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# Mindfulness-based therapy for inflammatory bowel disease patients with functional abdominal symptoms or high perceived stress levels

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#### **KEYWORDS**

Inflammatory bowel disease; Irritable bowel syndrome; Psychotherapy; Mindfulness

#### **Abstract**

Background and Aims: Psychological interventions are used in patients with inflammatory bowel disease (IBD) but there is uncertainty about who the optimal target population is. Multiconvergent therapy (MCT) is a form of psychotherapy that combines mindfulness meditation with aspects of cognitive behavioural therapy and has been used in the management of irritable bowel syndrome (IBS). This study aimed to assess the feasibility and efficacy of MCT in the management of IBD patients with either functional abdominal symptoms or high perceived stress levels.

*Methods:* Sixty-six IBD patients in clinical remission with either IBS-type symptoms or high perceived stress levels were randomly allocated to a 16-week MCT course or waiting list control group. Patients were followed-up for one year with the Inflammatory Bowel Disease Questionnaire (IBDQ) as the primary outcome measurement.

Results: A higher mean IBDQ score was observed in the active group compared to controls at the 4-month assessment (167 vs. 156, p = 0.081), but this was not statistically significant nor did it reached the predefined clinically significant difference of 20. In patients with IBS-type symptoms at baseline there was a significantly higher mean IBDQ score in the active group compared to controls

Abbreviations: ANCOVA, analysis of covariance; ANOVA, analysis of variance; BFI, Big Five Inventory; CAI, Clinical Activity Index; CD, Crohn's disease; FC, faecal calprotectin; HADS, Hospital Anxiety and Depression Scale; IBD, inflammatory bowel disease; IBDQ, Inflammatory Bowel Disease Questionnaire; IBS-SSS, Irritable Bowel Syndrome Symptom Severity Scale; IBS, irritable bowel syndrome; ISEL, Interpersonal Support Evaluation List; ITT, intention-to-treat; MCT, multi-convergent therapy; MM, mindfulness meditation; NART, National Adult Reading Test; PSQ, Perceived Stress Questionnaire; RDHS, Revised Daily Hassle Scale; UC, ulcerative colitis; WCC, Ways of Coping Checklist.

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(161 vs. 145, p = 0.021). There was no difference between groups in relapse rate based on faecal calprotectin measurement.

Conclusions: IBS-type symptoms in patients with IBD represent a potential therapeutic target to improve quality of life. This study suggests that MCT may be useful in the management of these symptoms but larger studies are required to confirm this.

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#### 1. Introduction

A variety of psychotherapeutic interventions have been studied in patients with inflammatory bowel disease (IBD). These strategies include stress management, cognitive behavioural therapy, psychodynamic psychotherapy and hypnosis. <sup>1–4</sup> Meta-analysis of these trials has been limited due to diversity in the interventions used, patients included and outcomes analysed. Nevertheless, it appears that moderate improvements in mood disorders and quality of life (QOL) scores may occur whereas impact on disease activity seems minimal. <sup>5–8</sup> A Cochrane review of psychological interventions performed in unselected IBD patients concluded that psychotherapy should not be administered to all patients, but may be of benefit in specific circumstances and that further research should identify those sub-groups most likely to benefit. <sup>9</sup>

A recent meta-analysis of patients with IBD established that 25–46% of those in clinical remission have symptoms compatible with a diagnosis of irritable bowel syndrome (IBS). <sup>10</sup> These patients share similar characteristics to people diagnosed with IBS in the general population, and report a reduced QOL. <sup>11–13</sup> Psychological therapies have been shown to be an effective form of treatment in IBS and have been included in management guidelines. <sup>14–17</sup> It is feasible that IBD patients with IBS-type symptoms may represent a sub-group of patients that will benefit from psychotherapeutic intervention.

A second sub-group that could potentially benefit is those IBD patients with raised perceived stress levels. Several prospective studies have demonstrated that mood disorders and high perceived stress levels are associated with an increased risk of IBD relapse. However these studies did not use objective markers of intestinal inflammation to define relapse and instead relied on Clinical Activity Index scores. These indices can be influenced by IBS-type symptoms, which occur more commonly in the presence of mood disorders, and so it is possible that disease activity and therefore relapse rate may have been over-estimated as a result. Improving coping mechanisms and reducing perceived stress levels in this group may enhance outcomes by reducing the burden of functional symptoms.

Multi-convergent therapy (MCT) is a form of psychotherapy that combines mindfulness meditation together with aspects of cognitive behavioural therapy. Mindfulness is an awareness of the present moment experience, and emphasises attention on one's thoughts, bodily sensations and emotions. Through meditation, an ability to non-judgementally appreciate these aspects is developed with the aim of gaining a deeper perspective on one's own response to stress.<sup>22</sup> The clinical effectiveness of MCT has been demonstrated for the

treatment of IBS, tinnitus, and chronic fatigue syndrome but its applicability and efficacy in an IBD population has not previously been assessed.  $^{23-25}$ 

IBD patients with IBS-type symptoms or high perceived stress levels represent two sub-groups that could potentially benefit from psychological therapy. The aim of this study is to assess the feasibility and efficacy of multi-convergent therapy in the management of these two groups of IBD patients.

#### 2. Materials and methods

#### 2.1. Patients

Patients with IBD were recruited from gastroenterology clinics at the University Hospital Llandough and the University Hospital of Wales, Cardiff, United Kingdom between February 2011 and May 2012. Diagnosis of ulcerative colitis (UC) and Crohn's disease (CD) was verified according to the European Crohn's and Colitis Organisation criteria <sup>26,27</sup> and disease extent was defined according to the Montreal classification. <sup>28</sup> The study was approved by the South East Wales research ethics committee. The trial was registered at ClinicalTrials.gov: trial identifier NCT01426568.

The inclusion criteria were (i) age 18–65 years, (ii) diagnosis of UC or CD that was in remission based on a clinical index score and a C-reactive protein level <10 mg/l, and (iii) the presence of IBS-type symptoms or a high perceived stress level. (Definitions of these criteria are provided below).

The exclusion criteria were (i) pregnancy, (ii) the presence of ileostomy or colostomy, (iii) previous colectomy, (iv) change in IBD medication (including use of steroids) within 3 months of study entry, (v) change in psychotropic medication within 3 months of study entry, (vi) diagnosis of cognitive impairment, and (vii) previous psychological therapy.

#### 2.2. Intervention

Patients were randomly allocated to either the multiconvergent therapy course plus standard medical therapy (active group) or standard medical therapy alone (control group).

MCT employs a range of behavioural and cognitive techniques with mindfulness meditation as its central component. In this trial the therapeutic approach was standardised to follow the session plan summarised in Table 1. The MCT course consisted of six face-to-face sessions, each lasting for 40 min, and took place over a 16-week period. A single experienced therapist with qualifications in counselling and

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