Editorial

Inflammatory Bowel Disease: A Global Disease

See article on page 16

Over the last two decades, there has been a remarkable globalization of inflammatory bowel disease (IBD) with a striking increase in especially Crohn's disease.[1] The relationship between genetics, microbiota, and environment are being unraveled at an exponential rate.[2,3] The rapid increase of Crohn's disease point to significant globalized environmental contributions. The rising prevalence and incidence of IBD has been recently confirmed in a global systematic review. The number of genes implicated in the susceptibility to IBD has now increased to 163 loci[2] that meet GWAS significance threshold. Many of these implicate novel pathways such as autophagy as well as susceptibility to mycobacterial infections. There is also genetic overlap between IBD and other autoimmune diseases such as ankylosing spondylitis and psoriasis.

A unique real life experiment in IBD pathogenesis is occurring in geographical areas of the world such as the Far East and Middle East[1,4] that has seen a sharp rise in incidence of IBD. The divergent incidence rates of Crohn's disease and ulcerative colitis point to different environmental triggers or influences that may drive these two diseases. Changing dietary habits, food additives, Westernization, medication use, sanitization of society, and increasing visceral fat may all interact with human intestinal microbiota and change its diversity or function. It has been shown for juvenile onset IBD in Scotland that socio-economic deprivation may be protective for Crohn's disease, especially interesting as Scotland has reported a large recent increase in juvenile onset Crohn's disease.[5,6] In the Middle East and other countries where IBD, especially Crohn's disease, is emerging, the distinction between IBD and chronic infective diseases may be problematic.[7]

Studies have indicated a rise in the incidence of Crohn's disease in Saudi Arabia[8-10] as well as in Kuwait[11,12] with almost a five-fold increase in Crohn's disease.[8] In this issue of the Saudi Journal of Gastroenterology, a retrospective study by Al-Mofarreh *et al*,[11] describes the presentation as well as the phenotypic characteristics of 693 cases of IBD who were diagnosed over a time period of 17 years in a single center. The proportion of Crohn's to ulcerative colitis reported in the article is in keeping with prior reports;[10,13] the investigators also noted a higher male predominance of disease while there was no differences noted in studies from the same region.[10,12,13] The article demonstrates a striking increase in newly diagnosed Crohn's disease over time when compared to a constant rate of ulcerative colitis. Some of these patients (10.8%) had already been diagnosed with Crohn's disease prior to their presentation, but the majority had a new diagnosis. Although the article does go into details with regards to the clinical, laboratory, endoscopic, and radiological findings in these patients, we think that the method of reporting is somewhat limited, as the exact denominators for all of these results were not reported systematically, nor were any measures of effect used to explore potential associations or differences between subgroups. Also of note is the striking rise in the proportion of cases with Crohn's disease that were diagnosed in the year 2009, where 174 out 427 colonoscopies (40.7%) were found to have Crohn's disease. We find this proportion to be high, and this emphasizes the need to elaborate further on the case definition used in the study. Furthermore, as noted by the authors, this increased trend of newly diagnosed Crohn's disease might be due to a referral bias and not be representative of the population, as the exact catchment area of the clinic cannot be specified, thus limiting the inferences that could be made. Nonetheless, this data adds to the growing literature addressing the emergence of IBD in the Gulf Cooperation Council countries, and the associated burden for patients as well as the health care systems that should adapt to their needs.

Increasing awareness of IBD may contribute to some of the rise in incidence, while recognition of colonic Crohn's disease as distinct from ulcerative colitis may also contribute to some of the incidence shifts between the two forms of IBD. There is now a great opportunity to study the epidemiology of IBD in Saudi Arabia since the country has the economic resources to invest in IBD research, including genetics, environment, and microbiome. At the same time, it may be interesting to follow whether high incidence areas such as Canada show any evidence of stabilization of incidence rates of Crohn's disease or even demonstrate a decrease. Understanding the changing epidemiology of IBD in the Middle East may provide an important clue to the etiology of IBD in general;

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however, we first need to decide whether it is due to removal of protective factors or introduction of new predisposing factors in a genetically susceptible population.

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REFERENCES

1. Molodecky NA, Soon IS, Rabi DM, Ghali WA, Ferris M, Chernoff G, *et al*. Increasing incidence and prevalence of the inflammatory bowel diseases with time, based on systematic review. Gastroenterology 2012;142:46-54 e42; quiz e30.
2. Jostins L, Ripke S, Weersma RK, Duerr RH, McGovern DP, Hui KY, *et al*. Host-microbe interactions have shaped the genetic architecture of inflammatory bowel disease. Nature 2012;491:119-24.
3. Ng SC, Tsoi KK, Kamm MA, Xia B, Wu J, Chan FK, *et al*. Genetics of inflammatory bowel disease in Asia: Systematic review and meta-analysis. Inflamm Bowel Dis 2012;18:1164-76.
4. Prideaux L, Kamm MA, De Cruz PP, Chan FK, Ng SC. Inflammatory bowel disease in Asia: A systematic review. J Gastroenterol Hepatol 2012;27:1266-80.
5. Armitage E, Drummond H, Ghosh S, Ferguson A. Incidence of juvenile-onset Crohn's disease in Scotland. Lancet 1999;353:1496-7.
6. Armitage EL, Aldhous MC, Anderson N, Drummond HE, Riemersma RA, Ghosh S, *et al*. Incidence of juvenile-onset Crohn's disease in Scotland: association with northern latitude and affluence. Gastroenterology 2004;127:1051-7.
7. Almadi MA, Ghosh S, Aljebreen AM. Differentiating intestinal tuberculosis from Crohn's disease: A diagnostic challenge. Am J Gastroenterol 2009;104:1003-12.
8. Al-Ghamdi AS, Al-Mofleh IA, Al-Rashed RS, Al-Amri SM, Aljebreen AM, Isnani AC, *et al*. Epidemiology and outcome of Crohn's disease in a teaching hospital in Riyadh. World J Gastroenterol 2004;10:1341-4.
9. El Mouzan MI, Al Mofarreh MA, Assiri AM, Hamid YH, Al Jebreen AM, Azzam NA. Presenting features of childhood-onset inflammatory bowel disease in the central region of Saudi Arabia. Saudi Med J 2012;33:423-8.
10. Fadda MA, Peedikayil MC, Kagevi I, Kahtani KA, Ben AA, Al HI, *et al*. Inflammatory bowel disease in Saudi Arabia: A hospital-based clinical study of 312 patients. Ann Saudi Med 2012;32:276-82.
11. Al-Mofarreh MA, Al-Mofleh IA. Emerging Inflammatory Bowel Disease in Saudi Outpatients: A Report of 693 Cases. Saudi J Gastroenterol 2013;19:16-22.
12. Al-Qabandi WA, Buhamrah EK, Hamadi KA, Al-Osaimi SA, Al-Ruwayeh AA, Madda J. Inflammatory bowel disease in children, an evolving problem in Kuwait. Saudi J Gastroenterol 2011;17:323-7.
13. Siddique I, Alazmi W, Al-Ali J, Al-Fadli A, Alateeqi N, Memon A, *et al*. Clinical epidemiology of Crohn's disease in Arabs based on the montreal classification. Inflamm Bowel Dis 2012;18:1689-97.