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PMO-8 THE RELATIONSHIP BETWEEN INFLAMMATORY BOWEL DISEASE ACTIVITY AND SLEEP EFFICIENCY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction Sleep disturbance is often reported amongst patients with IBD. Emerging evidence suggests a bidirectional relationship between gut and brain mediated by neuro-immunomodulatory mechanisms. Gastrointestinal symptoms including pain and bowel disturbance that occur in active disease as well as associated psychological stress may thereby impact both sleep quality and quantity. However, few studies have explored sleep in patients with IBD using objective measures such as wrist actigraphy or polysomnography. We, therefore, aimed to systematically review the relevant literature with particular regard to the impact of disease activity on sleep efficiency in IBD patients.

Methods An electronic search of Medline, EMBASE, Cochrane Library and National Library of Medicine Clinical Trial Database was carried out. Equivalent combinations of keywords relating to 'Inflammatory Bowel Disease' and 'Sleep' in line with PRISMA guidelines were used to identify studies reporting information on IBD activity and objective measures of sleep. All articles were reviewed individually by two assessors for eligibility and any conflicts were resolved through discussion to reach a final decision. The Oxford CASP tools were utilised to explore risk of bias, study validity and generalisability. Using a fixed-effects model, sleep efficiency data in active and inactive Crohn's disease patients were pooled and continuous data were summarised. Heterogeneity between studies was assessed by the I^2 statistic as defined by the Cochrane Handbook for Systematic Reviews.

Results The initial search produced 780 articles. 8 eligible studies were identified and included for qualitative synthesis. 4 of these studies were eligible for quantitative synthesis (meta-analysis), comprising 158 participants (73 with active Crohn's Disease and 85 patients in remission). 95% CI of two studies in this meta-analysis straddled unity but the overall trend was higher sleep efficiency in remission compared to active Crohn's (SMD, - 4.60; 95% CI, -7.03, -2.16, p= 0.0002) (Figure.1). Heterogeneity between studies was low (I^2 = 0%, p =0.74).

Conclusions This meta-analysis reveals CD patients with active disease have a poorer sleep efficiency compared to those in remission but data in UC is lacking. Further work, using objective instruments to assess sleep efficiency, is needed to characterise the interplay between disease activity and sleep quality in IBD.

PMO-9 REDUCING INTRAVENOUS MONOCLONAL ANTIBODY OBSERVATION TIMES WITHOUT COMPROMISING PATIENT SAFETY; A SINGLE-CENTRE OBSERVATIONAL STUDY.

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Introduction Monoclonal antibodies (MAbs) are integral to manage Inflammatory Bowel Disease (IBD). At Brighton & Sussex University Hospital, intravenous MAbs, infliximab and vedolizumab, are administered in an outpatient setting. Licensing specifies post-infusion observation times of 1 to 2 hours. This affects waiting lists and capacity.

Methods A single-centre observation study was conducted.

Part 1 Retrospective data was collected for all infliximab and vedolizumab infusions from April to July 2019. Patients seen twice, were included once. For established infusion patients, historical reactions were recorded. Reaction incidence was established by observations, patient questioning and record review.

To standardise the reactions, we used the cancer Common Terminology Criteria for Adverse Events; grade 3 is 'severe'.

Part 2 Observation time was removed from infusion 4 in April 2020. Prospective data was collected for all infliximab and vedolizumab infusions from April to December 2020. Multiple attendances were included.
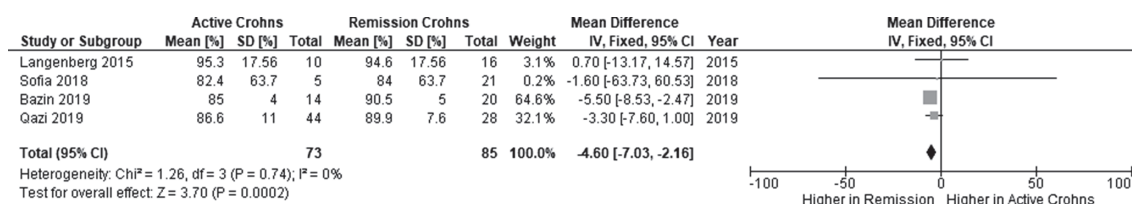
Results

Part 1 130 infliximab patients (2607 infusions) and 69 vedolizumab patients (557 infusions) were reviewed.

No severe reactions were recorded. All reactions occurred during induction. Analysis showed high levels of 'no reactions observed' after the first 4 infliximab infusions 97.7% (+1.6%, -4.7%), and the first 3 vedolizumab infusions 96.9% (+2.3%, -8.8%).

121 hours could be saved for infliximab and 64 hours for vedolizumab. Extrapolated this equates to 740 hours per year.

Part 2 679 infliximab infusions were administered (including 12 new starters). 418 vedolizumab infusions were administered (16 new starters). No reactions were reported.

Conclusions All infusion reactions occurred within 3 infusions, were non-severe and managed in clinic. By removing observation periods from infusion 4, capacity increased in concordance with COVID-19 social distancing, without affecting waiting times or patient safety. Patient experience was

Study or Subgroup	Active Crohns Mean [%]	SD [%]	Total	Remission Crohns Mean [%]	SD [%]	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
Langenberg 2015	95.3	17.56	10	94.6	17.56	16	3.1%	0.70 [-13.17, 14.57]	2015
Sofia 2018	82.4	63.7	5	84	63.7	21	0.2%	-1.60 [-63.73, 60.53]	2018
Bazin 2019	85	4	14	90.5	5	20	64.6%	-5.50 [-8.53, -2.47]	2019
Qazi 2019	86.6	11	44	89.9	7.6	28	32.1%	-3.30 [-7.60, 1.00]	2019
Total (95% CI)			**73**			**85**	**100.0%**	**-4.60 [-7.03, -2.16]**	

Heterogeneity: Chi² = 1.26, df = 3 (P = 0.74); I² = 0%
Test for overall effect: Z = 3.70 (P = 0.0002)

Abstract PMO-8 Figure 1 Forest plot with studies comparing sleep efficiency in patients with active vs. inactive Crohn's disease

Absreact PMO-9 Table 1

			Pt	Inf	Reactions	Inf Occurrence	Grade	Symptoms	Management	MAb Stopped
IINFLIXIMAB	Part 1	Induct	130	2607	3 (0.12%)	1	2	Itching	Chlorphenamine IV	No
						2	2	Flushing & chest tightness	Hydrocortisone IV, chlorphenamine IV + paracetamol PO	Yes
						3	2	Shortness of breath	Chlorphenamine IV	No
		Maint	121	2583	0	-	-	-	-	-
	Part 2	-	NC	679	0	-	-	-	-	-
VEDOLIZUMAB	Part 1	Induct	69	557	1 (0.18%)	1	1	Headache	Paracetamol PO	No
		Maint	64	550	0	-	-	-	-	-
	Part 2	-	NC	418	0	-	-	-	-	-

Key: Pt – patients, Inf – infusions, MAb – monoclonal antibody, Induct – Induction, Maint – maintenance, IV – intravenous, PO – oral, NC – not collected

anecdotally improved. Further data from other centres are required to prove significance.

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Introduction Artificial intelligence (AI) is making rapid in-roads in various aspects of gastroenterology (GI). Early studies have shown potential for the use of AI in the diagnosis and management of inflammatory bowel disease (IBD). Our aim was to explore the current understanding of clinicians for the role of AI in GI and IBD in particular.

Methods A 15-question survey was developed in consultation amongst the authors and distributed to members of the American College of Gastroenterology (ACG) & British Society of Gastroenterology (BSG) in May 2020. The questionnaire was approved by the ACG Research Committee and the BSG IBD Committee for the USA and the UK, respectively. Data was analysed using R software Version 3.5.2.

Results A total of 249 members (USA-175, UK-74) responded. IBD surveillance colonoscopies were being performed by 84.7%. A total of 171 (68.7%) respondents were aware of the potential use of AI in GI. Specifically, 140 (81.9%) were aware of current use of AI for colonic polyp detection, 82 (47.9%) for Barrett's surveillance, 72 (42.1%) for capsule endoscopy, 41 (24%) in early gastric cancer detection and 7 (4.1%) for IBD.

Furthermore, 86.5% thought that AI could potentially improve IBD care in the future. The 3 most unmet needs in surveillance colonoscopy in patients with IBD were appropriate surveillance intervals (58.6%); accurate histopathology and dysplasia detection (57.4%); and yield from different biopsy protocols (51.4%). Suggested areas for use of AI in IBD were real time assessment and endoscopic scoring (73.1%), earlier detection of colorectal cancer (70.2%), facilitating 'personalised' care (50.9%) and
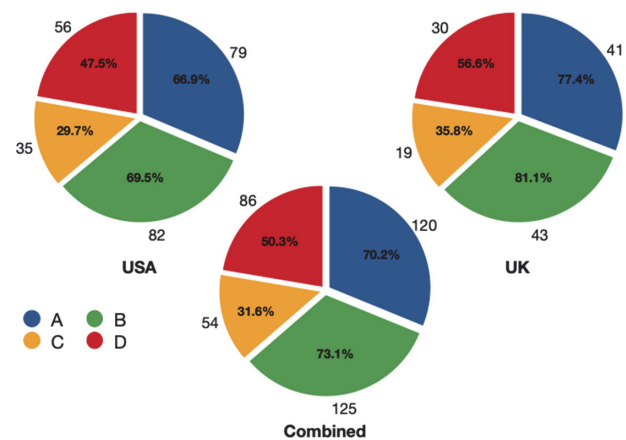
Abstract PMO-10 Figure 1 Suggested areas for use AI in IBD

distinguishing Crohn's disease from ulcerative colitis at index colonoscopy (31.6%).

Respondents projected that AI would be available in clinical practice for IBD soon; 13.4% in <1 year; 34.5% < 2 years and 52.1% < 5 years. The potential perceived barriers for use of AI in gastroenterology were cost (66.7%), uncertainty about technology (61.4%) and access to AI courses (47.3%). Respondents had concerns regarding patient safety with use of AI (26.3%) and concerns regarding patient confidentiality (39.8%).

Conclusions There is a high level of awareness for AI in polyp detection but significantly less in IBD. Respondents felt that AI could improve endoscopic assessment in IBD, dysplasia surveillance and aid personalised care. Cost, unfamiliarity with AI technology and access to AI courses were perceived as likely barriers.

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