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Letter to the Editor

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Assessment of Fecal Glycosylated Mucins as Novel Biomarkers in Inflammatory Bowel Diseases

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To the Editors:

With great interest we read the article by Robbe Masselot et al,[1] who reported on human fecal mucin glycosylation in patients with inflammatory bowel disease (IBD) and non-IBD individuals. Using stool samples from 48 patients with Crohn's disease (CD), 12 individuals with unrelated IBD, and 5 healthy control (HC) subjects, glycosylation profiles of fecal mucins (O-glycans) were analyzed. Expression levels of 4 specific O-glycans were compared between patients with active CD, patients with inactive CD, patients with unrelated IBD, and HC subjects. The authors concluded that their novel approach of mucin analysis could be a reliable tool to distinguish CD patients from unrelated IBD patients, and that it may even be relevant beyond the scope of IBD.

Based on these compelling data and the formulated aim of determining the ability of O-glycans to discriminate between CD and unrelated IBD (ie, patients with irritable bowel syndrome or HC subjects), we reasoned that extended data analysis may be worth pursuing. For example, receiver-operating characteristic analysis could be useful to assess the ability of O-glycans to discriminate between IBD and non-IBD, evaluating both sensitivity and specificity across different classification thresholds.[2] This approach helps to assess overall discriminative performance and may be utilized to find potentially optimal cutoffs, preferably followed by cross-validation to generate more realistic estimates. Although we acknowledge that this does not directly guarantee clinical relevance, it would provide additional information and is easily interpretable.

Additionally, we think that it would be relevant to correlate O-glycan expression levels with available disease activity indicators such as the Harvey-Bradshaw Index and Pediatric Crohn's Disease Activity Index as clinical disease activity scores, and fecal calprotectin levels that reflect biochemical disease activity. Although CD patients were divided into active and inactive groups, it is unclear what (combined) cutoffs were adopted, and Table 1 demonstrates incongruent calprotectin levels in both groups. Because clinical and biochemical measures often demonstrate inconsistent associations with each other as well as with endoscopic and histopathological disease activity,[3] and may differ across disease locations,[4] this would justify separate investigation. Finally, 1-way analysis of variance—assuming normal distributions—would be appropriate for comparing 3 or more groups, followed by post hoc tests (adjusted for multiple testing) in case of overall significance (P value based on the F value from analysis of variance).[5]

The data presented by Robbe Masselot et al are important and interesting; however, more granular data analysis could enhance their potential clinical significance. This would also render them more attractive for future validation in larger cohorts.

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Conflicts of Interest

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