ISSN: 0975-3583,0976-2833 VOL13, ISSUE 08, 2022

Assessment Of Clinical and Laboratory Evaluation of Sicca Complaints in Patients of Sjogen's Syndrome

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Received: 15October 2022 Revised: 25November 2022 Accepted: 10December 2022

ABSTRACT

Background:
To assess clinical and laboratory evaluation of sicca complaints in patients.

Material and Methods:
Fifty- six adult patients (≥18 years old) presenting with complaints of sicca complex, and/or any other symptom and sign suggestive of SS of both genders were recruited in the study. In all, ocular examination was carried out. Ocular surface disease index questionnaire (OSDI), corneal fluorescein staining score (CFS), tear film breakup time (TFBUT) and the Schirmer's test (ST) were measured. Laboratory tests such as detection of the antinuclear antibody (ANA), anti-Ro (SSa) and anti-La (SSb), serum levels of complement factors (C3 and C4) etc. was carried out.

Results: Type was pSS in 24, sSS in 26 and nSS in 6 cases. The difference was significant (P< 0.05). The mean DES was seen in 96.1%, 97.2% and 86.4%, DMS in 97.3%, 90.5% and 83.9% in pSS, sSS and nSS respectively. The mean OSDI questionnaire was 48.2, 46.9 and 45.3, CFS≥3 was seen in 52.3%, 23.6% and 25.2%. Schirmer's test (mm/5 min) was 10.3, 10.1 and 15.4, UWSF (ml/min) was 0.14, 0.15 and 0.23, TFBUT (sec) was 3.4, 4.2 and 4.9, anti-Ro (SSa) (IU/ml) was 123.1, 99.4 and 20.3, anti-La (SSb) (IU/ml) was 52.3, 36.7 and 8.2, ANA was seen among 7.2%, 82.3% and 31.6%, C3 (<0.9 g/l) was 1.24, 1.02 and 1.19 and C4 (<0.1 g/l) was 0.25, 0.25 and 0.27 respectively. A significant difference was observed (P< 0.05).

Conclusion: Diagnosis of SS remains a challenge, as many suspected cases have other diseases or conditions simulating signs and symptoms of SS. This study describes SS and NSS and indicates the importance of laboratory diagnosis, especially SSa.

Keywords: Sjogren's syndrome, autoimmune disease, exocrine glands.

INTRODUCTION

Sjogren's syndrome (SS) is a chronic autoimmune disease characterized by lymphocytic infiltration and subsequent destruction of the exocrine glands, including those found in the

ISSN: 0975-3583,0976-2833 VOL13, ISSUE 08, 2022

nose, ears, skin, vagina, respiratory and gastrointestinal systems.[1] It is among the group of diseases overseen by rheumatologists; however, its diagnosis and management require 3 areas of specialty practice: rheumatology, ophthalmology, and oral medicine.[2]
It is probably the result of an environmental stimulus that promotes an autoimmune reaction in genetically susceptible persons.[3] Infectious agents most commonly sialotropic viruses have been postulated to trigger the syndrome; however, associations with most of the potential viral candidates, including cytomegalovirus and Epstein-Barr virus, are weak.[4] The putative role of different viruses in SS can be viewed in the light that salivary glands are a site of latent viral infections. To measure symptoms intensity and systemic activity in pSS patients, the EULAR developed tools that are suitable for grading disease severity and treatment response.[5] The EULAR SS Patient-Reported Index (ESSPRI) assesses the level of dryness, pain and fatigue complaints, and the EULAR SS Disease Activity Index (ESSDAI) assesses activity across multiples clinical and biological domains.[6,7] Considering this, we conducted present study to assess clinical and laboratory evaluation of sicca complaints in patients.

MATERIAL &METHODS

A sum total of fifty- six adult patients (≥18 years old) presenting with complaints of sicca complex, and/or any other symptom and sign suggestive of SS of both genders were recruited in the study. All selected patients agreed to participate in the study.
Demographic data such as name, age, gender etc. was recorded. In all, ocular examination was carried out. Ocular surface disease index questionnaire (OSDI), corneal fluorescein staining score (CFS), tear film breakup time (TFBUT) and the Schirmer's test (ST) were measured. Laboratory tests such as detection of the antinuclear antibody (ANA), anti-Ro (SSa) and anti-La (SSb), serum levels of complement factors (C3 and C4) etc. was carried out. Disease activity was defined as "moderate" if ESSDAI≥5 or "severe" if ESSDAI>15. The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

RESULTS

Table I Patients distribution

Type	Number	P value
pSS	24	0.17
sSS	26	
nSS	6	

Type was pSS in 24, sSS in 26 and nSS in 6 cases. The difference was significant (P< 0.05) (Table I).

Table II Comparison of clinical, and laboratory characteristics of patients

Parameters	pSS	sSS	nSS	P value
DES	96.1%	97.2%	86.4%	0.91
DMS	97.3%	90.5%	83.9%	0.87
OSDI questionnaire	48.2	46.9	45.3	0.90
CFS≥3	52.3%	23.6%	25.2%	0.04
Schirmer's test (mm/5 min)	10.3	10.1	15.4	

ISSN: 0975-3583,0976-2833 VOL13, ISSUE 08, 2022

UWSF (ml/min)	0.14	0.15	0.23	0.05
TFBUT (sec)	3.4	4.2	4.9	0.11
Anti-Ro (SSa) (IU/ml)	123.1	99.4	20.3	0.01
Anti-La (SSb) (IU/ml)	52.3	36.7	8.2	0.01
ANA	67.2%	82.3%	31.6%	0.02
C3 (<0.9 g/l)	1.24	1.02	1.19	0.04
C4 (<0.1 g/l)	0.25	0.25	0.27	0.82

The mean DES was seen in 96.1%, 97.2% and 86.4%, DMS in 97.3%, 90.5% and 83.9% in pSS, sSS and nSS respectively. The mean OSDI questionnaire was 48.2, 46.9 and 45.3, CFS≥3 was seen in 52.3%, 23.6% and 25.2%. Schirmer's test (mm/5 min) was 10.3, 10.1 and 15.4, UWSF (ml/min) was 0.14, 0.15 and 0.23, TFBUT (sec) was 3.4, 4.2 and 4.9, anti-Ro (SSa) (IU/ml) was 123.1, 99.4 and 20.3, anti-La (SSb) (IU/ml) was 52.3, 36.7 and 8.2, ANA was seen among 7.2%, 82.3% and 31.6%, C3 (<0.9 g/l) was 1.24, 1.02 and 1.19 and C4 (<0.1 g/l) was 0.25, 0.25 and 0.27 respectively. A significant difference was observed (P< 0.05) (Table II).

DISCUSSION

A genetic predisposition to SS has been suggested because of multiple reports of two or more members of the same family developing the syndrome. Affected individuals of different ethnic origins carry different human leucocyte antigen susceptibilities.[8] The high percentage of females with SS compared to males suggests that the immune regulatory properties of sex hormones are involved in its development. Androgen deficiency, both locally and systemically, has also been pointed out to be a key factor prompting SS.[9] Reduced plasmatic levels (up to 40 - 50%) of dehydroepiandrosterone sulfate, the precursor sex steroid hormone produced in the adrenal cortex, has been identified in SS-affected individuals. The dry mouth is often manifest as the 'cream cracker' sign an inability to swallow dry dental caries is a common feature that may prompt a referral from a dentist.[10] About half of the patients complain of recurrent parotid swelling, particularly relatively young patients in whom the inflammatory phase predominates. Diminished tear production due to lacrimal gland involvement leads to the destruction of both corneal and bulbar conjunctival epithelium and a constellation of clinical findings termed keratoconjunctivitis sicca (KCS). Symptoms of dry eye may include sensations of itching, grittiness, or soreness, even though the eyes' appearance is normal.[11,12] Ocular complaints may include photosensitivity, erythema, eye fatigue, decreased visual acuity, a discharge in the eyes, and the sensation of a film across the visual field.[13,14]Considering this, we conducted present study to assess clinical and laboratory evaluation of sicca complaints in patients.

Our results showed that Type was pSS in 24, sSS in 26 and nSS in 6 cases. Oliveira et al[15] in their study a total of 676 individuals were screened and 510 (75.4%) completed the assessments; 198 patients were classified as pSS, 149 as sSS, and 163 as NSS. Symptoms and glandular dysfunction tests were similar in the groups. Concerning pSS, extraglandular manifestations were present in 59% of patients; the elderly had more dry symptoms and peripheral neurological disorders; and 2.5% developed non-Hodgkin lymphoma. In sSS, each overlap promoted distinct clinical and laboratory variants. Several alternative diagnoses were identifed as a cause of sicca complex in NSS group.

We observed that the mean DES was seen in 96.1%, 97.2% and 86.4%, DMS in 97.3%, 90.5% and 83.9% in pSS, sSS and nSS respectively. The mean OSDI questionnaire was 48.2,

ISSN: 0975-3583,0976-2833 VOL13, ISSUE 08, 2022

46.9 and 45.3, CFS≥3 was seen in 52.3%, 23.6% and 25.2%. Schirmer's test (mm/5 min) was 10.3, 10.1 and 15.4, UWSF (ml/min) was 0.14, 0.15 and 0.23, TFBUT (sec) was 3.4, 4.2 and 4.9, anti-Ro (SSa) (IU/ml) was 123.1, 99.4 and 20.3, anti-La (SSb) (IU/ml) was 52.3, 36.7 and 8.2, ANA was seen among 7.2%, 82.3% and 31.6%, C3 (<0.9 g/l) was 1.24, 1.02 and 1.19 and C4 (<0.1 g/l) was 0.25, 0.25 and 0.27 respectively. SS exhibits a diverse spectrum of clinical and molecular phenotypes to be explored. Type-I- and type-II-interferon signalling lymphoid and myeloid lineage transcripts, the kynurenine metabolic pathway and cytokines from the acute-phase response of inflammation seem to be implicated.[16] The combined use of epigenetics and genomics to the classical serological and clinical parameters would allow better grouping of patients according to the expression of cytokines, biomarkers, and different patterns of immune dysregulation, and could help in the differentiation from other diseases.[17]

CONCLUSION

Diagnosis of SS remains a challenge, as many suspected cases have other diseases or conditions simulating signs and symptoms of SS. This study describes SS and NSS and indicates the importance of laboratory diagnosis, especially SSa.

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