

EFFECTS OF CONNECTIVE TISSUE MANIPULATION IN PATIENTS WITH CONSTIPATION: A RANDOMIZED CONTROLLED TRIAL

Hypothesis / aims of study

Connective tissue manipulation (CTM) is a manual reflex therapy which increases intestinal motility by stimulating autonomic nervous system to re-balance the parasympathetic and sympathetic functions, usually moving in parasympathetic direction (1,2). However, there is no randomized controlled trial (RCT) regarding the efficacy of CTM in patients suffering from constipation (3). Therefore, the purpose of the present study was to investigate the effects of CTM in patients with chronic constipation.

Study design, materials and methods

This was a prospective, non-blinded RCT. Participants were recruited if they were over 18 years of age and had a diagnosis of chronic constipation according to Rome III criteria. Patients who were using laxatives and subjects who had neurologic, metabolic or colonic diseases or history of recent abdominal surgery were excluded. Subjects were randomly assigned to the intervention group (n=25) or the control group (n=25), using a computer generated block randomization procedure with blocks of four. The intervention group received CTM in addition to the lifestyle advice, while the control group was given only lifestyle advice for constipation.

CTM was applied five days per week, a total of 20 sessions for 4 weeks. Each session lasted around 15-20 minutes. While patients were in a sitting position, starting from the lumbosacral region, lower thoracic, scapular, interscapular and cervical regions were included in the treatment, respectively (Figure 1,2). With a two-pages document, all patients were also advised to increase their physical activity levels, fluid and fibre intake, and to take the ideal posture for defecation (squatting position).

All assessments were performed at baseline and at the end of 4 weeks. The primary outcome measure was the severity of constipation by Constipation Severity Instrument (CSI). The life impact by Patient Assessment of Constipation Quality of Life Questionnaire (PAC-QOL), stool consistency by Bristol Stool Scale (BSS) and symptoms of constipation from 7-day bowel diary were secondary outcomes. At last visit, patients' compliance with advices and satisfaction with treatment were also assessed with a Likert Type Scale.

The data obtained from the present study were analyzed by using SPSS version 21. Descriptive analyses were presented using means (standard deviations) for normally distributed and medians (interquartile range, IQR) for the non-normally distributed variables. Differences between groups were analysed with t-tests (normally distributed data), Mann-Whitney U test (non-normally distributed data) and Chi-Square tests (for categorical variables). The level of significance was set to 0.05.

Results

46 female and 4 male patients were enrolled in the study [median age (IQR): 40 (29.5-48) median Body Mass Index (BMI) (IQR): 22.9 (20.8-27.6)]. No significant differences were found between two study groups at baseline in patient characteristics or outcome measures. Patients' compliance with the advices did not also differ significantly between groups ($p > 0.05$).

Compared with control group, subjects in the intervention group reported significantly greater improvement in total and subscale scores of CSI and PAC-QOL ($p < 0.05$) (Table 1). Based on results from bowel diaries, the improvement in the number of bowel movements, duration of defecation, stool consistency and the feeling of incomplete evacuation in the intervention group was also significantly more than in control group ($p < 0.05$). Significantly more patients in the intervention group reported satisfaction with treatment than in control group (88% vs. % 44, $p < 0.001$).

According to t-test, post-hoc power analysis of total CSI score indicated that 99.3% power could detect difference of 10 points between groups.

Table 1. Comparison of changes in overall and subscale scores of CSI and PAC-QOL between treatment and control group.

$\Delta 1, \Delta 2$ differences between baseline and last visit, [†]Independent sample t-test.

	Intervention (n=25)	Control (n=25)	
	$\Delta 1$ (mean \pm SD)	$\Delta 2$ (mean \pm SD)	p value [†]
CSI			
Obstructive defecation	4.88 \pm 4.27	.68 \pm 2.01	<.001
Colonic inertia	3.76 \pm 5.91	.76 \pm 3.29	.002
Pain	2.52 \pm 2.77	.44 \pm 2.36	.006
Overall	11.08 \pm 10.06	.68 \pm 4.15	<.001
PAC-QOL			
Physical discomfort	3.08 \pm 3.04	.56 \pm 2.41	.002
Psycho-social discomfort	4.44 \pm 4.89	.04 \pm 3.58	.001
Worries/concerns	9.24 \pm 7.91	.24 \pm 5.3	<.001
Satisfaction	5.2 \pm 4.23	.76 \pm 2.91	<.001
Overall	12.32 \pm 11.46	.56 \pm 2.41	<.001

Interpretation of results

This is the first RCT investigating the effect of CTM in the treatment of constipation. According to the results of the present study, patients with constipation who had a 4 week CTM programme with lifestyle advice, demonstrated a greater improvement in constipation symptoms and QoL compared to those who had only lifestyle advice. Patients in the intervention group were also more

satisfied with their treatment. The strength of the present study is the RCT design and use of reliable and valid outcome tools. Limitations are the lack of more accurate assessment method for colonic function (such as colonic transit time) and non-blinding of assessors and patients.

Concluding message

In this study, connective tissue manipulation did not only reduce symptoms of constipation, but also improved quality of life. In patients with constipation, connective tissue manipulation seems to be an efficient physiotherapy method immediately after treatment, but the duration of this short-term effect is unknown. Further RCTs with more objective assessment method and long-term follow up are needed.

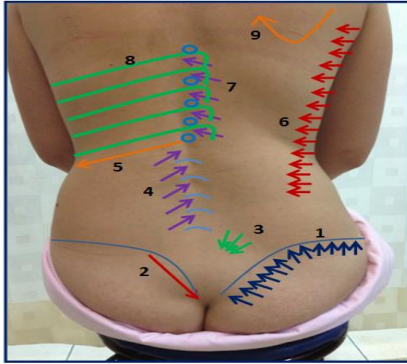


Figure 1. Unilateral application on lumbosacral (1-4) and lower thoracic areas (5-9).

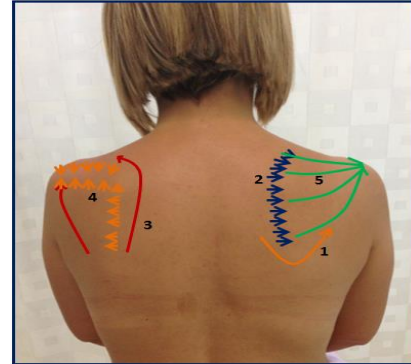


Figure 2. Unilateral application on scapular area (1-5)

References

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Disclosures

Funding: None **Clinical Trial:** Yes **Public Registry:** No **RCT:** Yes **Subjects:** HUMAN **Ethics Committee:** Local ethics committee of Hacettepe University (LUT 12/35) **Helsinki:** Yes **Informed Consent:** Yes