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The effectiveness of massage based on the tensegrity principle compared with classical abdominal massage performed on patients with constipation

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ABSTRACT

Purpose of the research: The purpose of the study was to compare the effectiveness of massage based on the tensegrity principle and classical abdominal massage performed on patients with constipation.
Materials and methods: The study group consisted of 29 subjects with a pre-existing diagnosis of constipation based on the Rome III criteria. The patients were divided into two groups: the first group was made up of 15 patients who underwent tensegrity massage (average age: 59.8 years), and the second was made up of 14 patients who were given classical abdominal massage (average age: 55.7 years). The study consisted of six massage sessions in both groups, with two sessions per week performed over 21 days. The assessment was based on a patient questionnaire, the Rome III questionnaire and a diary of bowel movements. The results were analyzed before therapy, after one week of therapy and after the third (final) week of therapy.
Results: Changes in the number of defecations were compared between the two groups; the biggest changes occurred in the first and third week of therapy ($P < 0.01$, calculated by the Mann–Whitey test). As a result of the therapy, tension during defecation dropped from 60% to 20% in Group I, and from 42.8% to 35.7% in Group II. The influence of the applied therapy was evaluated positively by 80% of the tensegrity massage group and 29% of the classical abdominal massage group.
Conclusions: Massage based on the tensegrity principle may have a greater positive influence on the quality and quantity of bowel movements than classical abdominal massage.

1. Introduction

Constipation can be classified as one of the most frequent "embarrassing ailments" of the 21st century. The condition is not a disease, but a symptom and a lifestyle-related problem, most often reported by residents of highly developed countries (Tariq, 2007). Constipation affects about 20–25% of the population, with a predominance of women; the female-to-male ratio is 2.2:1 (Bharucha, 2007; Chitkara, Talley, Locke, Weaver, Katusic, & Schepper, 2007; Talley, Jones, Nuyts, & Dubois, 2003). It occurs among people of different ages (Be, 2006; Galal, 2007; Kalish & Loven, 2007; Talley et al., 2003; Wisten & Messner, 2005). It is a bothersome ailment that negatively affects the general physical and mental state, lowers physical and mental fitness, significantly hinders professional work, and decreases the quality of life (Gillespie & Price, 2008; Hicks, 2001; Johanson & Kralstein, 2007; Leung, 2007; Reid & Bahar, 2006). As factors that contribute to the incidence of constipation are very diverse and complex, treatment is a slow and long-term process (Hicks, 2001; Muller-Lissner, 2007; Talley et al., 2003; Wald, 2007). There are numerous conservative treatment methods for constipation, such as physical treatments, reflexotherapy, biofeedback, pharmacotherapy, and modification of lifestyle (Biggs & Dery, 2006; Cardin, Minicuci, Droghi, Inelmen, Sergi, & Terranova, 2010; Gillespie & Price, 2008; Kalish & Loven, 2007; Reid & Bahar, 2006; Simon, 2008; Wisten & Messner, 2005). It is also possible to use classical massage on

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Table 1
Rome III questionnaire and patient questionnaire.

Rome III questionnaire		
PC1. Have you had constant or recurring discomfort or pain in lower abdomen?	1. Yes	2. No (skip to PC5)
PC2. Is this discomfort or pain relieved by bowel movement?	1. Yes	2. No
PC3. Is this discomfort or pain related to a change in the number of bowel movements (either more or fewer)?	1. Yes	2. No
PC4. Is this discomfort or pain related to a change in stool consistency (looser or harder)?	1. Yes	2. No

PC5. In the last 3 months, have you had for at least (1/4) day/-s: (tick everything you have had)

1. fewer than 3 bowel movements a week (0–2)
2. more than 3 bowel movements a day (4 or more)
3. hard or lumpy stools
4. loose or watery stools
5. straining during bowel movements
6. a need to rush to the toilet to have a bowel movement
7. a feeling of incomplete emptying after a bowel movement
8. mucus (white substance) during a bowel movement
9. bloating, distension of your abdomen

Algorithm of symptoms of IBS
Rome Test is used for formal diagnosis of IBS. The algorithm suggesting IBS is as follows:
PC1 = Yes+
(PC2 = Yes or PC3 = Yes or PC4 = Yes)+
2 or more from the following:
PC5 = 1/PC5 = 2
PC5 = 3/PC5 = 4
PC5 = 5/PC5 = 6
PC5 = 7
PC5 = 8
PC5 = 9
Algorithm of IBS type
IBS type is known on the basis of the last question (PC5):

a) YES answers to questions 1,3,5 and one or none of questions 2,4,6 suggest constipation-predominant IBS (type A)
b) YES answers to questions 2,4,6 and one or none of questions 1,3,5 suggest diarrhea-predominant IBS (type C)
c) YES answers to two or more of questions 1,3,5 and two or more of questions 2,4,6 or one of the questions 1,3,5 and one of the questions 2,4,6 suggest alternating stool pattern IBS (type B)
d) Answers which do not fit any of the above criteria, but include YES answers to two of questions: 7,8,9, suggest IBS without predominating constipation/diarrhea (type B)

Patient questionnaire		
1. First and last name.....		
2. Phone number.....		
3. Date of birth.....		
4. Weight.....		
5. Height.....		
6. Sex	M	F
7. Do you smoke?	Yes	No
8. Since when have you had the problem?.....		

9. After a meal, do you have:

a) bloating of your abdomen
b) pain in your abdomen
c) diarrhea
d) constipation
e) passing gas

10. What kinds of foods intensify the symptoms?

a) spicy
b) greasy
c) roasted
d) fried
e) other

11. How often do you have bowel movements?

a) twice a day
b) every day

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