

Introduction and Aim

Arthritis is a recognized extra-intestinal manifestation of inflammatory bowel disease (IBD). Several studies show evidence of altered uric acid metabolism in patients with IBD. Gout is a crystal deposition disease characterized by hyperuricemia that exceeds the limit of urate solubility and causes tissue depositions leading to inflammatory arthritis. The aim of this study is to investigate the association between IBD and gout.

Methods

We used a commercial database (Explorys Inc, Cleveland, OH), an aggregate of Electronic Health Record data from 26 US healthcare systems. We identified adults (Age > 18 years) with the diagnosis of Crohn's disease (CD), and ulcerative colitis (UC) in the period from 1999 to 2022. In this cohort, we identified patients who developed a clinical diagnosis of gout. We collected demographic data including age, gender and race. We also identified patients with diagnosed IBD-associated arthritis and those who had intestinal resection. Risk factors associated with gout like chronic kidney disease (CKD), malignancy, alcohol and smoking are collected. Univariate and multivariate analysis are used to assess the association of CD and UC with gout, accounting for risk factors. IBM SPSS® Statistics version 28.0.1 is used for statistical analysis.

Results

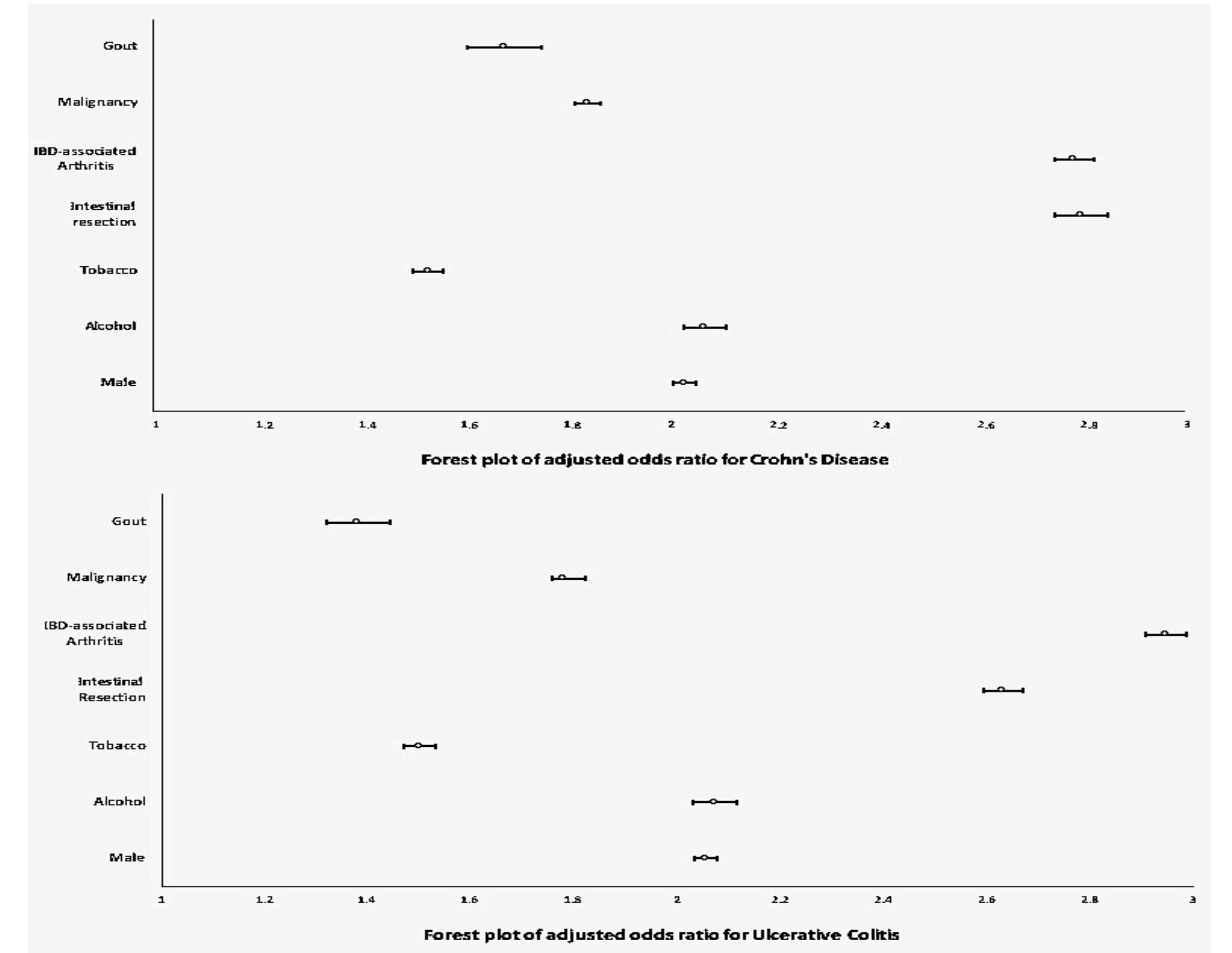
Out of the 69,260,780 adult patients in the database, we identified 209,020 patients with UC (0.30%) of whom 9130 had gout (4.3%). In addition, 249,480 had CD (0.36%) of whom 14000 had gout (5.61%). The majority of patients were > 65 years old. Males were more prevalent in the UC and gout groups than in the CD and gout groups (58% vs 51%). The majority were Caucasians across the two groups. Adjusting for age, gender, CKD, malignancy, IBD-associated arthritis, intestinal resection, alcohol and smoking, CD is significantly associated with gout (OR 1.68 CI [1.60-1.75]). UC is also found to be significantly associated with gout (OR 1.38 CI [1.31-1.44]). In subgroup analysis in both groups against intestinal resection, CD group who had intestinal reaction had higher association with gout vs no surgery (OR 2.34 [2.25-2.43]). Similar increase is observed in UC group who had intestinal resection (OR 1.53 [1.49-1.56]).

Table 1: Demographic characteristics of IBD patients with gout

	UC + Gout	CD + Gout
Total cohort	9130	14000
Age 18-65	2740 (30%)	5340 (38%)
Age >65	6350 (70%)	5870 (61%)
Gender		
Male	5290 (58%)	7120 (51%)
Female	3820 (42%)	6850 (49%)
Race		
Caucasian	7480 (82%)	11570 (83%)
AA	960 (11%)	1220 (9%)
Asian	110 (1%)	350 (3%)
Hispanic	30 (0.3%)	120 (1%)
Unknown	550 (6%)	740 (5%)

UC: Ulcerative Colitis; CD: Crohn's disease; AA: African American

Figure 1: Forest Plots for Adjusted Odds Ratio for Crohn's disease and Ulcerative Colitis



Conclusion

In this large retrospective study, we found that IBD is strongly associated with gout with higher correlation observed with CD. Intestinal resection is associated with an increase in the risk of gout. Patients with IBD who present with new-onset arthritis should be investigated for gout.

Contact

Osama Hamid MD, MRCPI
Department of Hospital Medicine, Cleveland Clinic Foundation
Email: hamido2@ccf.org
Phone: 216-379-5459