Free Paper Session

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Title: Frequency of Irritable Bowel Syndrome and Its Associated Gut Lesions in Patients with Ankylosing Spondylitis

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Background..

- Ankylosing spondylitis (AS), might carry a high risk of gut lesions due to abnormal gut microbiota &/or inflammatory reaction [1]
- In spondylarthropathies (SpA), inflammatory gut lesions are present in about 60% patients & that some of these lesions may progress to inflammatory bowel disease (IBD) [2]
- Macroscopic inflammatory lesions in AS patients
  - ✓ 14% in Bangladesh (short colonoscopies) [3]
  - ✓ 37% in Korea (full colonoscopies) [4]

Background.

- In another study of Bangladesh in AS & in controls [5]
  - ✓ Macroscopic gut lesions - 56 to 66.7%, primarily mild
  - ✓ Microscopic gut lesions –
    - ✓85% in ascending colon
    - ✓73.3% in sigmoid &
    - ✓83.3% in rectum
  - ✓ Significant difference found in macroscopic (38.5 vs 5%, P<0.01) & microscopic (76.8 vs 45%, P=0.009) lesions in terminal ileum

Background

- Conversely, Irritable bowel syndrome (IBS)
  - ✓ An increased association with chronic inflammatory arthritis like RA, AS & SLE [6,7]
- Abdominal pain and/or diarrhea were found to be prevalent in AS patients as well [8]
- A recent study has shown that 25% patients with axial SpA reported IBS symptoms meeting Rome III criteria [9]
- Moreover, a recent meta-analysis of 13 studies reported up to 40% IBD patients having IBS-type symptoms [10]

Objectives

- To determine the prevalence of IBS in AS patients
- To evaluate the macroscopic and microscopic gut lesions in AS patients

Methods

- This observational study was carried out in the Departments of Rheumatology, Gastroenterology and Pathology, of BSMMU and Modern One Stop Arthritis Care & Research Center® in Dhaka from 1st July 2016 to 30th Jun 2017
- Consecutive 60 AS patients were enrolled following purposive sampling method
- Inclusion criteria;
  - ✓ Fulfilling the revised New York criterion (1984) [11]
  - ✓ No history of acute diarrhea and dysentery within 1 month before enrolment
  - ✓ Not taking DMARDs for more than 3 weeks
  - ✓ No contraindication of colonoscopy

Patient Evaluation

- All AS patients were
  - evaluated for IBS according to Rome III criteria
  - assessed for disease activity (ASAS core set): [12]
    - ✓ BASDAI for disease activity
    - ✓ BASFI for physical function
    - ✓ Pain- VAS in the past week
    - ✓ BASMI for spinal mobility
    - ✓ Peripheral 44 swollen joints count &
    - ✓ The Maastricht enthesitis score (MASES)
- Laboratory: CBC, ESR, CRP, HLA-B27
- X-ray of lumbosacral spine (A/P & lateral view) for diagnosis of AS
- X-ray of SI joints oblique view for current status of radiological disease

The Colonoscopy & Histology

- Two biopsy specimens were taken from terminal ileum, ascending colon, sigmoid colon & rectum irrespective of the presence or absence of macroscopically evident lesions
- If available, another 2 specimens were taken from macroscopically evident lesions
- Macroscopic lesions were grade as follows:
  - ✓ Grade 0—normal
  - ✓ Grade I— redness and edema of mucosa
  - ✓ Grade 2— small ulceration of mucosa
  - ✓ Grade 3—mucosal edema, ulcerations, and hemorrhage [9]
- Histological features were graded from 0–3 in the specimens following the Cuvelier et al. grading [13]

Data Analysis & Ethics

- Descriptive statistics was used to calculate the prevalence
- Associations between categorical variables were analyzed by Chi-square test (v2) test & Fisher's exact
- Mann-Whitney U test was used to assess association between quantitative variables
- The p value< 0.05 implies statistical significance

➢ Ethics

  – The study was approved by the Ethical Committee of BSMMU, Shahbagh, Dhaka, Bangladesh

Results

- A total of 65 subjects with AS were invited to participate (4 female & 1 male were refused, leaving 60 patient)
- The mean age of the AS patients was 30.4±9.6 years & male to female ratio was 3:1 (45/15)
- Among 60 AS patients,
  - ✓ 37 (61.6%) were married
  - ✓ 14 (23.3%) were service holder
  - ✓ 44 (73.3%) having family history of low back pain
  - ✓ 43 (71.7%) having insidious onset of low back pain
- The prevalence of IBS was 23.3% (14/60), male to female ratio was 2.5:1 (10/4)

Results (Cont.)

Table 1: Comparison of demographics & HLA B-27 status between IBS present & IBS absent groups (N=60)

Characters		IBS		p-value
		Yes (n = 14)	No (n = 46)	
Age		32.00±8.50	29.96±9.90	0.489
Gender	Male	10 (22.2)	35 (77.8)	0.734*
	Female	4 (26.7)	11 (73.3)	
Marital Status	Married	12 (32.4)	25 (67.6)	0.058*
	Unmarried	2 (8.7)	21 (91.3)	
Education	Undergraduate	8 (21.1)	30 (78.9)	0.807
	Postgraduate	5 (23.8)	16 (76.2)	
Occupation	Housewife	5 (41.7)	7 (58.3)	0.087
	Business	0 (0.0)	6 (100.0)	
	Service	5 (35.7)	9 (64.3)	
	Others	4 (14.3)	24 (85.7)	
Duration of low back pain (Months)		30.14±18.136	61.64±68.571	0.480**
HLAB27+ve	Yes	3 (15.0)	17 (85.0)	0.072
	No	2 (11.8)	15 (88.2)	
	Not done	9 (39.1)	14 (60.9)	

Results (Cont.)

Table 2: Comparison of clinical data between IBS present & IBS absent groups (N=60)

Characters	IBS		p-value
	Yes (n = 14)	No (n = 46)	
VAS	47.14±19.78	44.57±16.96	0.756**
BASFI	3.47±1.82	3.16±1.60	0.847**
BASMI	1.00±0.88	1.41±1.68	0.805**
BASDAI	4.64 ±1.82	3.54 ±1.75	0.046
Total swollen joint	0.43±0.85	0.89±2.28	0.765**
Total tender joint	1.86±3.09	2.83±5.30	0.956**
Maastricht Enthesitis score	1.64±2.41	1.87±2.97	0.557

Results (Cont.)

Table 3: Comparison of macroscopic & microscopic lesion in terminal ileum between IBS present & absent group (N=56)

	IBS present (n=13)	IBS absent (n=43)	P-value
Macroscopic Grade	Number (%)	Number (%)	
G-0	7 (53.8)	28 (65.1)	0.52
G-1	1 (7.7)	4 (9.3)	1*
G-2	5 (38.5)	11 (25.6)	0.48
G-3	0 (0)	0 (0)	-
Microscopic Grade			
G-0	3 (23.1)	10 (23.3)	1
G-1	8 (61.5)	25 (58.1)	1
G-2	1 (7.7)	5 (11.6)	1
G-3	1 (7.7)	3 (7)	1*

Results (Cont.)

Table 4: Comparison of macroscopic & microscopic lesion in colon between IBS present & absent group (N=60)

Ascending colon	IBS present (n=14)	IBS absent (n=46)	P-value
Macroscopic Grade	Number (%)	Number (%)	
G-0	11 (78.6)	45 (97.8)	0.03
G-1	0 (0)	0 (0)	-
G-2	3 (21.4)	1 (2.2)	0.03*
G-3	0 (0)	0 (0)	-
Microscopic Grade			
G-0	3 (21.4)	6 (13)	0.42
G-1	8 (57.1)	32 (69.6)	0.51
G-2	1 (7.1)	8 (17.4)	0.67
G-3	2 (14.3)	0 (0)	0.05*

Limitations & Strengths of the Study

- Limitations
  - This study was conducted in a tertiary health care hospital
  - Fecal calprotectin was not done

- Strengths
  - This was the first study
  - Large number of AS patients &
  - Evaluation of gut lesions were done with full colonoscopy

Conclusions

- Prevalence of IBS is higher in AS patients
- IBS patients may have higher AS disease activity
- Macroscopic lesions are more frequent in IBS patients

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Thank You