

Title: Psychosocial factors are associated with risk of flare in IBD; results from the PREdiCCt study

Introduction:

Patients with IBD suffer a high prevalence of psychological disorders and co-morbid depression. The true impact of psychosocial factors on the risk of experiencing a disease flare is unknown.

Methods:

We investigated associations between psychosocial factors and time to soft flare (patient-reported poorly-controlled disease) and hard flare (soft flare *plus* CRP >5 mg/L or faecal calprotectin(FC) >250 mcg/g *and* change in treatment) in adults with IBD in self-reported clinical remission.

Participants were recruited as part of the PREdiCCt study across 47 UK sites and followed up prospectively for 24 months.

At study entry, participants provided samples for standardised FC analysis and completed questionnaires evaluating anxiety(HADS-A), depression(HADS-D), sleep quality(PSQI), physical activity(GPAQ) and somatization(PHQ15).

Soft flares were self-reported via monthly online questionnaires, hard flares were recorded by FC and CRP testing at time of soft flare and by end-of-study phenotyping.

We conducted survival analyses with Cox frailty models for time to soft- and hard flare, performed separately for Crohn’s disease(CD) and UC/IBDU cohorts, adjusting for baseline FC, sex, index of multiple deprivation, hospital site ± age.

Results:

A total of 1641 participants[CD=830, UC/IBDU=811] were included, 36%[n=595; CD=280, UC/IBDU=315] reported soft flare and 13%[n=219; CD=99, UC/IBDU=120] experienced hard-flare.

Risk of hard flare was increased for UC patients with elevated HADS-D scores of 8-10(p<0.001, 95%CI 1.51-4.47) and 11-21(p=0.042, 95%CI 1.02-4.64), and decreased for those who met WHO-recommended exercise levels(p=0.034, 95%CI 0.43-0.97).

Risk of soft flare was significantly associated with HADS-A scores, HADS-D scores(UC/IBD), sleep disturbance(CD) and somatization(Table1).

Table1

Baseline Questionnaire	Score	Soft Flare		Hard flare	
		CD	UC/IBDU	CD	UC/IBDU
Anxiety (HADS-A)	8-10	p=0.001 (95% CI 1.21-2.22)	p=0.08 (0.96-1.72)	p=0.78 (0.64-1.81)	p=0.46 (0.73-1.97)
	11-21	p<0.001 (1.37-2.52)	p=0.015 (1.07-1.99)	p=0.64 (0.66-1.92)	p=0.13 (0.88-2.48)
Depression (HADS-D)	8-10	p=0.09 (0.95-1.98)	p=0.005 (1.07-1.99)	p=0.37 (0.71-2.45)	p<0.001 (1.51-4.47)
	11-21	p=0.39 (0.77-1.91)	p=0.042 (1.01-2.65)	p=0.95 (0.42-2.25)	p=0.042 (1.02-4.64)

Sleep (PSQI)	≥5	p<0.001 (1.22-2.04)	p=0.1 (0.96-1.52)	p=0.55 (0.74-1.72)	p=0.32 (0.82-1.80)
Somatization (PHQ15)	5-10	p=0.001 (1.30-2.90)	p=0.004 (1.14-2.05)	p=0.043 (1.02-3.44)	p=0.35 (0.79-1.95)
	10-15	p<0.000001 (1.94-4.53)	p=0.020 (1.06-2.10)	p=0.19 (0.79-3.18)	p=0.78 (0.61-1.90)
	15-30	p<0.000001 (2.34-6.45)	p=0.004 (1.24-3.02)	p=0.044 (1.02-5.40)	p=0.98 (0.44-2.21)
Exercise (GPAQ)	≥minimum recommended by WHO	p=0.38 (0.85-1.51)	p=0.73 (0.79-1.39)	p=0.63 (0.56-1.41)	p=0.034 (0.43-0.97)

Conclusions:

We assessed a range of psychosocial factors in a large IBD cohort. We identified depression as a risk factor for hard flare and exercise as a protective factor, both in UC. Sleep disturbance, somatization, anxiety and depression were associated with soft flare in IBD.