Predictors and Early Indicators for Inflammatory Bowel Disease in Patients With Psoriatic Arthritis

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OBJECTIVE

Electronic health records and insurance claims data were used to identify predictors for the development of inflammatory bowel disease (IBD) present in patients meeting diagnosis criteria for PsA, and early indicators of new-onset IBD in patients with PsA

CONCLUSIONS

At the time of PsA diagnosis, 28.1% of patients have predictors for later development of IBD

Among patients with PsA who develop new-onset IBD, 86.2% present symptoms or early indicators within 180 days prior to diagnosis of IBD

Clinicians should have a high clinical suspicion for IBD in patients with PsA who are at increased risk for IBD or are experiencing precursors to IBD to enable earlier diagnosis and inform treatment decision-making

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References

1. Coates L, et al. *Nat Rev Rheumatol*. 2022;18:465-479.
2. Aletaha D, et al. *Adv Ther*. 2019;36:1672-1683.
3. Mielants H, et al. *J Rheumatol*. 1995;12:2266-2272.
4. Manasson J & Scher JU. *Curr Rheumatol Rep*. 2015;10.
5. Blackwell J, et al. *J Crohns Colitis*. 2021;203-211.

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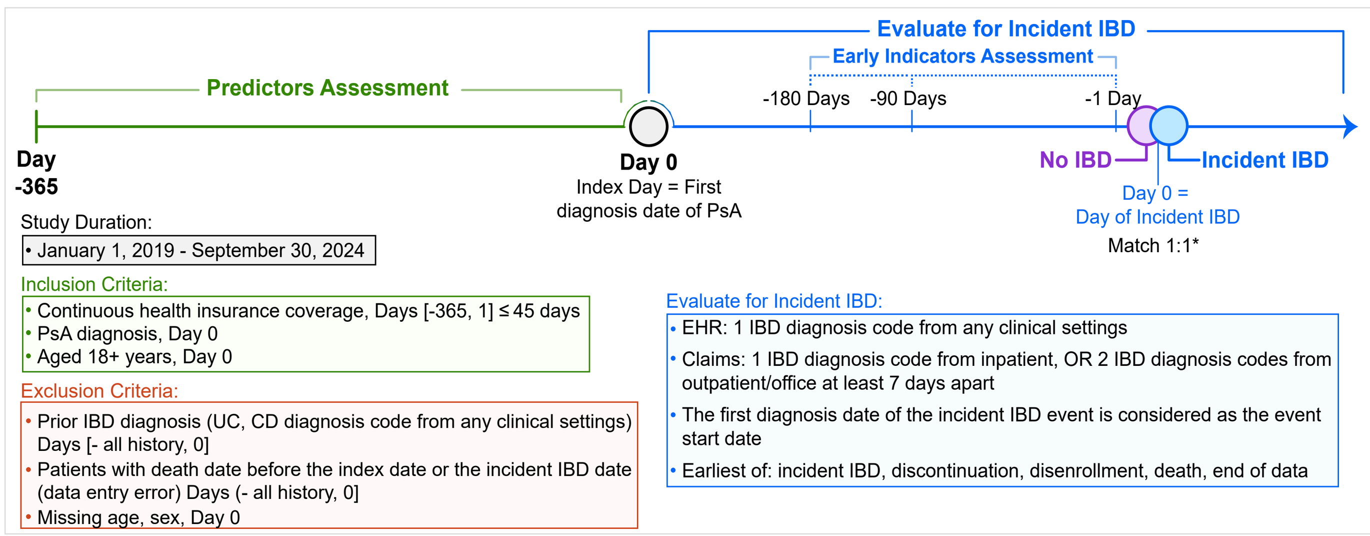
INTRODUCTION

- PsA is a chronic inflammatory condition characterized by heterogeneous clinical manifestations
  - Inflammatory bowel disease (IBD), encompassing both Crohn's disease (CD) and ulcerative colitis (UC), is recognized by treatment guidelines as an extra-musculoskeletal manifestation for patients with PsA[1]
- In a retrospective review of US insurance claims, patients with PsA had a 7.3 times higher risk of developing IBD compared with matched controls;[2] subclinical gut inflammation has been reported in more than half of patients with PsA[3,4]
- Knowledge of the common predictors for developing IBD and the early indicators for new-onset IBD in patients with PsA could facilitate improved clinician-informed treatment decisions

METHODS

- Data from the Optum Market Clarity database were used to identify patient cohorts with a first PsA diagnosis between January 1, 2019 and September 30, 2024
  - PsA diagnosis required: 1 diagnosis from the electronic health record (EHR), 1 diagnosis on an inpatient claim, or 2 outpatient claims ≥7 days apart
- The index date for this analysis was the first diagnosis of PsA in the dataset
- Patients had to be at least 18 years old and have continuous health insurance (gap ≤45 days) for at least one year prior to index date
- Exclusion criteria included prior IBD diagnosis (UC or CD diagnosis codes in EHR or claims) and missing age or sex
  - IBD diagnosis required: 1 diagnosis from the EHR, 1 diagnosis on an inpatient claim, or 2 outpatient claims ≥7 days apart
- The incidence of IBD was measured as the number of patients with new-onset IBD divided by total person-time contributed up to the event, end of study period, or full set of censoring criteria and reported as n/1000 patient-years (PY)

Study Design



CD, Crohn's disease; EHR, electronic health record; IBD, inflammatory bowel disease; PsA, psoriatic arthritis; UC, ulcerative colitis.
*Exact match on age, gender, region, and year of cohort entry.

Predictors Assessment:

- Predictors for IBD were assessed in the year preceding PsA diagnosis
- Potential predictors were selected through a combination of subject matter expertise, prior literature, and a data-driven approach evaluating frequent diagnoses and symptoms observed in the time period prior to IBD
  - These included literature-defined IBD-presenting symptoms,[5] other frequently observed diagnosis and symptom codes and natural language processing (NLP) terms in the EHR physician note related to gastrointestinal (GI) systems in the time prior to diagnosis, prescription of GI medications (proton pump inhibitors, histamine H2 blockers, antacids), other medications (NSAIDs, glucocorticoids), healthcare resource utilization (HCRU), demographic information, and comorbidities
- Predictors were identified via Cox models as factors with a significant and large effect on new onset IBD (hazard ratio [HR] > 2) and that occurred frequently (prevalence >10%) in patients who developed IBD

Early Indicators Assessment:

- To identify early indicators of IBD, patients who developed IBD were matched 1:1 by age, sex, US region, and year of index date to patients with PsA who did not develop IBD
- Presence of each potential early indicator was evaluated within the 180 and 90 days preceding IBD diagnosis among those who developed IBD and compared during the same time post-PsA diagnosis to matched patients without IBD diagnosis
- In this time period, the subset of potential predictors that could be considered subclinical indicators of IBD (ie, all evaluated predictors except for demographics and comorbidities) was evaluated as a potential early indicator
- Identified early indicators were those that appeared significantly and clinically meaningfully more frequently pre-IBD (frequency difference > 10%) and were common (prevalence > 10-15%) in the pre-IBD period

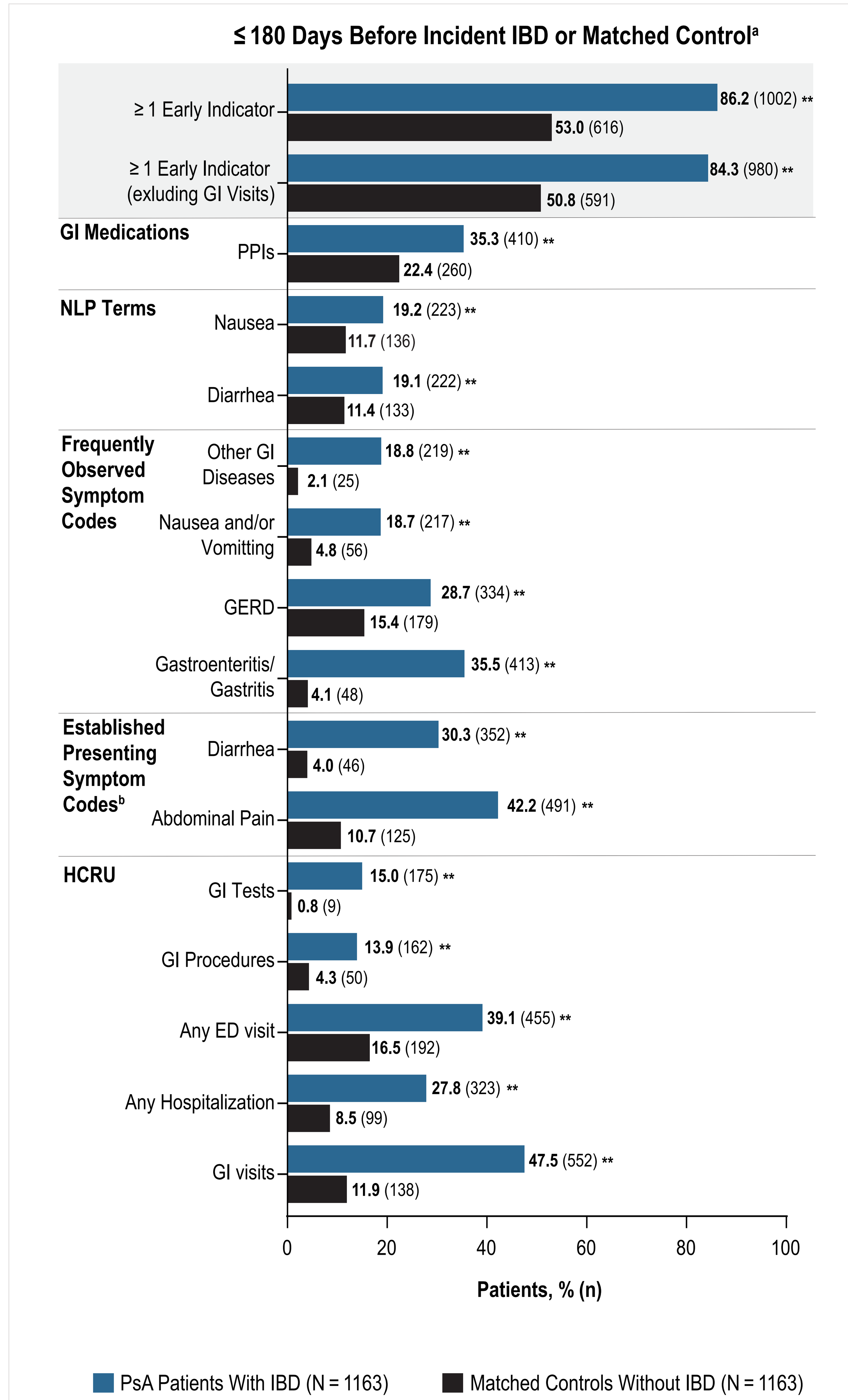
RESULTS

- Of the 132 682 patients in this study, 1163 developed new-onset IBD, corresponding to an incidence rate of 2.80 per 1000 PY (95% CI: 2.64, 2.97)

Early Indicators for New-Onset IBD:

- We identified 14 early indicators for new-onset IBD present within 180 days of IBD diagnosis (**Figure 1**)
  - The most prevalent early indicators present among patients who developed IBD were GI visits (47.5%), abdominal pain (42.2%), and gastritis/gastroenteritis (35.5%)
- At least one of these early indicators was present in 86.2% of patients before IBD diagnosis
  - When excluding GI visits, 84.3% of patients had ≥1 early indicator

Figure 1. Proportion of Patients With PsA and Early Indicators for New-Onset IBD, Within 180 Days Before IBD Diagnosis

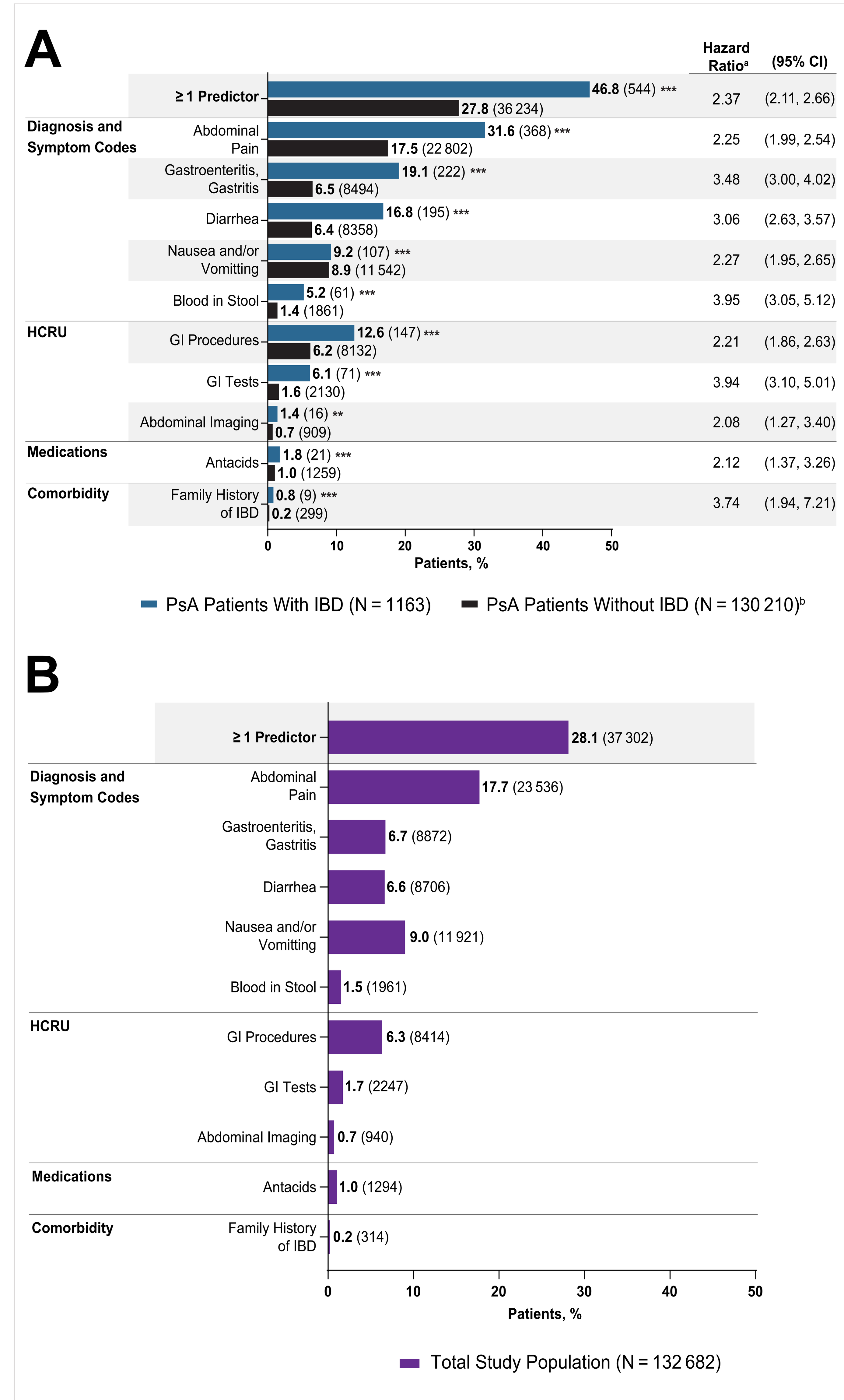


ED, emergency department; GERD, gastroesophageal reflux disease; GI, gastrointestinal; IBD, inflammatory bowel disease; HCRU, healthcare resource utilization; NLP, natural language processing; PsA, psoriatic arthritis; PPIs, proton pump inhibitors.
[a]IBD and non-IBD cohorts were matched 1:1 by age, gender, region, and year of index date.
[b]Derived from Blackwell et al. *J Crohn's Colitis*. 2021;203-211.
P value calculated using Student's t test; ** *P* < 0.01.
All potential predictors, except family history of IBD, were also investigated as potential early indicators.

Predictors of IBD at Initial Diagnosis of PsA

- We identified 10 predictors for IBD present at initial PsA diagnosis in the data (**Figure 2A**)
  - The predictors carrying the greatest risk were blood in stool (HR: 3.95, [95% CI: 3.05, 5.12], *P* < .001), family history of IBD (HR: 3.74, [95% CI: 1.94, 7.21], *P* < .001), and gastroenteritis/gastritis (HR: 3.48, [95% CI: 3.00, 4.02), *P* < .001)
  - The other 7 predictors (abdominal pain, diarrhea, nausea and/or vomiting, GI procedures, GI tests, abdominal imaging, and antacid use) were also associated with increased risk of IBD
- Collectively, 37302 patients (28.1% of the entire study population) displayed one or more of these 10 IBD predictors at the time of their PsA diagnosis **(Figure 2B)**

Figure 2. Proportion of Patients With IBD Predictors Stratified by IBD Diagnosis (A) and in the Total Study Population (B)



IBD, inflammatory bowel disease; GI, gastrointestinal; HCRU, healthcare resource utilization; PsA, psoriatic arthritis.
[a]Hazard ratios determined using Cox proportional hazard model.
[b]A small percentage (1%) of the PsA cohort in the predictor analysis lacked adequate information to determine IBD status, so they were removed from the predictor evaluation analysis.
P value calculated from Cox proportional hazard model; ** *P* < 0.01, ** *P* < .001.