Low Prevalence of Microscopic Colitis and Inflammatory Bowel Disease in Americans of East Asian Ancestry

Kevin Turner, Robert M. Genta
Miraca Life Sciences Research Institute, Miraca Life Sciences, Irving, TX, United States.

Background
East Asian countries have historically reported low incidences of microscopic colitis and inflammatory bowel disease (1); however, it is unclear whether these data reflect genetic, or environmental factors or are the result of different diagnostic criteria among physicians and pathologists. This question could be answered, at least in part, by comparing the prevalence of microscopic colitis (lymphocytic and collagenous) and IBD (ulcerative colitis, UC, and Crohn disease, CD) in patients of East Asian ancestry who live in the US and have had colonoscopies in the US to a group of non-Asian US patients.

Aims
The aim of this study was to estimate the prevalence of these conditions among patients of East Asian ancestry who live in the US, and had their biopsies evaluated by a single group of US gastrointestinal pathologists.

Study Design and Methods
From a large national pathology database of unique subjects who had colonoscopy with fecalocytic biopsies between 1.2008 and 12.2013 in endoscopy centers throughout the US, we extracted the following groups of patients:
- East Asian (China, Korea, Japan, and Vietnam)
- Hispanic
- Non-Asian (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-recrudescent granulomas. Continuous colonic involvement and absence of granulomas were required for a diagnosis of ulcerative colitis. Histologic findings were correlated with clinical and endoscopic information to formulate the ultimate classification. Criteria for microscopic colitis included the presence of an intraepithelial lymphocytosis, increased cellularity of the lamina propria, and surface degeneration for lymphocytic colitis. In addition to these findings, an abnormally thickened and dense layer of subepithelial collagen was required for the diagnosis of collagenous colitis.

We then compared the prevalence of lymphocytic and collagenous colitis, CD and UC in the different groups using unadjusted odds ratios. The Odds Ratio for Non-Asian, non-Hispanic Americans was arbitrarily set at 1.

Results
There were 17,227 East Asian subjects (median age 59 years, range 1 - 102; 53% male), 60,992 Hispanic patients (median age 58 years, range 1 mo. - 100; 47% male), and 907,694 Other Americans (median age 60 years, range 1 mo. - 104; 49% male).

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Figure 1 – Lymphocytic colitis (left, H&E), characterized by lymphoplasmacytic expansion of the lamina propria and an intraepithelial lymphocytosis. A CD3 immunohistochemically stained section highlights the increased intraepithelial lymphocytes (right).

Figure 2 – 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 value was arbitrarily set at 1.

Figure 3 – Prevalence of Lymphocytic and Collagenous Colitis in the different groups. The Odds Ratios (with 95% confidence interval) on top of each bar refer to Other Americans, whose value was arbitrarily set at 1.

Study Highlights
- Patients of East Asian ancestry in the US have a significantly lower prevalence of both IBD and microscopic colitis than either Hispanics or other non-Hispanic, non-East Asian Americans.
- All groups of patients were similar in age and sex distribution, had their endoscopic procedures in similar US settings, and their histopathologic diagnoses were made by a single pathology group whose members adhere to common criteria.
- Therefore, the remarkably low prevalence of non-infectious colitides detected in this analysis is likely to reflect, at least in part, genetic factors.
- Determining the relative risk in several generations of Asians in the US might help determine whether environmental factors play a significant role in the development of these conditions.

References