

INFLAMMATORY BOWEL DISEASE AND FATIGUE: THE EFFECT OF PHYSICAL ACTIVITY AND/OR OMEGA 3 SUPPLEMENTATION

A. McNelly¹, I. Nathan¹, M. Monti², G. Grimble¹, C. Norton³, F. Bredin⁴, W. Czubier-Dochan³, S. Berliner⁵, M. Gay⁵, M. Darvell⁵, H. Terry⁵, A. Forbes⁶

¹UCL, ²UCLH, ³KCL, London, ⁴Addenbrooke's Hospital, Cambridge, ⁵Crohn's and Colitis UK, St Albans,

⁶Norwich Medical School/UEA, Norwich, UK

AIM

To test the effects on fatigue in Inflammatory Bowel Disease (IBD) patients from:

- Individual advice to increase physical activity (PA) and/or
- Supplementation with omega-3 fatty acids.

BACKGROUND

Fatigue is frequently reported by patients with IBD, despite disease remission. However, few previous intervention trials have specifically assessed this symptom.

METHODS

Design: Randomised controlled 2x2 factorial pilot study comparing change-from-baseline scores in intervention and control groups.

Primary outcome: Change in **FACIT-F (Functional Assessment of Chronic Illness Therapy - Fatigue)** score.

Main secondary outcomes: Change in fatigue survey scores including **IBD-Fatigue (IBD-F); PA by monitors (Actigraph, Pensacola, US); adverse effects.**

Eligibility: IBD remission; ≤2 portions oily fish/week; ≤ 60 minutes moderate-vigorous PA/week; no comorbidities causing fatigue; no depression.

Intervention:

Control: Placebo supplement; diet diary.

Exercise and placebo: Consultation (15 minutes) with personal trainer; activity and diet diary.

Diet treatment: Fish oil supplement (2.97g per day omega-3, "Take Omega 3"®, Edinburgh, UK); diet diary.

Diet and Exercise: Consultation with personal trainer (15 minutes); activity and diet diary.

All patients received follow-up support (email, telephone).

RESULTS

640 IBD outpatients screened
74 patients randomised
60 patients commenced the intervention
52 patients completed the study

Figure 1: Enrolment of IBD patients and completion of protocol.

Baseline: Similar parameters for gender, age, disease location, past IBD activity, level of PA, or FACIT-F.

Main fatigue outcomes:

- Significant deterioration in FACIT-F score (more fatigue) (95%CI: -8.6 to -0.7); p=0.02) with omega-3 fish oil
- Significant reduction in fatigue in exercise groups, measured by IBD-F Section I score (95%CI: -3.8 to -0.2; p = 0.03)

Variable	Exercise		Fish Oil	
	Mean (95% CI)	P-value	Mean (95% CI)	P-value
FACIT-F	1.8 (-2.3, 5.8)	0.38	-4.6 (-8.6, -0.7)	0.02
SCCI (*)	-0.6 (-1.8, 0.7)	0.37	-0.4 (-1.6, 0.9)	0.54
HBI (**)	-2.0 (-4.2, 0.2)	0.07	1.1 (-1.1, 3.3)	0.31
≥ 1 day missed (+)	0.70 (0.17, 2.96)	0.63	2.17 (0.52, 9.00)	0.29
Mean MVPA/day	-7.5 (-22.6, 7.6)	0.32	-9.9 (-25.1, 5.3)	0.20
Counts/minute	57 (-153, 39)	0.24	-46 (-142, 51)	0.35
Steps/day	-443 (-2829, 1942)	0.71	-1212 (-3600, 1176)	0.31
Wear time/day	-0.8 (-3.1, 1.4)	0.46	0.0 (-2.3, 2.3)	0.97
Calendar days	-0.8 (-2.0, 0.4)	0.17	-0.2 (-1.4, 0.9)	0.71
Haemoglobin	-0.1 (-0.5, 0.3)	0.63	0.0 (-0.4, 0.4)	0.93
CRP (**)	0.76 (0.48, 1.20)	0.24	0.95 (0.59, 1.51)	0.81
Weight (kg)	0.3 (-1.1, 1.7)	0.69	-0.3 (-1.8, 1.1)	0.64
IBD-F Section I	-2.0 (-3.8, -0.2)	0.03	0.7 (-1.1, 2.5)	0.42
IBD-F Section II	-3.8 (-10.4, 2.7)	0.25	6.0 (-0.4, 12.3)	0.07
MFI general	-1.5 (-3.1, 0.1)	0.07	0.1 (-1.5, 1.7)	0.92
MFI physical	-0.9 (-2.6, 0.8)	0.30	1.1 (-0.5, 2.8)	0.18
MFI activity	-0.7 (-2.6, 1.3)	0.50	1.1 (-0.8, 3.0)	0.26
MFI motivation	-0.9 (-2.6, 0.8)	0.30	0.9 (-0.8, 2.6)	0.30
MFI mental	-0.60 (-2.4, 1.2)	0.50	-0.38 (-2.2, 1.4)	0.67
IBDQ	3 (-7, 14)	0.56	2 (-9, 12)	0.74
Anxiety	0.0 (-1.5, 1.6)	0.97	0.9 (-0.6, 2.4)	0.23
Depression	0.1 (-1.3, 1.5)	0.86	1.0 (-0.4, 2.4)	0.16

Table: Main fatigue outcomes: (*) Figures for patients with UC and unclassified IBD. (**) Figures for patients with Crohn's and unclassified IBD. (+) Odds Ratio (95% CI) reported. (++) Variable analysed on log scale. Ratio (95% CI) reported. FACIT-F: Functional Assessment of Chronic Illness-Fatigue; SCCI: Simple Clinical Colitis Index; HBI: Harvey Bradshaw Index; MVPA: Moderate-Vigorous Physical Activity; CRP: C-reactive protein; IBD-F: IBD-Fatigue score; MFI: Multidimensional Fatigue Inventory; IBDQ: Inflammatory Bowel Disease Quality of Life Questionnaire.

- No significant interactions between effects of exercise and fish oil on fatigue
- No consistent trends in fatigue or PA levels across the various measures between the four treatment groups

Adverse events:

One treatment-related event (in exercise group); neither exercise nor fish oil were associated with likelihood of occurrence of adverse effects, including gastrointestinal symptoms.

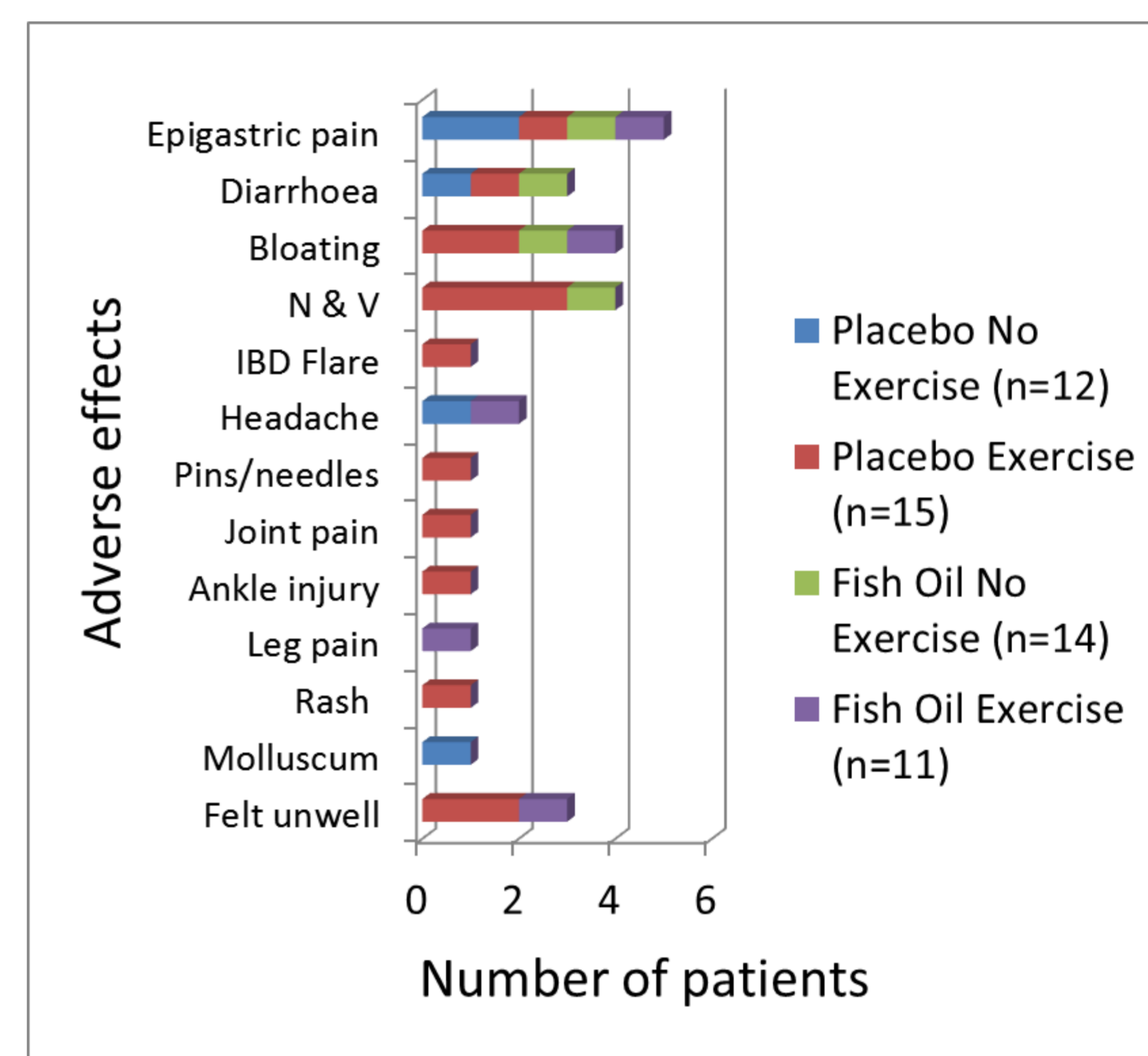


Figure 2: Frequency of adverse effects from exercise and/or fish oil supplement in IBD patients. N & V: nausea and vomiting.

CONCLUSIONS

The apparent worsening of fatigue with fish oil is unexplained. Exercise and fish oil, singly or in combination, were shown to be safe and generally well-tolerated in IBD patients. There was no evidence of adverse exercise-related effects on gut-related symptoms, and some evidence of improvement in fatigue. Hence, regular moderate-vigorous exercise may provide self-management options in IBD-related fatigue.

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