Olsztyn, 28.10.2020 r.

Abstract

Functional abdominal pain disorders (FAPDs) are a common health problem in the pediatric population. Recurrent symptoms of the disease, numerous medical visits and stress may have a significant impact not only on children's quality of life, but also parents. Research suggests that modifiable lifestyle factors such as diet, physical activity and Body Mass Index (BMI) contribute to the symptoms of FAPDs. An increased interest has been observed in a new diet which recommends to reduce the intake of fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAP). It has been suggested, that intake of foods high in this short-chain, poorly absorbed carbohydrates, which are osmotically active and rapidly fermented by bacteria, can trigger symptoms of FAPDs. Numerous studies have confirmed the effectiveness of the low FODMAP diet in reducing symptoms of irritable bowel syndrome. However, there is lack of studies investigating the influence of the low FODMAP diet on functional abdominal pain (FAP) in pediatric patients.

The main aim of the doctoral research was to evaluate the effectiveness of the low FODMAP diet in children with FAP, using a diet based on the National Institute for Health and Care Excellence (NICE) guidelines as a control.

Twenty seven children with functional abdominal pain were enrolled in this study and randomized to one of two groups receiving: the low FODMAP diet or diet based on NICE guidelines (control group) for 4 weeks. Meals were prepared according to recipes prepared by a dietitian, and delivered to the patients' house by a catering company each day. Products additionally consumed during the diet were recorded in the food diary. Before the dietary intervention following assessments were carried out: anthropometric measurements, the level of physical activity of children at school and during free time, and dietary intake recorded with the use of 7-day food diary. Children (with parental help) recorded gastrointestinal symptoms during the 2-weeks of baseline assessment period and over the 4-weeks of dietary intervention. The frequency of abdominal pain and stools were reported as a number of events per day. The severity of abdominal pain was assessed using the Wong-Baker FACES Pain Rating Scale. The assessment of stools consistency was based on the Bristol Stool Form Scale. At the end of intervention, parents assessed children's diet and symptoms changes, using Likert scales. The agreement between parental and children

assessments of gastrointestinal symptoms were defined as the percentage of compatible answers.

Observations before the dietary intervention showed that higher severity of abdominal pain was noticed in children with insufficient intake of fiber, compared to patients with adequate intake. Lower stool frequency was observed in patients who reported moderate level of physical activity in free time than in children who declared high level of physical activity at free-time. The tendency in reduction of abdominal symptoms was observed in the low FODMAP group. Significant improvement in the frequency and severity of abdominal pain, as well as stool consistency was observed in children receiving a diet based on the NICE recommendations. Both, the parents' satisfaction with the effects of the diet received by the child and the compliance of their opinions with the children's self-assessment of abdominal pain intensity and frequency were similar in both groups. Parents of children in the low FODMAP group less often described the diet as easy to follow.

The results of this study confirm that fiber intake and level of physical activity may have an influence on the symptoms of functional abdominal pain. The results also suggest that a diet with FODMAP restriction is not a sufficiently effective therapeutic method in relieving the symptoms of the disease. Moreover, following this diet may prove difficult for patients. Due to the high prevalence of functional abdominal pain and its negative impact on the quality of life of children and parents, it is important to conduct further studies to confirm these observations and to develop an effective dietary therapy.