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Inflammatory Bowel Disease

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Inflammatory bowel disease (IBD) is among the most common diseases of gastrointestinal system and includes two chronic relapsing diseases: ulcerative colitis and Crohn's disease. These diseases are the result of dysregulated immune response to the gastrointestinal bacteria in people with genetic background (1). There are clinical and microscopic differences between ulcerative colitis and Crohn's disease in terms of pattern of intestinal involvement and involvement of layers of bowel. Although these differences make the differentiation of the two mentioned diseases possible, there is also gray zone; meanwhile, indeterminate colitis (recently known as IBD of undetermined etiology, IBDU) includes 10-15% of the cases. Ulcerative colitis generally starts in the rectum and spreads continuously to the proximal areas. Inflammation is limited to mucosa and sub- mucosa and diffuse and uniform involvement of the affected area. The characteristic histological finding for this disease is defined as destruction and irregularity of colon crypts. Crohn's disease affects most of the gastrointestinal system from the mouth to the anus. The characteristic for this disease is the existence of skip areas and transmural involvement. Granuloma, fissure ulcer and several lymphoid follicles are evident in histology. There may be three factors leading to ulcerative colitis and Crohn's disease:

- Genetic background,
- Immune response, that is not able to down- regulate the dysregulated immune reaction,
- Changes in response to intestinal bacteria,

Totally, these factors result in persistent inflammation in gastrointestinal system. Other environmental factors including smoking (especially in Crohn's disease) and nutrition play an important role in this regard. The genetic background is considered as an effective factor in responses of the host to the invading bacteria. Autophagy genes, nucleotide oligomerization domain 2, NOD2 (now called CARD15) and interleukin-23-type 17 helper T cell (Th17) pathways are among the main discussed genetic factors (1, 2). CARD15 is a polymorphic gene playing an important role in both innate immune system and progression of the disease (2). In addition, familial cases highlight the role of genetic factor particularly in Crohn's disease. However, environmental factors and genetics are effective in both incidence of the disease and characteristics of the disease. Some of genetic factors such as CARD15 and ATG16L1 are Crohn's disease specific factors; whereas, some others like 1L23 signaling pathway are common in both diseases. It is estimated that the known genetic factors comprise only 20% of the involved genetic factors (1). Diagnosis of inflammatory bowel diseases is based on the histological, colonoscopic and clinical findings. One of the most important issues in IBD is list of differential diagnoses which is vitally important either in terms of clinical approach or histological approach. Developing a good relation between clinical physician, radiologist, colonoscopic and pathologic findings may lead to a proper diagnosis in most cases. However, a full list of differential diagnoses should be considered including: Gastrointestinal infections, functional diarrhea, irritable bowel syndrome, Behcet's disease, ischemia, AIDS, NSAID use, diverticulitis, Celiac disease, malignancy, tuberculosis and eosinophilic gastroenteritis. One of the main points about diagnosis of IBD (especially in crohn's disease) in some parts of the world like Middle East region is considering tuberculosis as a differential diagnosis. PPD test, interferon- gamma based tests and PCR based molecular tests are among the associated diagnostic studies. Laboratory tests have an important role in diagnosis of IBD; however, there are no specific tests in this regard. Some tests such as CBC (assessment of anemia), Vitamin B12 level (especially in terminal ileum involvement), and folate level (especially in treatment by sulfasalazine) are

Implication for health policy/practice/research/medical education:
Razavi Hospital will host one of the greatest international inflammatory bowel diseases (IBDs) congresses in the days ahead. In this editorial as an introduction to the events we have a brief look toward the IBD and current concerns.

used in management of these patients. Nowadays, one of the tests being discussed is measurement of fecal calprotectin as bowel inflammation index. Combined test of pANCA and ASCA are being used for differentiating these two diseases but there is no general agreement on it. Perideaux et al. have conducted a comprehensive study about serologic factors of pANCA, ASCA, Anti-OmpC, anti-CBir1, anti-12, ALCA, ACCA, AMCA, anti-L and anti-C (3). One of the important applications of serologic factors is in diagnosis of indeterminate colitis. Another factor in examination of IBD patients is considering CMV infection especially in patients with steroid-resistance. Histological evaluation of biopsy samples is very helpful in terms of CMV cytopathic changes. These patients should be evaluated serologically for amebiasis, clostridium difficile toxin in stool and other bacteria. Malignancy is among the known complications of ulcerative colitis (and also crohn's disease); therefore, surveillance performance, using the existing guidelines, is essential. Dysplasia has priority to carcinoma and its macroscopic (flat or elevated) and microscopic criteria are totally known. In all the patients work up evaluation should be considered. There is a great understanding on “no dysplasia” and “high grade dysplasia” among pathologists, but no agreement on “low grade dysplasia” and “indefinite for dysplasia”; so more revision is needed about these two terms. Immunohistochemistry for p53, bcl-2 and Racemase was hopeful at first but their functional value has not been proved yet. Therefore, morphological findings and pathologist experience are still the main factors in diagnosing of dysplasia. Treatment of these diseases includes drug treatment (anti-inflammatory and immunosuppressive drugs) and in some cases surgery is needed. Nowadays, given the regenerative and immunoregulatory role of stem cells, new opportunities have been created in IBD treatment (4).

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