High Prevalence of Ulcerative Colitis in US Residents of Indian Origin

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Background

The prevalence of Inflammatory bowel disease (IBD), including both Crohn Disease (CD) and ulcerative colitis (UC) is reportedly high in Ashkenazi Jews, but it is believed to be very low in the population from South and East Asia[1-5].

Several reports summarized in a 2010 consensus meeting of the Indian Society of Gastroenterology suggest that, at least in Northern India, ulcerative colitis may be more common than previously suspected[6].

It is also unclear whether the reported low prevalence in Asia is real (due to genetic or environmental factors) or spurious (due to different awareness of the condition among physicians or their different interpretation of the endoscopic and histological features of CD and UC).

Other studies have speculated that UC may be more common in Indians residing in Western countries than in those who live in the subcontinent[2-5]. In this respect, a recent study reported a high prevalence of severe IBD in children of Indian ancestry, particularly Punjabis, living in British Columbia[7].

Aims

The aim of this study was to estimate the prevalence of CD and UC in patients of different ethnicities who had endoscopy performed in the U.S. with ileocolonic biopsies evaluated by a single group of gastrointestinal pathologists.

Study Design and Methods

From a large national pathology database of unique subjects who had colonoscopy with ileocolonic biopsies between 1.2008 and 12.2013 in endoscopy centers throughout the US, we extracted the following groups of patients:

- Indians (persons with ancestry in the Indian Subcontinent)
- East Asians (China, Korea, Japan, and Vietnam),
- Hispanic
- Jewish descent
- Other Americans (US residents - Caucasians and African-Americans – not specifically identified with any of the above groups).
- All data were gathered from one endoscopic procedure only; if a patient had multiple procedures with different sets of biopsies, only the chronologically first encounter was used in this analysis.

Diagnostic Criteria

Criteria for CD included chronic ileitis or colitis, rectal sparing, normal mucosa interspersed with inflamed areas ("skip lesions") or non-necrotizing granulomas. Continuous colonic involvement and absence of granulomas was required for a diagnosis of ulcerative colitis.

Cases of UC with a diagnosis indicating a high degree of severity were categorized as "severe ulcerative colitis."

Cases were all patients with a definite diagnosis of UC or CD; controls were all other patients.

We then compared the prevalence of CD and UC in the different groups using unadjusted odds ratios.

Results

Compared to other Americans, the prevalence of Crohn disease was higher in Jewish and Indian patients and lower in both Hispanics and East Asians; these latter two groups had also significantly lower rates of ulcerative colitis. Jewish patients had a higher prevalence of UC.

The prevalence of UC in Indians was almost 4 times that of other Americans and almost 7 times that of East Asians. Amongst Indians, a subset of patients of Gujarati origin had a particularly high prevalence of IBD: In this group, 58 of 599 subjects (9.7%) had UC and 12 (2.0%) had CD.

The severity of disease was not substantially different amongst the different groups: in all populations approximately 20% of patients were noted to have severe ulcerative colitis.

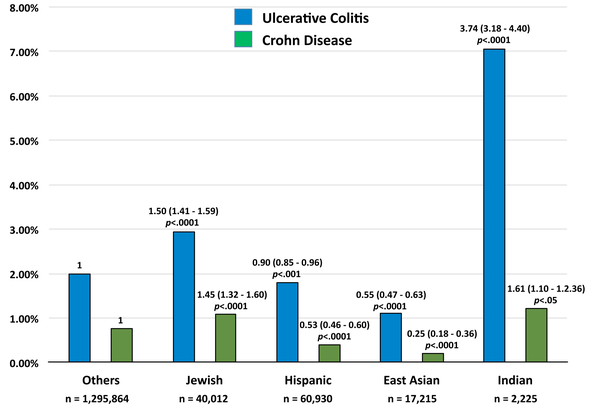

Figure 1 summarizes the prevalence of CD and UC in the different groups. The Odds Ratios (with 95% confidence interval) on top of each bar refer to Other Americans, whose risk was arbitrarily set at 1.

Study Highlights

- Patients of Indian origin had the highest prevalence of UC of all ethnic groups studied (7.1%).
- The prevalence of UC was even higher in a subgroup of patients of Gujarati ancestry (9.7%).
- East Asians had the lowest prevalence of IBD.
- Regularly reporting high colonic eosinophilia may result in increased opportunities for studies that might lead to a better definition of this still elusive entity.
- We speculate that in Indian subjects genetic factors may interact with new environmental conditions to trigger the expression of disease. Such factors do not seem to be operative in East Asians and Hispanic patients.

References

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