Journal of Medicinal and Chemical Sciences

Journal homepage: http://www.jmchemsci.com/

Original Article

Epidemiological and Pharmacal Study of Ankylosing Spondylitis in a Rheumatology Clinic in a Tertiary Health Care Center

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ARTICLE INFO

Article history

Received: 2021-11-21
Received in revised: 2021-12-05
Accepted: 2021-21-11
Manuscript ID: JMCS-2111-1328
Checked for Plagiarism: **Yes**
Language Editor:
Ermia Aghaie
Editor who approved publication:
Dr. Zeinab Arzehgar

DOI:10.26655/JMCHEMSCI.2022.3.9

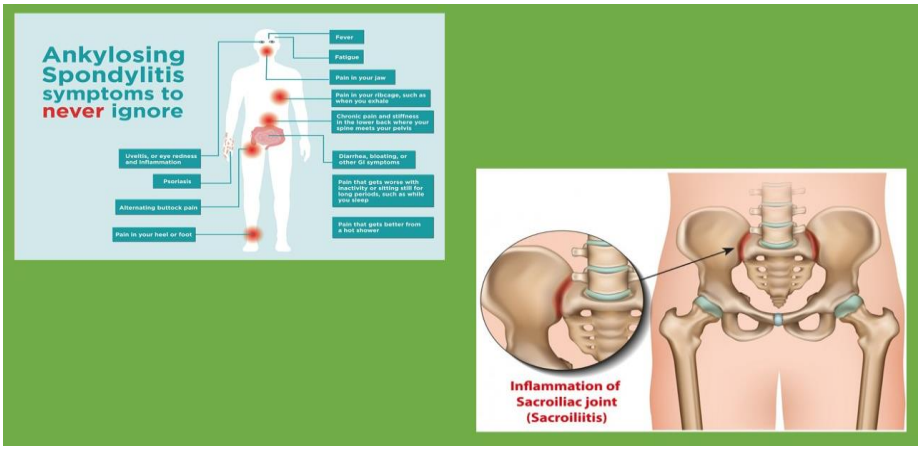
KEYWORDS

Ankylosing Spondylitis
Epidemiology
Iran
Diagnosis Age

ABSTRACT

Determination of epidemiological characteristics in rheumatologic diseases is important to improve the diagnosis and treatment course in patients. This study was performed to determine the epidemiological characteristics in ankylosing spondylitis patients. In this observational cross-sectional study, the epidemiological characteristics were assessed in 219 consecutive patients with ankylosing spondylitis referred to the rheumatology clinic in a tertiary health care center during 2014 to 2018. The mean age was 38.5 years and 76.3% were male. Also, 39.3% had academic literacy. Smoking was seen in 42% and 43.4% had constitutional symptoms. IBD and Uveitis were seen in 7.3% and 15.5%, respectively. Family history and HLA-B27 were positive in 26.5% and 63%, respectively. The mean age of onset was 27.4 ± 9 years. The mean diagnosis age, delay time, and duration were 31.7, 4.3, and 6.9 years, respectively.

GRAPHICAL ABSTRACT



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Introduction

Ankylosing spondilitis (AS) is a chronic inflmmatory disease of unknown etiology in sacroiliac and axial joints; however, it may affect the peripheral sites [1,2]. Also it has some extra-artiluar manifestations such as acute anterior uveitis, cardia conductive disorder, pulmonary upper lobe involvement, neurological disease, and renal amiloidosis [3,4]. AS frequenccy rate is varied across the world with a male/female ratio of 3-5/1 and some differences in cliniacl manifestations across the genders with milder disease and less progression rate in female patients [5]. AS inidence rate is rangng from 7.3 to 8.9 per 100,000 subjects annulay, worldwide (Figure 1 and 2) [6,7].

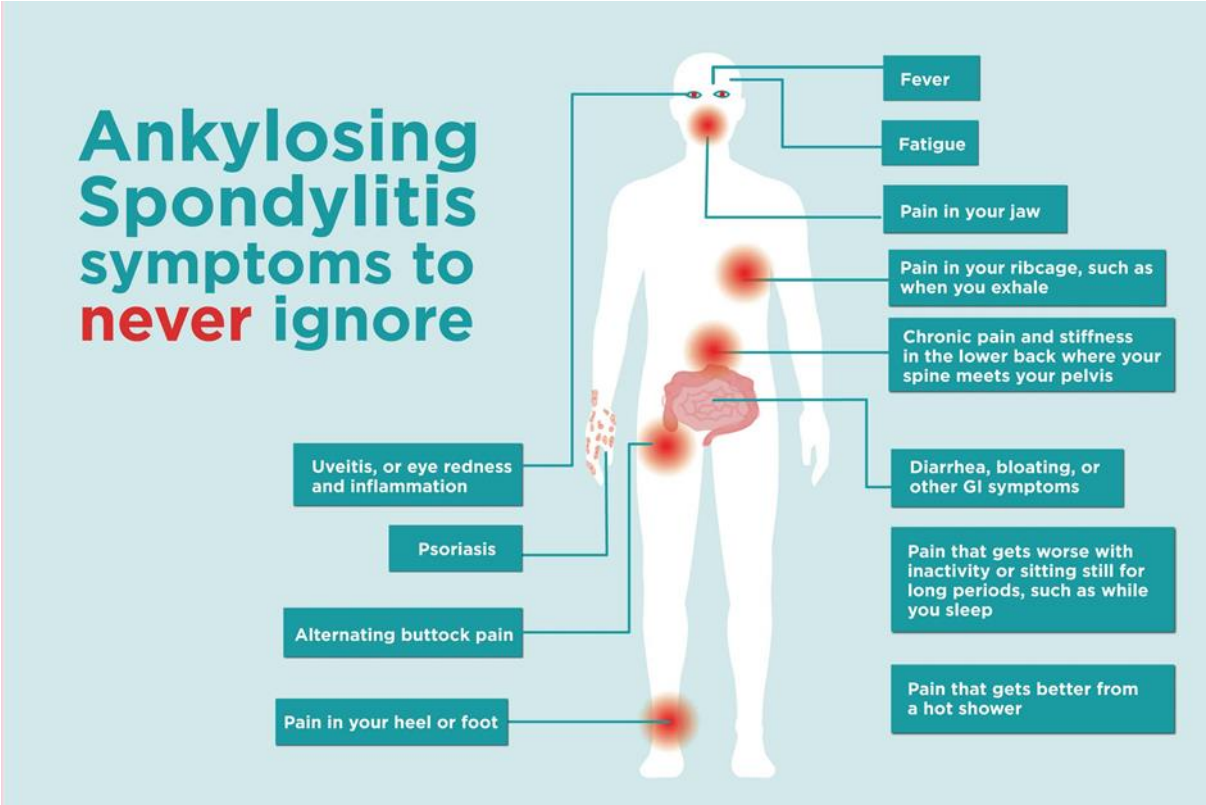

Figure 1: Common Ankylosing Spondylitis Signs and Symptoms

Patients with AS usually have decreased quality of life and some mental problems and prompt diagnosis and treatment of concomittant disorders is crucial to improve the prognosis [8,9]. Recognition of epidemiological pattern in AS patients would help for better programming to reduce the morbidity and mortality [10-21]. This study was performed to determine the epidemiological characteristics in ankylosing spondylitis patients.

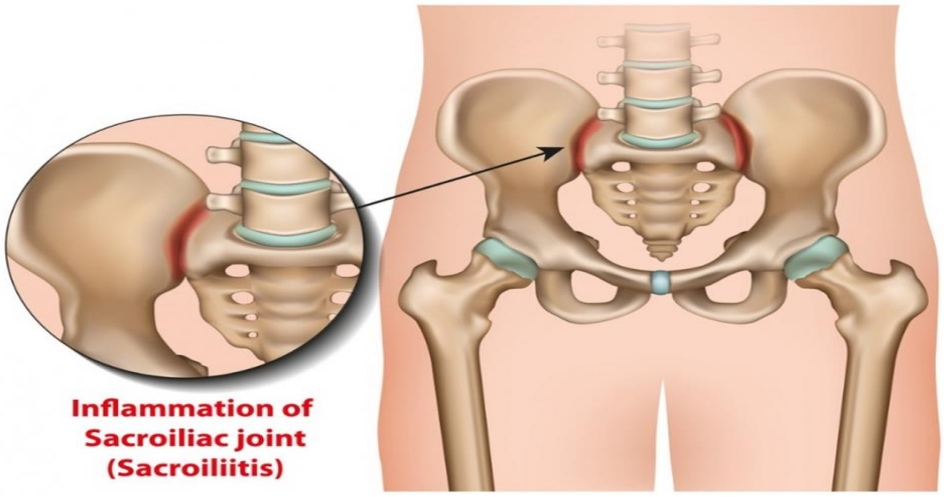

Figure 2: Ankylosing Spondylitis Center

Material and Methods

In this observational cross-sectional study evaluated 219 consecutive patients with ankylosing spondylitis referred to the rheumatology clinic in a tertiary health care center during 2014 to 2018. The inclusion criteria were established AS disease according to ASAS criteria 2009 that is applicable for patients with low back pain under three months and age less than 45 years [2] and presence of valvular heart disease. The exclusion criteria were incomplete data and presence of simultaneous other rheumatologic diseases or overlap syndrome.

The study was approved by local ethical committee. The epidemiological characteristics were assessed in patients with existing medical documents. Also, the contributing factors were determined. Data analysis was done by SPSS version 18.0 software. Independent-Sample-T, Chi-Square, and Exact-Fisher tests were used for the comparisons. The P values less than 0.05 were considered statistically significant.

Results

The mean (standard deviation) age was 38.5 (10.5) years. Among the subjects 52 patients (23.7%) were female. Eighty-six patients (39.3%) had academic educational level. Some other background characteristics are shown in Table 1.

However, 5.5% received no treatments, anti-TNF, NSAID, and other therapeutics were used in 38.4%, 4.6%, and 51.6%, respectively. The time intervals and duration are shown in Table 2.

Table 1: Background characteristics in patients

Variable	Frequency	Percent
Smoking	**92**	**42.0**
Nocturnal pain and stiffness	**95**	**43.4**
Inflammatory bowel disease	**16**	**7.3**
Uveits	**34**	**15.5**
Family history	**58**	**26.5**
HLA-B27	**138**	**63.0**

Table 2: Time Intervals and duration in patients

Variable	Mean	Standard deviation
Onset age	27.4	**9.0**
Diagnosis age	31.7	**9.9**
Delay	4.3	**5.3**
Duration	**6.9**	**6.2**

The mean (standard deviation) delay was 3.4 (5.0) and 4.9 (5.4) years in those with academic versus non-academic educational level showing significant difference (P=0.030). Nocturnal pain and stiffness were more common in NSAID users and less common in anti-TNF users with statistically significant difference (P=0.001). The mean (standard deviation) onset age was 27.1 (9.1) and 27.6 (8.9) years in those with and without nocturnal pain and stiffness, respectively (P > 0.05). Nocturnal pain and stiffness were seen in 64.1% and 28.3% among smokers and non-smokers, respectively with statistically significant difference (P=0.001).

In this study, the epidemiological characteristics in AS patients were assessed. The mean age was 38.5 years and 76.3% were male (Figure 3 and 4). Also, 39.3% had academic literacy. Smoking was seen in 42% and 43.4% had constitutional symptoms. IBD and Uveitis were seen in 7.3% and 15.5%, respectively. Family history and HLA-B27 were positive in 26.5% and 63%, respectively. The mean age of onset was 27.4 ± 9 years. The mean diagnosis age, delay time, and duration were 31.7, 4.3, and 6.9 years, respectively. The main strength point in our study was good sample size and power.

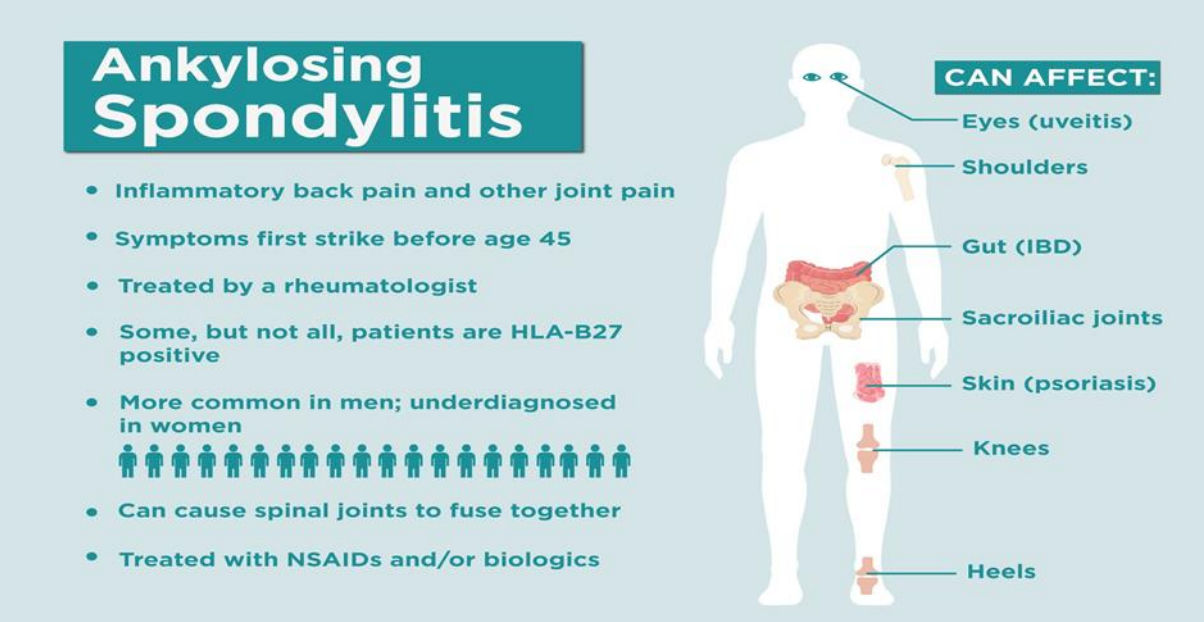

Figure 3: Ankylosing Spondylitis Facts: 17 Things to Know About AS

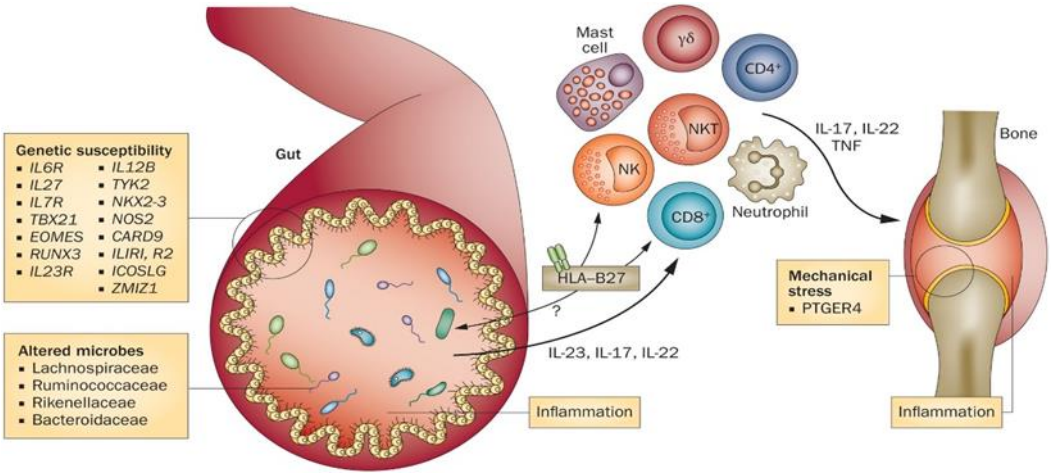

Figure 4: Genetics of ankylosing spondylitis—insights into pathogenesis | Nature Reviews Rheumatology

Soleimani *et al.* [21] assessed 115 AS patients and found that inflammatory neck pain was more common in men versus women. However, in our study, none of the variables were differed across the genders. Review study by Reveille *et al*. [12] revealed that family history and HLA-B27 were the main related factors for AS disease. In our study, the family history was positive in one-fourth and positive HLA-B27 was present in 2/3 of understudy AS cases.

Stolwijk *et al*. [13] reported higher rate of AS in second life decade and among men. The mean age in our study was in fourth life decade and similarly was more common among men. Dean *et al*. [14] reported family history and male gender as important factors in patients. These factors were seen in one-fourth and 3/4 of patients in our study, respectively. As seen in our study, Alamanos *et al*. [15] reported higher prevalence rate in male subjects and those aging from 35 to 44 years. Gran *et al*. [16] reported male/female ratio of 4/1 similar to our study. Also, they showed that HLA-B27 was positive in 6.7 %; however, the related rate was higher in our study. Another study by Gran *et al*. [17] reported decreased quality of life in nearly half of the cases after sixteen years. This matter may be assessed in our population in future studies. Martindale *et al*. [18] reported that mean age in patients was 25 years and 61 % had severe disease that was related to depression and anxiety. (Figure 5).

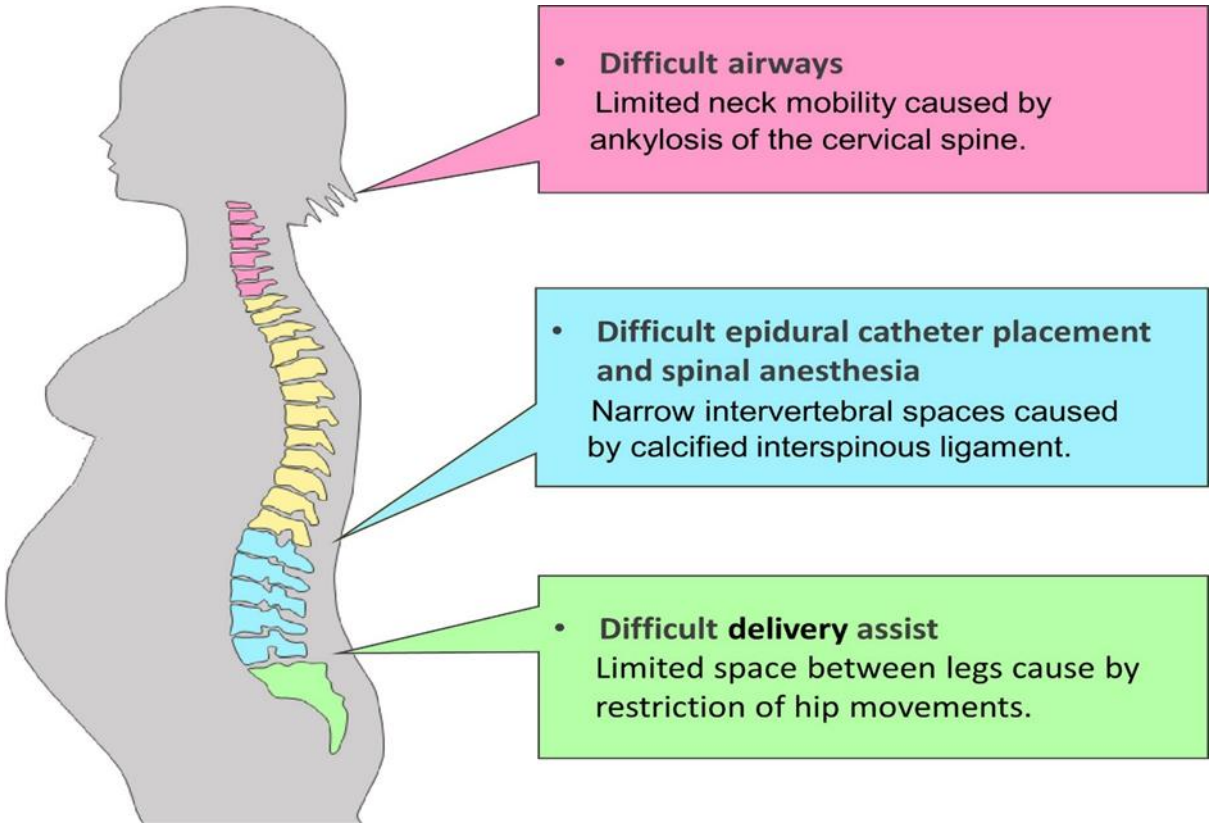

Figure 5: Management of pregnancy complicated by ankylosing spondylitis

The mean age in our study was higher but the severity of diseases was not accessible to be reported. Kolo *et al*. [1^-20] assessed 54 patients that among them 88.9% were male and mean diagnosis age was 30 years and the mean age was 52 years with mean duration of 23 years. The male gender ratio was lower in our study and the mean age was also lower in comparison with their study. The differences between studies may be due to some ethnic and geographic variations. Park *et al*. [21] similarly reported male gender predominance and age between 30 and 39 years.

Conclusions

In our study the mean delay time was related to academic literacy. This revealed the effect of higher educational level on the health literacy and somatic health in patients with chronic diseases. However, we could not assess the severity of AS among patients, the drugs with higher effect on the severity of the disease such as anti-TNF were relate to the symptoms. In our study also smokers had more severe disease that shows the importance of further evaluations among smoker patients.

It may be concluded that epidemiological characteristics among ankylosing spondylitis Iranian patients is relatively similar to other regions worldwide. However further studies with larger sample size and multi-center sampling would help to attain more definite results especially with consideration of the severity of AS disease and therapeutic outcomes as well as quality of life in them.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Authors' contributions

All authors contributed toward data analysis, drafting and revising the paper and agreed to be responsible for all the aspects of this work.

Conflict of Interest

We have no conflicts of interest to disclose.

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HOW TO CITE THIS ARTICLE
Fatemeh Shirani, Suzan Maleki, Zeinab Shafinejad. Epidemiological and Pharmacal Study of Ankylosing Spondylitis in a Rheumatology Clinic in a Tertiary Health Care Center, *J. Med. Chem. Sci.*, 2022, 5(3) 355-360
DOI: 10.26655/JMCHEMSCI.2022.3.9
URL: http://www.jmchemsci.com/article_141691.html