

Functional disorders of the digestive system belong to a group of diseases which most often concern patients treated by paediatricians, gastroenterologists and general practitioners and pose a diagnostic and therapeutic challenge due to the variety of the clinical picture, dynamics of symptoms and complexity of etiopathogenesis. Chronic abdominal pain is one of the most common symptoms in children. As epidemiological data show, it affects about 10% – 20% of children. In the majority of cases, the symptoms have no organic causes and are described as functional pain. According to Paediatric Rome Criteria III, functional abdominal pain (FAP) is classified as recurrent or constant abdominal pain without inflammatory cause, anatomic or metabolic defects, or a neoplastic process, which does not satisfy criteria for diagnosing other functional disorders of the gastrointestinal tract. Chronic pain has a significant impact on the quality of life, both of sick children and their patients. It has a negative effect on children's achievements at school and in sport and on their contacts with peers. Those aspects can also affect the long-term quality of life, with implications in the adult life of the patients.

Abundant scientific evidence has shown that the type of consumed food is a significant factor determining the occurrence of symptoms of gastrointestinal tract disorders, and a properly chosen diet can be a successful therapeutic tool. A diet with a low FODMAP content offers a new approach in treating patients suffering from functional gastrointestinal tract disorders. The acronym FODMAP (fermentable oligosaccharides, disaccharides, monosaccharides and polyols) describes carbohydrates contained in food, characterized by low molecular weight, limited absorption or digestion and rapid fermentation in the colon, the intake of which may contribute to intensification of symptoms of functional gastrointestinal disorders. It should be emphasized that products rich in FODMAP can cause symptoms, but do not determine the occurrence of a disease. The latest results report high efficacy of a new dietary therapy, namely, the low FODMAP diet. Its positive impact on health condition was reported for the majority of patients, e.g. with irritable bowel syndrome and fructose malabsorption.

The aim of the study will be to examine the efficacy of a diet with limited short chain, fermenting carbohydrates (FODMAP) in treating symptoms in children with functional abdominal pain.

Additionally, the study will include an assessment of relations between the nutritional habits, nutritional status and the level of physical activity and the occurrence of functional abdominal pain in children aged 5-12 years.

The research project is intended as an intervention, randomized, double-blind trial. The study will involve 40 children aged 5-12 years, meeting the criteria of functional abdominal pain, treated in the Clinic of Gastrology of the Provincial Specialist Children's Hospital in Olsztyn. The children will be subject to medical examinations to exclude organic causes of ailment and to a hydrogen breath test after oral loading with lactose and fructose. Food intake, nutritional status and the level of physical activity of the patients will be evaluated before starting dietary intervention. After the end of preliminary examinations, the patients will be randomly allocated according to a computer generated list, to one of two groups: the experimental group receiving the low FODMAP diet or a comparative group, receiving a diet based on the NICE (National Institute for Health and Clinical Excellence) recommendations. For four weeks, a catering company will prepare meals on the basis of the prepared diets and deliver them to the patients. During the study, patients' parents/guardians will be asked to complete, on a daily basis, a case report recording the severity of abdominal pain, number of pain episodes, number of bowel movements and stool characteristics, occurrence of other symptoms (nausea, vomiting, fever), any changes in well-being and additionally-consumed food. Two meetings with the patients will be held during the dietary intervention period. The first control meeting will take place after two weeks of the diet and will aim at evaluating the severity of diet application. The second visit will take place after the end of the four-week study. The general condition of the child will be evaluated and anthropometric tests will be repeated. Additionally, parents/guardians will be asked to make a subjective evaluation of the patient's well-being during the diet period, and to specify their satisfaction with the effects of following this diet by their child.

Research studies carried out all over the world emphasize the high efficacy of a diet with reduced content of FODMAP. There is growing evidence confirming the negative impact of FODMAP on functions of the gastrointestinal tract and the amount of research confirming the efficacy of the elimination diet. However, the current state of knowledge concerning the effects of the diet in disease treatment is still unsatisfactory. In view of potential benefits offered by this method of treatment, the proposed research can provide clinically important information on the efficacy of the FODMAP diet in treating functional abdominal pain in children.