Prevalence of Fibromyalgia in Patients with Ankylosing Spondylitis

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Abstract

Ankylosing spondylitis (AS) is defined as a chronic inflammatory disorder which influences the axial skeletal system, resulting in pain and functional disabilities. Fibromyalgia (FM) is one of the main causes of generalized pain and can coexist with other disorders. Few researchers have found association between FM and AS. The present study obtained data regarding the prevalence of FM in patients with AS.

Methods: A total of 40 (30 male and 10 female) patients with AS, diagnosed according to the modified New York criteria, were studied. Two stage classification process was applied to determine the presence of FMS in AS patients: Stage 1: diffuse wide spread pain questionnaire to a sample of 40 (30 male and 10 female) patients with AS. Stage 2: all patients with wide spread pain were examined for 18 tender points. A sample of 40 (30 male and 10 female) healthy individuals were examined as controls.

Results: 10 patients met the criteria of FMS, with a prevalence of 25.0% among patients with AS, of whom 80.0% were women.

Conclusions: FMS is more prevalent in patients with AS than in the general population, and the prevalence is comparable with other musculoskeletal disorders. There is a trend for an increased frequency of FMS in females with AS. AS patients with FMS may benefit from psychological evaluation as a part of their treatment. Further study is needed to correlate between FMS and AS disease activity of patients.

Key words: Fibromyalgia, Ankylosing Spondylitis, spondyloarthropathy

Introduction

Ankylosing spondylitis (AS) is defined as a chronic inflammatory disease which influences greatly the skeletal system, mainly the spine and in some cases peripheral joints and can cause stiffness and progressive functional limitations of the axial skeletal system and extra articular clinical features

[1, 2]. AS is most common in young adults, of 2-40 years age of onset and is more common in Caucasians and human leukocyte antigen (HLA)-B27-positive individuals and the male sex [1, 2,3]. AS is one of the spondyloarthropathy complexes, which is greatly associated with HLA-B27, whose presence ranges from 80-98% of the cases respectively [4].The presenting clinical manifestation involves inflammatory low back pain correlated with morning stiffness [1,2]. AS of spine causes vertebral fusion, osteoporosis, ligament ossifications causing a weakened and remodeled vertebral column, with a powerful tendency toward deformation and fractures [1, 5]. AS is one of the enthesopathy of spondyloarthropathies and is characterized by inflammation at the tendon and/or ligament insertions on bones and influences commonly the calcaneal tendon insertion and plantar fascia [1]. New York modified criteria, with clinical and radiographic manifestation, are used to confirm AS diagnosis. The coexistence of both clinical and radiographic features is mandatory to attain AS diagnosis [6]. Garret et al. established a questionnaire for AS activity evaluation [7].

One of the most prevalent causes of generalized musculoskeletal pain is Fibromyalgia (FM). It is of unknown etiology, but its origin is of an inflammatory process. It is regarded to be a pain amplification syndrome, related to sensitization mechanism of the central nervous system [13,14]. It is more common in females and most cases are between age of 35-50 years. The clinical examination typically does not include synovitis and/or other symptoms pointing to inflammatory disease; the main feature is the presence of tender points found on palpation [14,15]. FM can associate with other rheumatologic disorders, like psoriatic arthritis, systemic lupus erythematosus, rheumatoid arthritis, and Crohn's disease [13, 16-17]. Essentially, the diagnosis is mainly on the clinical background and is based on the detection of tender points and the absence of symptoms or laboratory findings that can point to a degenerative or inflammatory disorder. Normal results of muscle enzymes, inflammatory activity tests and electromyography are common findings [13, 15]. The criteria of the American College of Rheumatology (ACR) are used in research [14]. There have been some researchers who revealed an association between FM and AS [18]. The present study aimed at identifying FM prevalence in patients with AS.

Patients and Methods

A cross-sectional study was carried out at the department of Rheumatology and Rheumatic outpatients in Basra Teaching Hospital from October 2016 till July 2018. A sample of 40 (30 males and 10 females) patients with AS, diagnosed according to the modified New York criteria, were included in the study. Patients who presented another concomitant rheumatologic disease that could justify the presence of chronic generalized pain were excluded from the study. The patients answered a questionnaire that included the following information: Age, sex, disease duration and drug history. Diagnosis of FM was confirmed according to the two stage classification process that was proposed by the 1990 ACR classification criteria for FM. Stage 1: composed of diffuse pain questionnaire. Stage 2: evaluation of all patients and controls complaining of diffuse pain; evaluation included the assessment of 18 tender points and 4 control non-tender points by digital palpation with an approximate force of 4 kg (the amount of pressure required to blanch the nail.

The four control non-tender points are; the middle of forehead, the volar aspect of mid forearm, the thumb nail and the muscles of anterior thigh. To meet the diagnostic criteria, musculoskeletal pain must have been present for at least 3 months, and pain present in 11 or more out of 18 specific tender points on digital palpation. A randomly selected sample of 40 (30 males and 10 females) healthy individuals matched for age and sex were questioned as a control group. All patients and controls were asked about FMS associated symptoms which are, fatigue, morning stiffness, sleep disturbance, headache, anxiety, and irritable bowel.

Results

The demographic distributions of both AS patients and control group are shown in Table 1. From the total sample; 30 (75.0%) were males and 10 (25.0%) were females. There were 34 (85.0%) patients of the AS group with widespread pain compared with 3 (7.5%) individuals with widespread pain in the control group which is a statistically significant difference with p value of 0.0001.

Only 10 (25.0%) (8 females and 2 males) patients fulfilled the 1990 ACR criteria for classification of FMS in the patients group, compared to 1 (2.5%) in the control group which is also statistically highly significant with p value of 0.003. FMS affects older more than younger AS age group patients as shown in Table 2.

Mean age and mean disease duration were 43.6 (SD=7.47), and 10.58 (SD=2.36) respectively. FMS associated symptoms appeared more obvious in the patient group when compared with the control group and more obvious in patients with FMS; the difference is statistically highly significant with p value of 0.0001 for all symptoms as shown in Table 3.

Table 1: Demographic distributions of patients and control groups

Characteristics	Patients	Control	P value
Total No.:	40	40	
Men	30 (75.0%)	30(75.0%)	
Women	10 (25.0%)	10(25.0%)	
Widespread pain	34 (85.0%)	3(7.5%)	0.0001
In men	24	2	
In women	10	1	
FMS:	10 (25.0%)	1(2.5%)	0.003
In men	2 (20.0.0%)	0	
In women	8 (80.0%)	1(100%)	
Age (years)	43.6 (SD=7.47)	41.85 (SD=7.33)	
Symptoms duration (years)	10.58 (SD=2.36)		
Drug history	NSAID,SSZ, anti TNF		

Table 2: Distributions of FMS according to the age groups

Age group (years)	No of patients	FMS
22- 45	21	2 patients with FMS
46- 57	19	8 patients with FMS

Table 3: Percentage of FMS associated symptoms in both patients and control groups

FMF associated symptom	AS No (%)	AS/ FMS No %	Controls No. (%)	P value
Headache	12 (30.0%)	10 (100%)	2(5.0%)	0.0001
Anxiety	11 (27.5%)	10 (100%)	1(2.5%)	0.0001
Fatigue	17 (42.5%)	10 (100%)	1(2.5%)	0.0001
Sleep disturbance	18 (45.0%)	10 (100%)	3(7.5%)	0.0001
Irritable bowel	14 (35.0%)	10 (100%)	2(5.0%)	0.0001
Morning stiffness	32 (80.0%)	10 (100%)	1(2.5%)	0.0001

Discussion

In this study widespread pain was found to be more prevalent in the patients group than in the control group in a prevalence rate of 85.0% and 7.5% respectively, whereas the prevalence rate of FMS among patients with AS was found to be 25.0% which is higher when compared to a study done by Amiri AH. [14] showing a prevalence rate of 19.4%. However the prevalence rate of FMS in AS patients in our study was comparable to the prevalence rates of 25% in patients with RA [15], 30% in patients with SLE [16], and it seems to be low when compared to the prevalence rate of FMS in patients with Sjogren syndrome which is 50% [17], and it is considered high when compared to the prevalence rate in the control group and in the general population [18]. In this study females were obviously affected with FMS more than males in the patient group, 80.0% and 20.0% respectively, while the ratio is 3:1 in the general population, so there is a trend for an increased frequency of FMS in females with AS more than that in general population. This result is consistent with Amiri's observation [14]. The present study shows that FMS is more prevalent in the older age group among AS patients, a result similar to that seen in the general population where there is a linear increase in the prevalence of FMS up to the eighth decade [18]. Morning stiffens, sleep disturbance, fatigue, irritable bowel, headache and anxiety were the most common non-musculoskeletal manifestations recorded in AS patients in the study. These FM associated symptoms were highly prevalent in AS patients with FMS and were found to be more when compared with other studies [19, 20].

Conclusion

FMS is more prevalent in patients with AS than in the general population, while it is less prevalent when compared with other musculoskeletal disorders. There is a trend for an increased frequency of FMS in females with AS. AS patients with FMS may benefit from psychological evaluation as a part of their treatment. Further study is needed to correlate between FMS and AS disease activity.

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