THE PREVALENCE OF HLA-B27 IN INFLAMMATORY BOWEL DISEASE PATIENTS IN JORDAN

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ABSTRACT

Objective: To find out the prevalence of Human Leucocyte Antigen B27 (HLA-B27) in inflammatory bowel disease patients in Jordan.

Methods: Over the last year (2005) all inflammatory bowel disease (IBD) patients attending the gastroenterology outpatient clinic at King Hussein Medical Center(KHMC), were given a questionnaire asking them to report back pain and the characteristics of this pain. The first 60 patients to complain of inflammatory-type back pain (according to the European Spondyloarthropathy Study Group Criteria); underwent a blood test to check for the presence of HLA-B27 in their blood. At the same time a comparable number of patients not suffering from IBD or any rheumatological disease, were checked for the presence of HLA-B27.

Results: Only five patients of the IBD group (4 females and 1 male) showed HLA-B27 positivity. Three patients had ulcerative colitis (UC) and 2 patients had Crohn's disease (CD). Three of the patients in IBD group had active disease and were on steroids the other two were in remission and were on aminosalicylic acid (5-ASA) only. Three patients of the controlled group (all females) showed HLA-B2 positivity. Two of the patients in the IBD group were of European origin.

Conclusion: It is concluded that HLA-B27 is no more common in IBD patients than in the general population of Jordan.

KEY WORDS: Inflammatory bowel disease, Ulcerative Colitis, Crohn's Disease, HLA-B27.

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INTRODUCTION

Inflammatory bowel disease (IBD) is a chronic inflammatory disorder of unknown origin involving gastrointestinal tract.[1] Inflammatory bowel disease is divided into 2 major disease entities, ulcerative colitis (UC) and Crohn's disease (CD). UC has prevalence twice that of CD.[2] IBD is complicated by many local and systemic disorders. Among the extraintestinal complications of IBD arthritic manifestations were the most common.[3,4] Arithritis associated with IBD may be divided into three clinical categories; peripheral arithritis, spondylitis and sacroiliitis.[5] The type of sacroiliitis seen in IBD is of the seronegative arthritis group. It is thought that in ankylosing spondylitis, the passage of gram-negative microorganisms via the intestinal wall leads to stimulation of antigen factor formation in HLA-B27.[6,7] Spondyloarthropathies can progress to ankylosing spondylitis. Many subclinical IBD diagnoses are made during ileocolonoscopic examination of cases with ankylosing spondylitis.[8]

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PATIENTS AND METHODS

During 2005, all IBD patients (whether it be UC, CD or indeterminate colitis) attending the gastrointestinal clinic at KHMC or admitted as inpatients at KHMC, were given a questionnaire asking them about joint symptoms in particular inflammatory –type back pain with at least 4 of the following 5 components:

1. At least 3 months in duration
2. Onset before 45 years of age
3. Insidious (gradual) onset
4. Improved with exercise
5. Associated with morning spinal stiffness.

These are the criteria of the European Spondyloarthropathy Study Group (ESSG).[9] They were given the questionnaire on first visit which were collected on the second visit when any queries were also answered. The first sixty patients (48 females (70%), 12 males (30%)) who reported to have experienced inflammatory-type back pain had their blood checked for HLA-B27. At the same time a control group of 60 patients (40 females (67%), 20 males (33.3%)) who were attending the gastroenterology clinic for reasons other than IBD and did not have any rheumatological disease also had their blood checked for HLA-B27. Patients who are known to be HLA-B27 positive were excluded from the study. The diagnosis of IBD was based on endoscopic findings and histology report. Patients who were diagnosed clinically were excluded from the study. For comparison of qualitative parameters, chi-square analysis was used, with $p<0.05$ being accepted as significant.

RESULTS

The age range and the type of the IBD in the study group is shown in Table-I .The duration of the bowel symptoms ranged from 2 months to 15 years (mean 4.32 years). Age ranged from 15 years to 75 years (mean 37.14 years) (Table-I).

Only five patients (4 females and 1 male) (8.3%) of the IBD group and three patients (all females)(5.0 %) of the control group showed HLA-B27 positivity. The result was insignificant ($p>0.05$). Three of the patients in the IBD group (2 had CD and 1 had UC) were on steroids for active disease; the other two were in remission and were only on 5-ASA. Two of the females of the IBD group were of European origin; the others were of Arab origin. Three of the patients of the IBD group had UC and the other two had CD. One of the females in the control group was followed up for achalasia, the other two were followed up for irritable bowel syndrome. Both had ileocolonscopies and were reported as normal. Table-II

DISCUSSION

IBD predominantly affects the gastrointestinal system but is associated with a large number of extraintestinal manifestations (EIMs).[10] Many investigators have characterized the articular manifestations of IBD since Bargen first described them in 1929.Some disorders compare the activity of the bowel disease but for a number of these conditions, their courses run independently of the intestinal disease.[11,12] Furthermore, there has been some variance in the literature as to whether these EIMs are more associated with CD or UC.[13] Most series of patients with IBD have estimated the frequency of joint involvement to be 4-26% in UC and 2-16% in CD.[1] Several reports suggested the articular complications of UC and CD were similar, but more common in patients with CD.[1]

EIMs contribute significantly to morbidity and mortality. Defining specific associations of immune mediated diseases in extraintestinal

Table-I: Age range and type of colitis in the study population.

Age range/ years	*Ulcerative Colitis*	*Crohn's disease*	*Indeterminate colitis*
15—25	11	7	2
26—35	10	5	1
36—45	7	2	0
46—55	6	0	1
56—65	5	0	0
66—75	2	0	1
Total	41	14	5

Table-II: HLA-B27 positivity in the study population.

Age range/ years	*Ulcerative Colitis*	*Crohn's disease*	*Indeterminate colitis*	*HLA-B27 positive*
15—25	11	7	2	2 (1UC,1CD)
26—35	10	5	1	1 (1UC,1CD)
36—45	7	2	0	1 (1UC)
46—55	6	0	1	0
56—65	5	0	0	1
66—75	2	0	1	0
Total	41	14	5	5

sites and IBD may be helpful in the better understanding of the pathogenesis of IBD.[13] The pathogenesis of EIMs is also multifactorial. The role of genetic factors is supported by family and candidate (e.g. certain HLA) gene studies.[14,15] The role of humoral immunity is supported by the higher prevalence of autoantibodies in the presence of EIMs, especially pANCA in primary sclerosing cholangitis (PSC). The immunological and clinical connections between these diseases and IBD have never been fully elucidated.

In IBD, sacroiliitis is the most important extraintestinal manifestation.[2,5] Studies have shown that spondylitis is clinically and radiologically indistinguishable from idiopathic ankylosing spondylitis, occurs in 3-6% of patients with IBD.[1] HLA B27 positivity occurs in 53-73% of cases, fewer than in idiopathic ankylosing spondylitis.[16] IBD is frequently associated with the clinical features of spondylitis, which are similar to those of idiopathic ankylosing spondylitis.[16] The initial symptoms are insidious like lower back pain and morning stiffness. These symptoms decrease with exercise and are aggravated by bed rest. Deker-Saeys et al. have shown that in IBD, the incidence of sacroiliitis is about 10%,[17] while Mielants et al. found it to be about 5-12%.[18] Gravallese et al. have shown that asymptomatic sacroiliitis can be diagnosed with bone scanning and that its incidence in IBD is about 52%.[5]

This study has shown that majority of the IBD patients are young adults with UC, and that the prevalence of HLA B27 in Jordanian IBD patients is 8.3% with no significant difference between UC and CD patients. Investigators in Poland have found an HLA B27 prevalence of 28% among UC patients.[19] This is significantly higher than this group of patients but the number of their patients was only 18 and they all had UC. This low prevalence of HLA B27 in Jordanian patients could probably have been further lower if all the patients were of Arab origin, as two of our patients who tested positive for HLA B27 were of European origin, and studies have shown that HLA B27 is more prevalent in Europeans.[20]

Through MEDLINE search we could not find any studies investigating this topic in neighboring countries except for one study from Turkey where investigators have found out a prevalence of 9.67% of HLA B27 positivity in IBD patients, which is higher than in our patients and is statistically insignificant.[21]

Investigators from Korea[1] have reported that HLA B27 positivity and sacroiliitis is associated more in patients with colonic involvement in CD and more in ulcerative colitis patients who have pancolitis. However this was not assessed in this study.

In conclusion that HLA B27 is not more common in patients with IBD than in the general population of Jordan. However, more studies with larger number of patients looking at more variables are needed to investigate this relationship.

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