



EFFECTS OF PHYSICAL ACTIVITY AND RELAXATION TECHNIQUES ON THE SYMPTOMS OF IRRITABLE BOWEL SYNDROME (IBS)

INTRODUCTION

Functional gastrointestinal disorders are among the most common diseases of the gastrointestinal tract and account for approximately 50% of people presenting for specialist treatment. Irritable bowel syndrome (IBS) affects approximately 10-20% of adults, two thirds of whom are women. In Poland, IBS is estimated to affect around 13% of the population. The disease usually begins between the ages of 30 and 40, i.e. in the third decade of life [1].

Complex aetiopathogenetic factors and the lack of good and simple diagnostic tools mean that patients often search on their own for the causes of their complaints and treatments often among unconventional methods. [2].

Irritable bowel syndrome is characterised by recurrent abdominal pain that has occurred on average at least 1 day per week for the past 3 months. Abdominal pain in IBS must meet 2 of 3 criteria: association with bowel movements, with a change in the frequency of bowel movements or with a change in the formation and appearance of stools.

Evidence is emerging in the literature on the effectiveness of physical activity and relaxation training in the treatment of IBS symptoms. They confirm that physical exercise at a moderate level, combined with postures derived from yoga, may provide an alternative way to alleviate IBS symptoms.

The latest version of the recommendations developed by a working group set up by the General Board of the Polish Society of Gastroenterology in 2018 emphasises the role of physical activity, relaxation techniques and yoga [3].

An attempt was made to confirm the beneficial effect of physical activity on the symptoms of irritable bowel syndrome. To this end, an exercise regimen based on classical aerobics combined with hatha yoga and Schultz-Jacobson relaxation training was created to assess the effect of increasing physical activity levels in patients with irritable bowel syndrome on the severity of symptoms associated with the disease.

TEST MATERIAL AND METHODS

Forty-one women diagnosed with irritable bowel syndrome were enrolled in the study (29 completed the study). The mean age of the women in the study was 44.6 years. The composition of the study group was determined by analysing data from a questionnaire containing inclusion criteria, which was completed at the recruitment meeting. The questionnaire asked about age, current body weight, education, occupational activity, gastrointestinal complaints and their duration, chronic diseases, past pregnancies, and surgical procedures. Patients with significant chronic diseases, especially cardiovascular diseases, were not eligible for the study.

Verification of the history and clinical data giving rise to the diagnosis of IBS was performed by specialist gastroenterologists. They were also the ones who made the decision on meeting the inclusion criteria for the study. To facilitate the possibility of taking part in the research programme, a schedule was established, with 10 dates proposed in three different locations and at different times of day. The choice of venues and proposed times made it easier for respondents to participate in the training cycle, especially those who worked shifts. The study used a proprietary training programme based on the basic steps used in a fitness class, yoga positions to improve bowel motility and relaxation training: autogenic Schultz and Jacobson. The basic steps in the warm-up were: step touch, heel back, step out (side to side), march, knee up, etc. combined with upper limb work in all main planes (transverse, frontal and sagittal). The main part involved trunk bending in the aforementioned planes combined with upper and lower track breathing. The main focus was on abdominal (diaphragmatic) breathing to relax the abdominal muscles and internal organs. The training used positions taken from hatha yoga, such as head-up dog, head-down dog, horse saddle, cat's back, McKenzie standing and lying stretches, trunk twists in standing, sitting and kneeling, child's position, lying backwards, etc. All positions (asanas) were shown and discussed by the trainer, and attention was paid to the breath (pranayama) for each position. The third part of the training was relaxation using the common Jacobson and Schultz relaxation techniques. A total of 29 women completed the entire training cycle, in line with the objectives of the study.

The study women were informed about the purpose of the study, how it was conducted, the risks and benefits of participating in the study. Information was also provided on the insurance of the study and how personal data were collected and processed. Participation in the study was voluntary and each subject signed an informed consent form. The study was conducted with the approval of the Bioethics Committee of the Piastów Śląskich University of Medical Sciences in Wrocław, based on resolution no. KB - 809/2018 of 3 January 2019.

A validated IBS-SSS (irritable bowel syndrome severity scoring system) questionnaire was used to assess the effectiveness of the method used, which was completed by the participants at the beginning of the first training session and at the end of the last training session. Approval for the use of the questionnaire was granted by its official distributor, Mapi Research Trust, based in Lyone, France.

The IBS-SSS questionnaire consists of visual analogue scales containing questions on pain intensity, frequency of pain, severity of abdominal bloating, dissatisfaction with bowel function and interference of the disease with personal and professional life. The score is presented on a 100-point VAS scale and is the sum of the points obtained after answering the question. A higher score indicates greater severity of the patient's complaints [4]. The results obtained were analysed using the Statistica programme. Depending on the form of the question, the following statistical methods were used: Student's t-test for dependent samples and Wilcoxon's paired t-test.

RESULTS AND DISCUSSION

Prior to the survey, abdominal pain was present in 80% of the women surveyed. After the study, abdominal pain was reported by 50% of subjects. The difference shown was statistically significant.

Table I Results obtained from the IBS-SSS questionnaire

A 0-100 analogue scale was used to assess the severity of pain. It was shown that the change in abdominal pain severity after the two-month training cycle was statistically significant. Before the study, the mean abdominal pain intensity was 34%. After the two-month training cycle conducted, the average pain intensity was 14%. After the exercise series, the mean number of days with abdominal pain for the last 10 days was statistically significantly lower ($p=0.005243$). The number of days with abdominal pain decreased by 1.4.

97% of the women surveyed confirmed that they had troublesome abdominal bloating at the time of joining the study. After completing the exercise cycle, the incidence of bloating decreased by 40%. Its severity was assessed using a scale of 1-100, where 100 meant very severe bloating. Before the study, the average bloating severity was 50% which meant that the majority of women had quite severe bloating. After the survey, the intensity of bloating decreased and the difference was statistically significant (30%).

A further analysis looked at so-called bowel satisfaction. The resulting difference before and after training was statistically significant. Before the study, bowel dissatisfaction was 52% and after the study 29%.

Assessing the quality of life, the subjects with IBS, showed a statistically significant difference in this assessment before and after the study (25%). Before the study, a problem related to bowel function, in the female subjects, interfered with quality of life at a level of 58% while after the study it reached 33%. After the survey, the quality of life of the women surveyed improved by 25%.

CONCLUSIONS

On the basis of the survey and the analyses carried out, the following conclusions were drawn

1. The relationship between physical activity and the severity of irritable bowel syndrome symptoms has been confirmed. Regular physical activity has been shown to reduce the severity of symptoms of the disease
2. The beneficial effect of regular exercise on the quality of life of the women studied was confirmed.

Table I Results obtained from the IBS-SSS questionnaire

Trait under study	N	Average Before	Average After	Difference	Confidence -95%	Confidence +95%	t	p
The power of abdominal pain	29	0,34	0,14	0,20	0,11	0,28	4,74	<0,01
Number of days with abdominal pain	29	3,069	1,65	1,41	0,46	2,37	3,02	<0,01
The power of flatulence	29	0,50	0,19	0,30	0,21	0,39	6,59	<0,01
Impact of bowel function on life	29	0,58	0,34	0,24	0,17	0,32	6,47	<0,01

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