

Wrzeński Bartłomiej, Piechocka Edyta, Wojtczak Pawel, Ziółkowska Anna, Szustka Angelika, Balcerska Kamila, Bielejewska Marta, Łopatka Patrycja. The influence of physiotherapy on the treatment of inflammatory bowel diseases – a short overview. *Journal of Education, Health and Sport*. 2018;8(7):436-444. eISSN 2391-8306. DOI <http://dx.doi.org/10.5281/zenodo.1325466>
<http://ojs.ukw.edu.pl/index.php/johs/article/view/5749>

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part b item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eissn 2391-8306 7

© The Authors 2018;

This article is published with open access at Licensee Open Journal Systems of Kazimierz Wielki University in Bydgoszcz, Poland
Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike.
(<http://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited.

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 25.06.2018. Revised: 30.06.2018. Accepted: 31.07.2018.

The influence of physiotherapy on the treatment of inflammatory bowel diseases – a short overview

Bartłomiej Wrzeński¹, b.wrzesinski@icloud.com ORCID : 0000-0002-4731-5371

Edyta Piechocka¹, piechockaedyta@gmail.com ORCID : 0000-0002-6321-3236

Pawel Wojtczak¹, pawelwojtczak.prv@gmail.com ORCID : 0000-0003-0683-7007

Anna Ziółkowska¹, ziolkowska.anna94@gmail.com ORCID : 0000-0002-4068-1133

Angelika Szustka, angelika.szustka@gmail.com ORCID : 0000-0002-1843-7134

Kamila Balcerska, kamila.balcerska95@gmail.com ORCID : 0000-0002-5219-720X

Marta Bielejewska, martabielejewska1995@gmail.com, ORCID : 0000-0002-3692-4315

Patrycja Łopatka², lopatka@gmail.com ORCID : 0000-0002-8137-6557

**¹Scientific Circle at the Department of Ergonomics and Physiology of Physical Effort
Collegium Medicum UMK, Toruń, Bydgoszcz, Poland**

²Clinical Department of Oncological Surgery at the Oncological Hospital in Bydgoszcz

Abstract

Background of Inflammatory diseases of the intestines affect more and more people, this is caused not only by genetic determinants but also by environmental conditions and lifestyle. Lack of physical activity may affect the symptoms of the disease and increase their

intensity, therefore during the remission of the disease it is recommended to use training and physiotherapeutic techniques to reduce the symptoms, such as pain, fatigue or reduced quality of life. The below systematic review shows the impact of individual physical trainings and physiotherapeutic techniques on symptoms resulting from inflammatory bowel diseases.

Databases used

PubMed, ResearchGate, Google Scholar and DOAJ were searched by July 2018. Search engines include terms such as physiotherapy, exercises and IBD.

Keywords

Exercise, physiotherapy, IBD, Crohn disease

Introduction

Inflammatory diseases of the intestines affect about 1.4 million people and most often occur in people before 30 years of age. Symptoms of IBD vary from person to person and may change over time. Common symptoms associated with inflammatory bowel disease are pain, fatigue, decreased quality of life, diarrhea and bloody stools. The pain may affect the abdominal region or occur parenterally, e.g. back pain or peripheral joints. During the disease activity, pain affects 50-70% of patients with inflammatory bowel disease [4, 6, 10, 12]. The most common factors causing IBD are genetic, environmental and intestinal bacteria imbalances. The two most common inflammatory bowel diseases are ulcerative colitis (IBD) and Crohn's disease (CD). Currently, the incidence rate for IBD in Europe is estimated at 24.3 per 100,000 people [10, 12, 15].

Lesniewski Crohn's disease is one of the two major inflammatory diseases of the intestines. The etiology of the disease is unknown. Its occurrence is estimated at 1-5 / 100,000 people. During the treatment of the disease, surgical interventions may occur, most often in the case of stenosis of the intestine, abscess and internal fistula [1, 10, 14]. Symptoms of this disease depend mainly on the distribution and severity of the disease. Typical symptoms are: diarrhea, abdominal pain, anal bleeding, anorexia and weight loss. In addition, you may experience: arthralgia, arthritis, purulent dermatitis and iritis [14, 15].

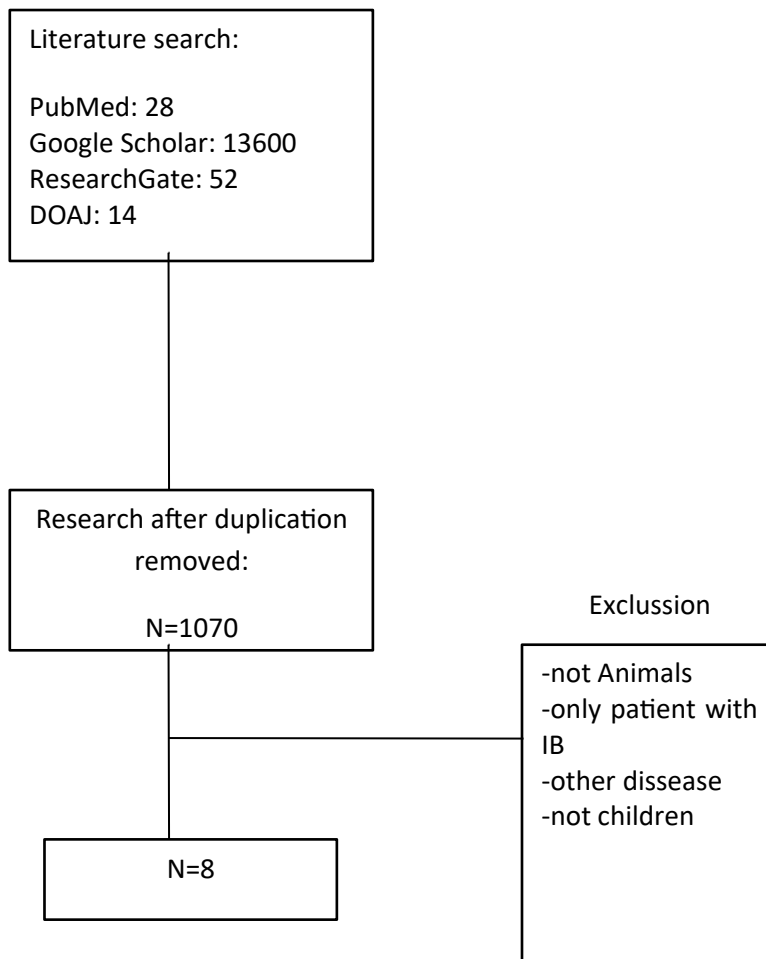
Ulcerative colitis is a chronic idiopathic disease. It is characterized by continuous inflammation of the mucous membrane, which begins in the rectum and expands to its further part. Common symptoms include: bloody diarrhea, abdominal pain and sometimes parenteral

symptoms. The purpose of therapy in this case is to initiate and maintain remission of the disease and improve the quality of life. Depending on the place of occurrence, the incidence rate for this disease varies from 0.5 to 31.5 cases per 100,000 a year. The incidence is lower in developing countries [12, 15]

During the treatment of inflammatory bowel diseases, it has been shown that physical treatments and physiotherapy are a good way of treating side effects. Exercise improves the quality of a patient's life and physical health. Exercises are usually used for 20-60 min, 2-5 times a week with complementary resistance exercises 2 times a week. The intensity of the recommended exercises is moderate. These exercises, in addition to reducing the discomfort of the disease, also increase muscle mass, prevent the occurrence of osteoporosis which is a serious complication inflammatory bowel diseases [10,13].

Data Sources

We searched the PubMed, Google Scholar, Researchgate and DOAJ up June 2018 without language restrictions for full papers reporting study with the search terms: physiotherapy, IBD, exercise. References lists of the original articles found Turing research was reviewed manually and cross checked. A Total of 8 articles were identified by these searchers (Figure 1)



Discussion

Inflammatory bowel disease is a chronic, recurrent and inflammatory disorder of the gastrointestinal tract and includes both Crohn disease and ulcerative colitis. In most patients, this disease is usually diagnosed in the first two decades of life (between 13-18 years of age) and its occurrence is relatively higher in developing countries. The etiology of this disease is unknown and consists of many factors among others: genetic determinants or the environment

[15]. The risk increases also in the case of smoking a poor diet or lack of physical activity. Studies show, however, that there is no one standard training for patients with inflammatory bowel disease, and the goal for this type of disease is to prevent harmful physiological changes resulting from a long stay in bed or a sedentary lifestyle [4]. With regard to this assumption, it is important to find the right intensity of exercise for these patients. In their studies, Ng and Klare showed that training 3x a week with an intensity of 50% -60% in the form of gait affects the setting of the quality of life of patients [5, 8]. As Klare described, this value among respondents increased by 19%, compared to the group of people who registered an improvement in the quality of life in 8% [5]. Sheth, Gerberg and Gupta have shown that aerobic exercises, learning proper breathing techniques and yoga have a positive effect on the side effects associated with inflammatory bowel diseases [1, 3, 11]. It has been shown that the use of yoga interventions and breathing training for 10 days every day, reduces inflammation, improves the quality of life and regulates blood pressure [3, 11]. In contrast, aerobic exercises used together with resistance exercises at the level of 50-60% intensity reduce pain and improve the peristalsis of the digestive system. Pitche, in turn, showed in his research that osteopathic techniques are an effective method to alleviate pain and improve the quality of life. Applied 3 times (each session after 15 consecutive days) reduced the feeling of tiredness and discomfort associated with IBD [2].

| Autor | Tytuł | Rok | Grupa badana | Interwencja | Wnioski |
|---------------------------|--|------------|---|---|--|
| Sandeep Sheth, M [1] | Crohn's disease and physical activity | 2017 | A 50 year old man with pain in the spine due to Crohn's disease | Exercise 4 times a week for 12 weeks - aerobic exercises - Training exercises on the treadmill - about 10 minutes - resistance classes with an intensity of 50-60% | -Improving the quality of life - Reduction of fatigue symptoms - Reduction of pain |
| Piche T at al. [2] | Osteopathy decreases the severity of IBS-like symptoms associated with Crohn's disease in patients in remission. | 2014 | 38 patients with CD during remission. Patients were randomly divided 2/1 Group 1- 25 people Group 2- 13 people | Three sessions of osteopathy on the 15th, 30th and 45th day of the study | Three sessions reduced the severity of CD-related symptoms, such as abdominal pain and discomfort |
| Gerbarg PL et al. | The Effect of Breathing, Movement and Meditation (...) | 2015 | 29 patients with inflammatory bowel disease between 18-85 years of age. Patients were randomly assigned to two groups (study and control group). 12 men and 17 women participated in the study. | The study group was subjected to a two-day workshop where participants were taught 4 breathing, movement and meditation techniques. Every week, subjects were subjected to a follow-up session. The control group participated in | In the study group there was an improvement in the symptoms of the disease i.e.: reduction of pain, improvement of the quality of life, reduction of the inflammatory marker |

| | | | | lectures on IBD and its treatment | |
|--------------------------|---|------|--|--|---|
| Klare P [5] | The impact of ten-week physical exercise program | 2015 | 30 patients with mild or moderate inflammatory bowel disease. Patients were divided into two groups. 1 group - tested, 2 control group | The study group has been subjected to exercises Control group - no control exercises Exercises were used 3 times a week for 10 weeks | In patients undergoing physical exercise, an improvement in the quality of life was observed |
| Jones P [6] | Exercise Decreases Risk of Future Active (...) | 2015 | People over 18 years of age recruited by means of the CCFA e-mail. Patients were at the time of remission of the disease. 1308 patients with CD and 549 patients with ulcerative colitis | Measurement of physical exertion during remission and after 6 months | In patients with CD in remission, a high level of physical activity reduces the risk of active disease |
| Johannesson E.[7] | Exercise and IBS; no pain no gain | 2011 | Study group: 37 patients undergoing physical training Control group: 3 patients without any intervention | In the study group, 12-week physical training was used, with physiotherapist control 1-2 times a month | In the study group, physical activity improves sleep quality, quality of life, oxygen intake and reduces fatigue. |
| Ng V.[8] | Low – intensity exercise improves quality of life (...) | 2007 | 32 patients participated in the study. They were divided into groups: test | In the study group participants had to train in the form of walking ³ | In the study group there was a significant improvement in the quality |

| | | | and control groups | times a week for three months, 30 minutes a day | of life without exacerbating the symptoms of the disease. |
|---------------------|--|------|---|---|--|
| Gupta N [11] | Effect Of yoga based lifestyle Intervention on state and trait anxiety | 2006 | 175 patients, including 98 men and 77 women between 19-76. There were 18 CD patients in the study group, the control group consisted of 50 patients | Yoga, meditation, stress management, nutrition. Patients were subjected to intervention for a period of 10 days | Studies have shown a reduction in stress symptoms in CD patients and reduced blood pressure. |

Conclusions

Physical exercises used in IBD patients reduce the symptoms of the disease: weakness, fatigue, pain in the joints and abdomen and increase the quality of life. The best therapeutic effects as noted are brought by aerobic and endurance exercises combined with resistance exercises at the level of 50-60% intensity, applied 3 times a week. Very good effects on reducing pain were also demonstrated in the case of osteopathic and yoga techniques. However, further studies are needed to confirm this review.

Literature

1. Sheth S.M, Khan M.A, Vyas P.H, Vyas J.N, *Crohn's disease and physical activity*, Journal of Mahatma Gandhi Institute of Medical Sciences, 2017; 22(1), 31-33.
2. Piche T, Pishvaie D, Tirouvaziam D, Filippi J, Dainese R, Tonohouhan M, DeGalleani L, Nébot-Vivinus MH, Payrouse JL, Hébuterne X, *Osteopathy decreases the severity of IBS-like symptoms associated with Crohn's disease in patients in remission*, Eur J Gastroenterol Hepatol. 2014; 26(12), 1392-1398.
3. Gerbarg PL, Jacob VE, Stevens L, Bosworth BP, Chabouni F, DeFilippis EM, Warren R, Trivellas M, Patel PV, Webb CD, Harbus MD, Christos PJ, Brown RP, Scherl EJ, *The Effect of Breathing, Movement, and Meditation on Psychological and Physical Symptoms and Inflammatory Biomarkers in Inflammatory Bowel Disease: A Randomized Controlled Trial*, Inflamm Bowel Dis, 2015; 21(12), 2886-2896.

4. Zeits J, Ak M, Muller-Muttet S, Scharl S, Biedermann L, Fournier N, Frei P, Pittet V, Scharl M, Fried M, Rogler G, Vavrica S, *Pain in IBD Patients: Very Frequent and Frequently Insufficiently Taken into Account*, Plos one, 2016; 10(1371).
5. Klare P, Nigg J, Nold J, Haller B, Krug AB, Mair S, Thoeringer CK, Christle JW, Schmid RM, Halle M, Huber W, *The impact of a ten-week physical exercise program on health-related quality of life in patients with inflammatory bowel disease: a prospective randomized controlled trial*, Digestion, 2015; 91(3), 239-247.
6. Jones P.D, Kappelman M.D, Martin Ch.F, Chen W, Sandler R. S, Long M.D, *Exercise Decreases Risk of Future Active Disease in Patients with Inflammatory Bowel Disease in Remission*, Inflamm Bowel Dis, 2015; 21(5), 1063-1071.
7. Johannesson E, Simren M, Strid H, *Exercises and IBS: no pain, no gain*, Am J Gastroenterol 2011;106:915–922.
8. Ng V, Millard W, Lebrun C, Howard J, *Low-intensity exercise improves quality of life in patients with Crohn's disease*, Clin J Sport Med. 2007; 17(5):384-8.
9. Shephard R.J, *The Case for Increased Physical Activity in Chronic Inflammatory Bowel Disease: A Brief Review*, Int J Sports Med. 2016, 37(7); 505-515.
10. Silva B.C, Lyra A.C, Rocha R , Santana G.O, *Epidemiology, demographic characteristics and prognostic predictors of ulcerative colitis*, World J Gastroenterol. 2014 Jul 28; 20(28): 9458–9467.
11. Gupta N, Kher Sh, Shama R, Bulani R.L, *Effect of yoga based lifestyle intervention on state and trait anxiety*, Indian J Physiol Pharmacol 2006; 50 (1) : 41–47.
12. Cosnes J, *Smoking, Physical activity, nutrition and life style: Environmental factors and their impact on IBD*, 2010;28:411–417.
13. Narula N, Fedorak RN, *Exercise and inflammatory bowel disease*, Can J Gastroenterol. 2008 May; 22(5): 497–504.
14. Ng V, Millard W, Lebrum C, Howard J, *Exercise and Crohn's disease: Speculations on potential benefits*, Can J Gastroenterol, 2006, 20(10):
15. Ye Y, Pang Z, Chen W, Ju S, Zhou Ch, *The epidemiology and risk factors of inflammatory bowel disease*, Int J Clin Exp Med. 2015; 8(12): 22529–22542.