1936 Canadian physiologist Hans Selye described stress as a general adaptation reaction of the organism. [5] The function of the enteric nervous system is not limited to digestion but has a direct relation to people’s mental health.

In fact, digestion, through the enteric nervous system, actively influences and contributes to the development of one of the most valuable qualities of the human thought process – intuition and coping with stress.

Based on these scientific discoveries, the laboratories of the AllergoSan Institute in Austria created the synbiotic combinations “OmniBiotic”, which are specific and aimed at particular problems related to human health.

Composition of Omni Biotic Stress Repair: It contains 9 bacterial strains, precisely tested for the indication. A total of 7.5 billion bacteria are gastric and bile resistant and capable of reproduction in one sachet (3 g).

- Bifidobacterium bifidum W23
- Bifidobacterium lactis W51
- Bifidobacterium lactis W52
- Lactobacillus acidophilus W22
- Lactobacillus casei W56
- Lactobacillus paracasei W20
- Lactobacillus plantarum W62
- Lactobacillus salivarius W24
- Lactococcus lactis W19

These 9 different bacterial strains, naturally inhabiting the intestines, reinforce the intestinal flora disturbed by stress. They also affect their common work with the brain, which helps to overcome stress more quickly.

Why Omni Biotic Stress Repair is effective:

- The bacteria are stable at room temperature;
- The bacteria are highly effective immediately after rehydration;
- Excellent survival when passing through the gastrointestinal tract.

As modern society is under serious stress in the last years of the new century, the combination of the bacterial strains of Omni Biotic Stress Repair for targeting the enteric nervous system is of interest in the healing process. Children are not spared the dynamics of modern life, and they also have health problems that are directly related to stress at this age.

A child’s life is associated with many changes that may cause emotional tension. Psychological factors such as stress and anxiety are known to cause or aggravate gastrointestinal discomfort.

The clinical expression of this is **recurrent abdominal pain (RAP)**, which has an intermittent character. It is most commonly seen in children 5 to 18 years old and affects their normal physical activity. [6] In recent years, it has been observed a decline in ages under 5 years. RAP has a functional aetiology in 95% of cases and organic in only 5%. The aetiology and pathogenesis of functional abdominal pain (FAP) are unknown. There are also no specific diagnostic markers for it. The data shows that beneficial health effects of probiotic are inconsistent. [7] FAP is diagnosed by the method of exclusion.

Functional abdominal pain (FAP) in children is a disorder of gastrointestinal motility caused by physical and/or mental stress. [8, 9] The theory of visceral hypersensitivity can explain why some children experience pain even under normal amounts of stress.

AIM

This study aims to investigate the probiotic Omni Biotic Stress Repair’s effect in treating functional abdominal pain (FAP) and some organic gastrointestinal diseases in children.

MATERIAL AND METHODS

In the course of one year, we conducted surveillance of 62 children with functional abdominal pain and duodenal ulcer who were receiving Omni Biotic Stress Repair for 3 months in the frame of prospective study.

The children with functional abdominal pain were 39, including 22 girls and 17 boys.

There were 19 children at preschool age from 4 to 6 years old, and we related the reasons to the following anamnestic data: going to kindergarten, the birth of a second child in the family, separation from a parent, dissatisfaction with the child’s various capricious and desires. Seventeen children were at early school age from 6 to 12 years old.

The study has been following participants for 12 months.

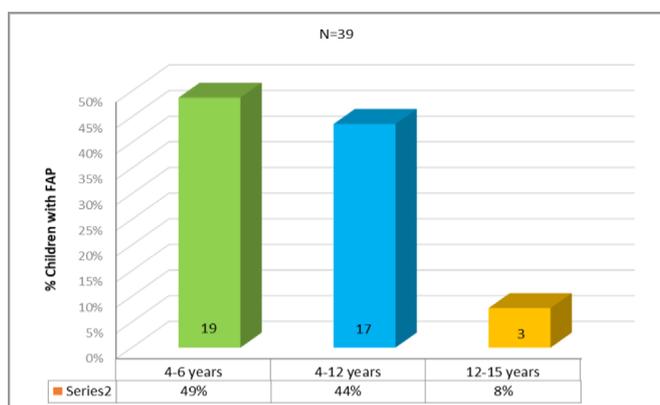
RESULTS

The prospective study of 62 children, 39 of which with FAP and 19 with duodenal ulcer was carried out in the Diagnostic-Consultative Centre 1 at the UMHAT – Pleven [University Multi-Profile Hospital for Active Treatment] “Dr. G. Stranski” EAD.

The procedure does not require hospital admission and was performed on an outpatient basis. The survey procedures do not require invasive research (studies) tests, apart from the routine ones to prove the diagnosis, because Omni Biotic Stress Repair has been on the medical market for a long time and can be freely purchased from any pharmacy, therefore an opinion from the Legal Ethics Committee (LEC) at UMHAT “Dr. Georgi Stranski” EAD is not required.

Age group distributions are given for the children with functional abdominal pain not depending on their gender. The percentage of respondents belonging to each of the three age groups is represented (Fig. 1).

Fig. 1. Age group distribution (children with FAP)



The major reasons here were stress in school due to overload, failure to cope with the educational material, classmates’ unfair behaviour, parental mistakes in the upbringing.

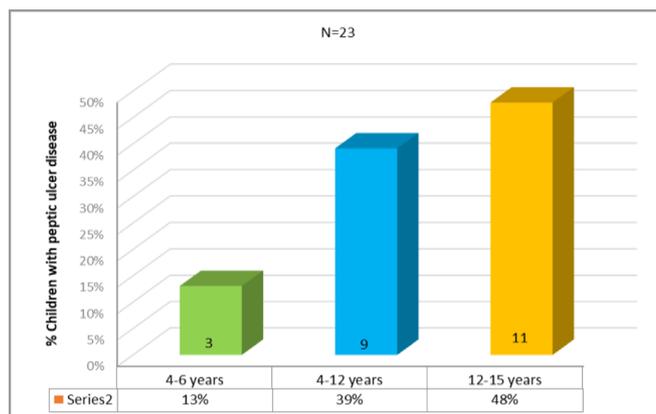
The least number of children with such symptoms were found at late school age from 12 to 15 years old – only 3 cases.

This group of patients with FAP received Omni Biotic Stress Repair as a single therapy for three months. Very good results were observed in all children.

Only four children did not have the desired effect, and they dropped out of the group as early as the first month.

Twenty three treated children with peptic ulcer disease who were 4 to 16 years old were studied (Fig. 2). Ulcer disease in children has recently become more frequent, and a decrease in the age of appearance has also been observed.

Fig. 2. Age group distribution (children with peptic ulcer disease)



The cause of the disease was associated with stress, dietary error, familial burden, and, most often, a combination of factors. In 5 children, we found infection with *Helicobacter pylori*. The youngest child with ulcer disease in Bulgaria is 4 years old, while according to literature data, the disease has also been diagnosed in 2-year-old children.

In these cases, Omni Biotic Stress Repair was applied as a satellite therapy to the primary one. Upon the occurrence of clinical remission, patients continued to take Omni Biotic Stress Repair alone for 3 months or more.

In the placebo group with FAP we observed 23 children who were treated with other symptomatic agents, without any probiotic. In them we observed frequent relapses of FAP and difficult influence of the symptomatology.

DISCUSSION

Probiotics are live microorganisms that taken in adequate quantity, have a beneficial effect on human health [2, 3].

The selection of probiotics includes: in vitro analyses, which are important for the overall selection process, and controlled in vivo studies on healthy volunteers. The direct addition of probiotic microorganisms to functional foods, non-pharmacological or pharmaceutical preparations requires careful selection of strains. Their qualities and functional properties must be established. Three main aspects can be formulated that should be taken into account in the selection of probiotic strains: safety, functionality, technogenicity [10]. These rules have been followed for omnibiotics and in particular - for Omni Biotic Stress Repair, which is relevant to the treatment of abdominal pain in childhood.

This synergistic combination supports the repair of inflamed intestinal mucosa caused by prolonged stress and mental strain by restoring the barrier function of the intestine [1].

Abdominal pain in childhood is a serious diagnostic and therapeutic problem, therefore the administration of probiotics is of interest on the way to its resolution. Data on the relationship between the human microbiome, the endogenous immune defense system and the central nervous system requires serious observations in practice.

Pediatric research in this area is scarce. This provoked our research interest to make a clinical observation in the administration of Omni Biotic Stress Repair on its impact in some stress and worry related conditions that may cause gastrointestinal discomfort. The most common symptom is recurrent abdominal pain, which affects children's physical activity and mental state [7, 8, 9]. In 95% of cases the functional abdominal pain is with functional aetiology, and only in 5% it is organic in nature [7]. In our observed children with FAP for three months, Omni Biotic Stress Repair was applied for self-treatment and gave a very good result. In them we also analyzed the causes that led to this condition: attendance in kindergarten, birth of another child, stress at school, parental mistakes, etc. There was no significant difference in the occurrence and course of the disease in the age groups of preschool and early school-age children.

From the organic diseases of the gastrointestinal

tract, we studied the impact of Omni Biotic Stress Repair in children with ulcer disease, which increased in frequency in childhood, with a decrease in age. The underlying cause was stress, dietary error, familial burden, but most often it was a combination of factors related to the child's neuropsychiatric condition. Probiotic was administered as a satellite therapy to the main therapy, and after clinical remission, patients continued with it for 3 months or more. We observed good results of the combination therapy and the stand-alone therapy thereafter.

CONCLUSIONS

Based on the rapid development of science and modern knowledge of the human microbiome, as well as our positive experience with Omni Biotic Stress Repair in children, it is confirmed the thesis that the synbiotic combinations "OmniBiotic" are specific and target particular problems related to human health.

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Please cite this article as: Barzashka E, Valova T. Administration of Omni Biotic Stress Repair in Children's Age. *J of IMAB*. 2022 Apr-Jun;28(2):4562-4565. DOI: <https://doi.org/10.5272/jimab.2022283.4562>

Received: 23/03/2022; Published online: 16/09/2022



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