small bowel abnormalities in three out of seven patients with joint hypermobility syndrome without pseudo-obstructive episodes.

An intensive therapeutic approach was started with high-dose daily macrogol and bi-weekly magnesium sulfate, but the clinical response was quite scarce. Prucalopride, 2 mg/day was therefore started, but the results were only partial, still requiring association with other laxatives, and did not improve abdominal pain. When in 2014 linaclotide, a potent peptide agonist of the guanylate cyclase C receptor effective on both constipation and abdominal pain in patients with constipation and irritable bowel syndrome [5] became available in our country, we proposed this approach to the patient. After careful explanation of the possible side effects, a dose of 290 μg/day was started in July 2014, and the patient referred improvement of her symptoms within a week, with progressive decrease up to disappearance of abdominal pain within two weeks, and resolution of subocclusive episodes and normalization of bowel movements (average, three per week) within the first month, leading to withdrawal of the other laxatives. Since then, the patient continues linaclotide without experiencing further pseudo-obstructive symptoms or abdominal pain.

Linaclotide is a potent guanylate cyclase agonist, recently available in clinical practice for the treatment of chronic constipation and constipation-predominant irritable bowel syndrome [5]. The interest of this drug in our case was due to the fact that linaclotide has been shown to be effective to relieve symptoms related to constipation, with the further advantage of being effective on abdominal pain [5]; these considerations induced us to try this treatment after failure of conventional treatments.

Therefore, we feel that this report on the long-term benefit of linaclotide treatment might be interesting and to give suggestion to add another potentially useful treatment for patients with pseudo-obstruction, in whom the drug might help to improve their quality of life, and perhaps to spare further surgical interventions.

Conflict of interest

None declared.

Ethics committee approval

N/A.

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Patient age determines adherence to preventive care measures among patients with ulcerative colitis

Dear Editor,

Ulcerative colitis (UC), a type of inflammatory bowel disease (IBD), affects approximately 900,000 people in the United States. In light of the impact IBD has on quality of life, costs, and disease burden, IBD-specific quality measures were adopted by the Center for Medicaid and Medicare Services Physician Quality Reporting System (PQRS) [1]. Despite these metrics, adherence has remained low in both academic and community based practices, particularly among IBD patients <50 years of age [2,3]. The aim of this study was to assess the influence of patient age and gender on adherence to quality metrics among patients with UC.

We performed a retrospective, cross-sectional study of outpatients with UC seen between January 1, 2014 and December 31, 2015. Patients with UC were identified using the International Classification of Diseases, Ninth Revision (ICD-9) codes (556.X). UC diagnosis was validated based on chart review for standard clinical, endoscopic, and histopathologic criteria. Patients were excluded if <18 years of age or underwent colectomy prior to 2014.

Our study focused on assessing adherence and predictors of adherence to eight outpatient IBD-specific PQRS quality metrics [1]:

1. Assess IBD type, anatomic location, and status of disease activity (PQRS #269)
2. Assess use of corticosteroid-sparing therapy (PQRS #270)
3. Assess bone-loss assessment for those on corticosteroids ≥10 mg/d for ≥60 days or more (PQRS #271)
4. Recommendation, administration, or documentation of receipt of influenza immunization in 2013 and 2014 (PQRS #272)
5. Recommendation, administration, or documentation of receipt of pneumococcal vaccination within past 5 years (PQRS #273)
6. Testing for latent tuberculosis before initiating anti-TNF therapy (PQRS #274)
7. Testing for hepatitis B virus before initiating anti-TNFα therapy (PQRS #275)
8. Assess for tobacco use within preceding year (PQRS #226)

Table 1
Baseline characteristics of patients with UC.[a]

	Age <50 (n = 258)	Age ≥ 50 (n = 373)	*p-Value*
Age (mean), years (SD)	37 (8.0)	65 (10.1)	n/a
UC location—rectum, n (%)	71 (28)	68 (18)	0.02
UC location—left sided disease, n (%)	61 (24)	107 (29)	
UC location—extensive disease, n (%)	122 (47)	194 (52)	
UC duration (mean), years (SD)	9.9 (7.2)	18.9 (14.0)	<0.01
Current tobacco use, n (%)	14 (5)	13 (3)	<0.01

[a] Numbers may not add up to 631 if data missing or not available at time of study.

Table 2
Quality measure adherence based on age of patient with UC.

	Age <50 (n = 258)	Age ≥ 50 (n = 373)	*p-Value*
Influenza vaccine 2014, n (%)	58 (22)	169 (45)	<0.01
Pneumococcal vaccine (within past 5 years), n (%)	30 (12)	133 (36)	<0.01
DEXA, n (%)	41 (16)	165 (44)	<0.01
Anti-TNF therapy exposure, n (%)	61 (24)	40 (11)	<0.01
Vedolizumab exposure, n (%)	11 (4)	7 (2)	0.08
Hepatitis B assessment prior to Anti-TNF, n (%)	59 (97)	33 (83)	0.01
Latent TB assessment prior to Anti-TNF, n (%)	57 (93)	38 (95)	0.75

[a]DEXA: dual-energy X-ray absorptiometry; TNF: tumor necrosis factor; TB: tuberculosis.

Statistical analyses were performed using StataMP 13 (STATA Corp., College Station, TX). All analyses used 2-sided statistical tests.

The final study cohort included 631 patients with UC (48% male; mean age 53 ± 17 years) (Table 1). Average UC duration for the entire cohort was 15 years (SD 13). Documentation of UC location and tobacco use exceeded 98%. Patients aged ≥50 were more likely to have been vaccinated to S. pneumoniae (36% vs. 12%, $p < 0.01$) and influenza (45% vs 22%, $p < 0.01$) than patients <50years of age (Table 2). Gender did not influence vaccination rates. Bone-loss assessment using DEXA scan was more common among women (44% vs 21%, $p < 0.01$) and patients ≥50 years ($p < 0.01$).

The prevalence of biologic exposure in this cohort was 16% (101/631) anti-TNF therapy and 3% (18/631) vedolizumab. Current or prior use of anti-TNF therapy was more common among patients age < 50 years, but use of vedolizumab was similar. Among the 119 UC patients with biologic exposure, nine patients had no EMR documentation of hepatitis B virus (HBV) testing or tuberculosis (TB) testing. Age appeared to influence pre-biologic testing for HBV but not TB. Rates of influenza and pneumococcal vaccination did not differ significantly based on whether patients received biologic therapy.

In this study examining determinants of adherence to quality metrics in patients with UC, documented compliance was nearly 2-3-fold higher for patients age ≥ 50 compared to those age <50, despite a significantly longer UC disease duration and higher percentage with biologic exposure in the latter. Gender did not appear to influence vaccination rates, but bone-loss assessment was more common among women. Our observed rates of immunization and bone loss assessment were similar to other studies [4]. Over 92% of patients in our cohort underwent testing for HBV and TB prior to biologic therapy, higher than reported in other IBD studies [5,6].

Our findings would suggest closer adherence to standard age-based ACIP recommendations rather than unique IBD-based guidelines. An important limitation of our study includes utilizing an EMR that may limit ascertaining true rates of vaccination, as well as discern whether metrics were initiated by the primary care physician, gastroenterologist, or both. Process-based improvement strategies are needed to increase adherence to quality measures, particularly for younger patients with IBD, particularly as the armamentarium of targeted immunosuppressive therapies expands.

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Conflict of interest

Gauree Gupta Konijeti: Previously received honoraria from Abbvie, Janssen, Pfizer, and Takeda. The other authors report no relevant conflicts of interest.

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