



Published in final edited form as:

Gastro Hep Adv. 2024 ; 3(2): 181–183. doi:10.1016/j.gastha.2023.11.007.

Inflammatory Bowel Disease Patients in the Ambulatory Setting Commonly Screen Positive for Malnutrition

AARON C. VISER¹, ADELAIDE R. COOKE¹, HANS H. HERFARTH^{1,2}, CHELSEA ANDERSON², CHRISTINA PROCH², ANNE F. PEERY^{1,2}

¹University of North Carolina School of Medicine, Chapel Hill, North Carolina

²Center for Gastrointestinal Biology and Disease, University of North Carolina School of Medicine, Chapel Hill, North Carolina

Malnutrition is common in patients with inflammatory bowel diseases (IBDs) and is associated with an increased risk of morbidity and mortality.¹ Guidelines recommend IBD patients be screened for malnutrition in the setting of multidisciplinary care and positive screens have an urgent consultation with a registered dietitian.² While IBD patients account for 2.2 million ambulatory visits annually in the United States, estimates of patients at risk for malnutrition and the most feasible tools for screening for malnutrition are poorly defined in the outpatient care setting.³ To inform our need for same-day dietitian support in the IBD clinic, we estimated the proportion and characteristics of ambulatory IBD patients who screened positive for malnutrition using a validated screening tool.

We performed a cross-sectional study of patients in our multidisciplinary IBD clinic between June 7, 2022, and July 19, 2022. We included all patients aged 18 years or older presenting for routine clinical care, seen in person, and with confirmed Crohn's disease or ulcerative colitis. We used the Malnutrition Screening Tool (MST) to screen for malnutrition.⁴ Patients were screened in person during the visit by a health-care professional. The MST is a validated and reliable tool used in medical and surgical populations.⁵ The MST includes 3 questions: Have you recently lost weight without trying? If yes, how much weight have you lost? (0–4 points based on weight loss) Have you been eating poorly because of a decreased appetite? (0–1 points) A score of 2 or more identifies a patient at risk for malnutrition.

This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Correspondence: Address correspondence to: Anne F. Peery, MD, MSCR, University of North Carolina School of Medicine, Bioinformatics Building CB # 7080, 130 Mason Farm Road, Chapel Hill, North Carolina 27599-7555. Anne.Peery@med.unc.edu.

Conflicts of Interest:

This author discloses the following: Hans H. Herfarth has served as a consultant for: Alivio, AMAG, Bristol Myers Squibb, Boehringer, ExeGI, Finch, Fresenius Kabi, Galapagos, Gilead, Janssen, Lycera, Merck, Otsuka, Pfizer, PureTech, Seres, Ventyx and research support from Artizan Biosciences, Allakos, NovoNordisk, and Pfizer. The remaining authors disclose no conflicts.

Ethical Statement:

Our institutional review board determined this excepted from review (IRB number 22–1132).

Data Transparency Statement:

The data will not be made available to other researchers.

Reporting Guidelines:

STROBE.

Supplementary Materials

Material associated with this article can be found in the online version at <https://doi.org/10.1016/j.gastha.2023.11.007>.

We collected age, sex, visit type (new vs return), height, weight, body mass index, IBD type, disease activity status as determined by the IBD provider using standardized IBD assessments (flare vs remission), surgical history, IBD medications, smoking status, and enteral and/or parenteral nutrition use. Means were calculated for continuous variables and proportions for categorical data. We performed bivariate comparisons using the t-test or chi-square test. To determine the association between patient characteristics and a positive malnutrition screen, we estimated odds ratios (ORs) and 95% confidence intervals (CIs) using logistic regression. All data were collected in a REDCap database and analyses were conducted using SAS version 9.4 (Cary, NC). Our institutional review board determined this excepted from review.

Between June 7, 2022, and July 19, 2022, 300 patients were seen by 7 attending gastroenterologists in the University of North Carolina Chapel Hill IBD clinic. Among the 300 patients, 237 (79%) were screened for malnutrition. Among the 237 IBD patients, 33 (14%) screened positive for malnutrition. The MST took 2–3 minutes per patient to administer. The prevalence of a positive screen was 15% among patients with Crohn's disease and 12% among patients with ulcerative colitis. Inflammatory bowel disease (IBD) patients who screened positive for malnutrition were more likely to be new consults, to have a normal body mass index, active disease, a history of smoking, or to be taking corticosteroid or aminosalicylate medications (Table). The prevalence of a positive screen was 28% among patients with active disease and 8% among patients in remission. In models adjusted for age and sex, IBD patients with active disease were more likely to screen positive for malnutrition compared to patients in remission (OR 4.6, 95% CI 2.1–10.2) (Table A1). Former smokers (OR 2.4, 95% CI 1.0–5.7) and current smokers (OR 2.3, 95% CI 0.4–12.3) were also more likely to screen positive than nonsmokers (Table A1).

In our prospective study in an academic IBD clinic, 1 in 7 patients (14%) screened positive for malnutrition. We screened consecutive patients seen in IBD clinic over a 6-week time period and collected detailed demographic data to better describe patients at risk. We used the validated MST to screen for malnutrition.⁴ In 2020, the Academy of Nutrition and Dietetics recommended the MST be used to screen for malnutrition regardless of patient age, medical history, or setting. In our study, the MST could be easily and efficiently implemented into the clinic encounter.

Prior studies estimated that 16%–18% of ambulatory IBD patients screen positive for malnutrition or meet malnutrition criteria. A chart review of 110 IBD patients found that 16% screened positive for malnutrition.⁶ A pilot study screened 2388 IBD patients with the modified Malnutrition Universal Screening Tool. Among those screened, 18% were high-risk. The screening tool has not been validated and requires an assessment of disease activity.¹ A prospective study of IBD outpatients estimated that 16% had a diagnosis of malnutrition. The estimate was limited to a select population; only 333 out of 1271 patients were assessed.⁷

Most patients who screened positive in our cohort had a normal or overweight body mass index. This finding is an important reminder that malnutrition risk can develop at any body mass index. Active disease was significantly associated with a positive screen for

malnutrition and, 28% of the patients in an IBD flare in our study had a positive screen for malnutrition. Similarly, 2 previous studies found that 36% of patients with a new IBD diagnosis (therefore active disease) met criteria for malnutrition.^{8,9}

Our work has limitations. We planned to screen every IBD patient for malnutrition during the study period but missed a proportion of patients (21%) when multiple clinic visits occurred simultaneously. We did not collect data on IBD disease duration. Most of the IBD patients in our cohort likely had long-standing disease. While the risk of malnutrition is higher in patients with a new diagnosis of IBD (36% in prior studies), a positive screen for malnutrition appears to be common in established patients. The results of this study may not generalize to the nonacademic setting.

In conclusion, a positive screen for malnutrition is common in IBD patients seen in the ambulatory setting. Inflammatory bowel disease (IBD) patients at risk for malnutrition require urgent consultation with a registered dietitian. A dietitian can make a definitive malnutrition diagnosis, estimate the patient's energy and protein needs, and help develop a plan to meet these needs. The validated 3-question MST could be easily implemented in routine clinical care in an IBD clinic with the aim to provide same-day dietitian support for patients at risk for malnutrition.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Funding:

This study was funded in part by the National Institutes of Health through Grant Award Numbers P30 DK034987. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

Abbreviations used in this paper:

CI	confidence interval
IBD	inflammatory bowel disease
MST	Malnutrition Screening Tool
OR	odds ratio

References

1. Hwang C, et al. *Clin Gastroenterol Hepatol* 2020;18:2645–2649.e4. [PubMed: 32599016]
2. Kinnucan J, et al. *Gastroenterology* 2019;157:242–254.e6. [PubMed: 30980795]
3. Ma C, et al. *Clin Gastroenterol Hepatol* 2020;18:2500–2509. e1. [PubMed: 31988046]
4. Ferguson M, et al. *Nutrition* 1999; 15:458–464. [PubMed: 10378201]
5. Skipper A, et al. *J Acad Nutr Diet* 2020;120:709–713. [PubMed: 31866359]
6. Haskey N, et al. *Asia Pac J Clin Nutr* 2018;27:756–762. [PubMed: 30045418]
7. Casanova MJ, et al. *J Crohns Colitis* 2017;11:1430–1439. [PubMed: 28981652]
8. Gold SL, et al. *Inflamm Bowel Dis* 2023;29:423–429. [PubMed: 35590456]

9. Ciocirlan M, et al. J Gastrointestin Liver Dis 2019;28:163–168. [PubMed: 31204412]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Characteristics of the Ambulatory Inflammatory Bowel Disease Patient Population

Characteristics	Positive screen malnutrition (N = 33)	Negative screen malnutrition (N = 204)	P value
N (%) or mean			
Age in years	46.6	49.3	.39
Sex			.98
Male	42%	43%	
Female	58%	57%	
Body mass index, kg/m ²			.68
Underweight (<18.5)	3%	3%	
Normal (18.5–25)	47%	38%	
Overweight (25–30)	27%	25%	
Obese (>30)	23%	34%	
Smoking history			.22
Never smoker	53%	69%	
Former smoker	40%	28%	
Current smoker	7%	4%	
Visit type			.15
New	30%	19%	
Return	70%	81%	
Disease type			.51
Ulcerative colitis	27%	32%	
Crohn's disease	73%	66%	
Indeterminate	0%	<1%	
Disease status			<.001
Active	61%	26%	
Remission	39%	74%	
Surgical history			
Small bowel resection	21%	20%	.88
Ileocecectomy	15%	19%	.63
Colectomy	18%	26%	.34

Characteristics	Positive screen malnutrition (N = 33)	Negative screen malnutrition (N = 204)	P value
Ileal pouch-anal anastomosis	3%	10%	.20
IBD medications			
5-Aminosalicylic-acid	25%	12%	.05
Steroids	15%	10%	.43
Immunomodulator (thiopurine or methotrexate)	13%	15%	.68
Biologic (Infliximab, adalimumab, golimumab, certolizumab, vedolizumab, ustekinumab)	64%	64%	.96