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Original Research Article

A Clinico Epidemiological Study of Oral Manifestations in Auto Immune Skin Diseases

L. Vijayalakshmi[1], S. Bharathi[2] S. Manipriya[3]

[1]Assistant Professor, Government Medical College, The Nilgiris
[2]Senior Assistant Professor, Government Tiruppur Medical College, Tiruppur
[3]Senior Resident, Velammal medical college and research institute, Madurai

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Corresponding author: Dr. L. Vijayalakshmi
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Abstract:

Introduction: Autoimmune diseases are characterized by presence of auto antibodies that are directed against structures of the self-resulting in tissue damage and degeneration. Auto immune disorder often involves oral mucosa. Oral involvement is the first and most important or often it may be the only sign of such disease process. Oral mucosal lesions are erythema, erosions, ulcers rarely vesicle which are clinically similar and often non-specific. Timely recognition and therapy of oral lesion is critical as it may prevent skin involvement in pemphigus vulgaris. Based on this our aim is to study the epidemiological aspects like incidence, age and gender distribution of oral manifestations in auto immune skin diseases also to study the various oral manifestations, duration and distribution in auto immune skin diseases.

Methodology: This is a cross-sectional hospital-based study conducted from June 2018 to May 2019 at the outpatient Department of Dermatology, Coimbatore Medical College. 100 patients with oral involvement who were confirmed autoimmune skin disorders based on inclusion and exclusion criteria were enrolled in this study. Diagnostic procedures such as histopathological and immunofluroscence method was performed in all patients. Tzanck smear, ANA and ANA profile was carried out in selected patients. The results of the study were analysed.

Results: Our study included 100 patients which included 76 female and 24 males. Among the 100 patients, Pemphigus and its variants 46 patients, pemphigoid and its variants 18 patients, Lupus erythematosus 28 patients, systemic sclerosis 7 patients and sjogren's syndrome 1 patient. All five-disease group showed female predominance with 76 females and 24 males. The mean duration between the onset of oral lesion and skin lesion was 2-5 months. Erosion was the most common morphology. Buccal mucosa (27%) was the most common site in pemphigus whereas in pemphigoid, palate (39%) was the most common site. Erosion (74%) was the common morphology located on palate (44%) in LE patients. Microstomia (70%) was common in SSc and sjogren's syndrome patient had dry mouth.

Conclusion: Oral mucosal lesions are often associated with pemphigus. They may occur before the cutaneous lesions by months. The significance of early diagnosis may help in early intervention and to reduce morbidity and mortality state.

Keywords: Oral manifestation, skin. Autoimmune.

Introduction

The immune system is comprised of biological structures and processes within an organism that protects against diseases. Autoimmune diseases are characterized by presence of auto antibodies that are directed against structures of the self-resulting in tissue damage and degeneration. [1] It occurs in 3-5% of the general population with female predominance.[2] They are classified as organ-specific or multisystem.[3,4]

Autoimmune skin diseases may present with heterogeneous lesions in the oral cavity as oral mucosa is a unique structure. Moreover, the oral mucosa is often the first area to be affected but oral lesions may also occur simultaneously along with cutaneous lesions. It manifests as erosions, erythema, ulcerations which are the most common changes in the oral cavity and less commonly vesicles and desquamative gingivitis. For accurate and early diagnosis, precise patient history and examination along with histopathological and immunological investigations are mandatory. [5, 6, 7] If the localized form is not recognized properly and early enough, the disease can worsen.[8]

Autoimmune skin disorder with oral involvement includes autoimmune blistering disorder and autoimmune connective tissue disorders in which autoantibodies are directed against epithelial structures and nuclear structures respectively. Autoimmune blistering disorder represents heterogeneous group of dermatoses characterized by antibody mediated immune response resulting in blistering of skin and mucosae.[5]

They are broadly classified into pemphigus and pemphigoid group based on the presence of antibodies against desmosomal or hemidesmosomal adhesion proteins.[6] In Pemphigus group of diseases, Pemphigus Vulgaris, Paraneoplastic Pemphigus usually present with mucosal involvement. In pemphigoid group of diseases, Linear IgA disease followed by Mucous Membrane Pemphigoid, Epidermolysis bullosa aquisita, Bullous pemphigoid, Dermatitis Herpetiformis and anti p200 pemphigoid may present with mucosal involvement.

Autoimmune connective tissue diseases such as systemic lupus erythematosus (SLE), systemic sclerosis (SSc), rheumatoid arthritis (RA), Sjögren's syndrome (SS) and celiac disease have an abnormality in structure or function of one or more of the elements of connective tissue. Oral mucosal lesions are erythema, erosions, ulcers rarely vesicle which are clinically similar and often non-specific.[7] Hence, appropriate clinical examination and investigations are mandatory to arrive early diagnosis thereby reducing the morbidity and mortality associated with those diseases.[8, 9, 10]

Our aim is to study the epidemiological aspects like incidence, age and gender distribution of oral manifestations in auto immune skin diseases also to study the various oral manifestations, duration and distribution in auto immune skin diseases.

Materials and Methods

This study was done as a cross sectional study for period of 12 months from June 2018 to May 2019 at Department of dermatology, Venereology, Leprosy – Coimbatore Medical College and Hospital. Hundred patients with oral involvement who were confirmed with autoimmune skin diseases were enrolled in this study.

All newly diagnosed patients of both sexes was included in the study. Whereas patients who have already been diagnosed and received treatment and patients who refuse to give consent were excluded.

All the patients were explained about the study and informed written consent was obtained from them in the language of their convenience. A thorough history regarding the site, duration, precipitating factors, associated skin lesions were obtained and recorded. Demographic details such as age, gender and occupation were also documented. Complete systemic and dermatological examination was done on all participants. Baseline investigations such as complete blood count, ESR, peripheral smear, blood sugar, renal function test, liver function test, urine analysis and diagnostic procedures such as histopathological and immunofluroscence methods were performed in all patients. Tzanck smear, ANA and ANA profile was carried out in selected patients. The results of the study were analysed.

Results

A total of 100 patients were included in the study. The mean age was 49 years (Range 10 to 78 years). Youngest age was 10 years and eldest being 78 years. In our study there was 24 male and 76 female patients. Among the 76 female patients majority of them (28.9%) were in the age group of 40-49 years whereas (33.3%) male patients belonged to the age group of 30-39 years. The majority of patients belonged to pemphigus group followed by lupus erythematosus. All five autoimmune diseases showed female predominance.

Table 1: Distribution of Clinical Subtypes of the Diseases.

Disease	N=100	Percentage
Pemphigus group	46	46%
Pemphigoid group	18	18%
Lupus eythematosus	28	28%
Systemic sclerosis	7	7%
Sjogren's syndrome	1	1%

A total of 46 patients belonged to pemphigus group. The mean age was 44.3 years (range 19 to 70 years. 13 patients were male and rest 33 were female in ratio of 1:3. Among the 33 female patients majority of them were in the age group of 40 – 49 years, whereas 46.1% of male patients belonged to the age group of 30 – 39 years. Coming to clinical type, majority of the patients (92%) belonged to pemphigus vulgaris whereas only 8% belonged to pemphigus vegetans and paraneoplastic pemphigus.

Among pemphigus vulgaris patients, 39 patients (93%) had mucocutaneous involvement whereas only 3 patients (7%) had mucosal involvement. In majority of patients (51%) oral lesions occurred before the appearance of skin lesions and simultaneous in 34% of patients. Cutaneous lesions followed by oral lesions was noted in 6 patients (15%). Latency between the onset of oral and cutaneous lesions was less than 1 month in 3

patients, 1-2 month in 7 patients, 3-4 month in 5 patients, and above 5 month in 6 patients. Erosion (53%) was the most common morphology, ulcer and mixed type were 16%, intact vesicle noted in 5% and cerebriform tongue in 2%. Desquamative gingivitis contributing to 13%. Buccal mucosa (27%) was the most common site followed by palate, lips, tongue, gums and floor of mouth.

Oral mucosal severity scoring was done and majority of patients (44%) belongs to mild score whereas 26% was contributed by severe and 30% was moderate score. Nasal mucosa and conjunctiva contributing to 17%, 11% respectively whereas 72% was contributed by genital mucosa. Scalp is involved in 56 % of patients whereas 44% of patients showed nail involvement.

Among 100 patients in this study, 18 patients belonged to pemphigoid group. The mean age was 63 years (Range 10 to 78 years). Among which 5 were male and 13 were female in ratio of 1:2.6. Among the 13 female patients majority of them (61.5%) were in the age group of above 60 years, whereas 60% of male patients belonged to the age group of 30 – 59 years.

Among 18 patients, bullous pemphigoid 14, chronic bullous disease of childhood 1, Linear IgA disease 2 and Mucous membrane pemphigoid 1. Erosion (70%) was the most common morphology, ulcer and mixed type morphology were 16%, and intact vesicle and desquamative gingivitis were noted in 4%. Palate (39%) was the most common site followed by buccal mucosa, lips, tongue, gums and floor of mouth. Nasal mucosa and conjunctival mucosa contributes to 20% whereas 80% of other mucosal involvement was contributed by genital mucosa.

In Lupus erythematosus group, a total of 28 patients were included in the study. The mean age was 34.4 years (Range 15 to 58 years). Five were male and 23 were females with a ratio of 1:4.2. Among the 23 female patients majority of them (34.7%) were in the age group of 40 and above. Among 5 male patients, 60% of male patients belonged to the age group of 40 and above. 14 patients belonged to chronic cutaneous lupus erythematosus and acute cutaneous lupus erythematosus noted in 14 patients, both showed female predominance.

Erosion (74 %) was the most common morphology followed by ulcer, discoid lesions, petechiae and mixed type with erosion and ulcer. Palate (44%) was the most common site followed by lips, buccal mucosa, gums, floor of mouth and tongue.

In systemic sclerosis group, a total of 7 patients were included in the study. The mean age was 34.4 years (Range 15 to 56 years). Among which one was male and rest 6 was female. Among the 6 female patients majority of them (86%) were in the age group of 20-39. Both diffuse and limited type showed female predominance. Microstomia (70%) was the most common morphology followed by sclerosis of frenulum and erosion.

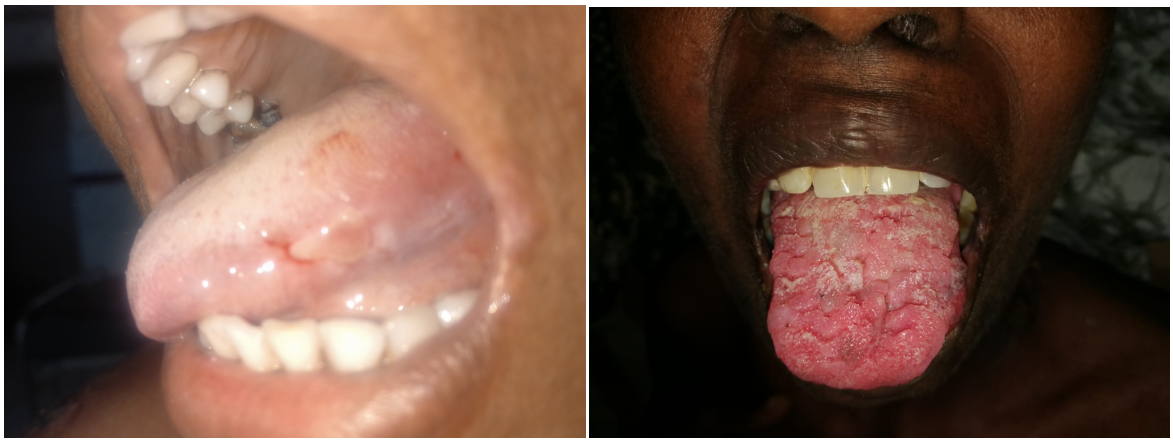

Figure A: Intact vesicle over the tongue in Pemphigus vulgaris, B: Cerebriform tongue in pemphigus vegetans

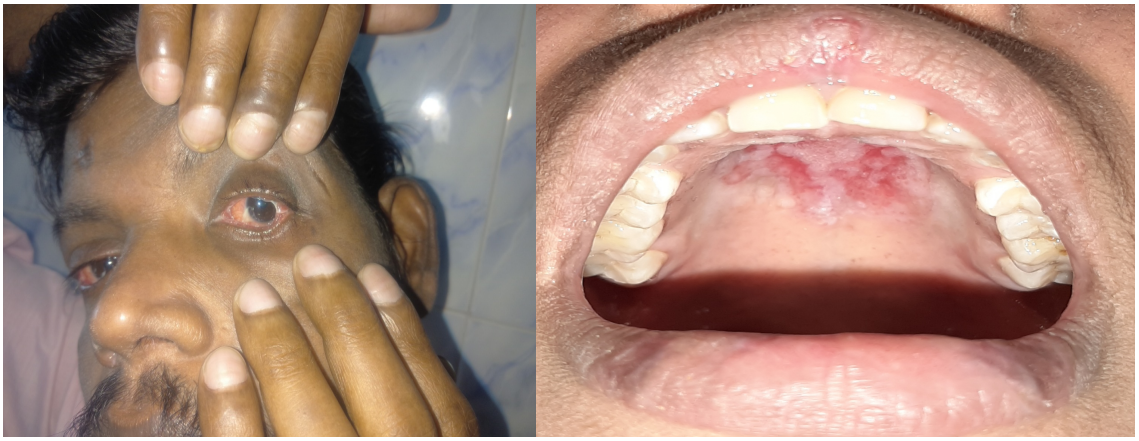

Figure C: Conjunctival erosion in Mucous Membrane Pemphigoid, D: Palatal erosion in SLE

Discussion

This clinic epidemiological study was conducted in Coimbatore medical college hospital among 100 patients of autoimmune skin diseases with oral manifestations.

Among the 100 patients, majority of them were in the age group of 40-49 years followed by 30-39 years, contributing to 53% of patients. In our study, the female patients were on higher side with female to male ratio of 3:1. The majority of patients belonged to pemphigus group which contributing to 46% followed by cutaneous lupus erythematosus (28%), pemphigoid group 18%, systemic sclerosis 8% and sjogren's syndrome 1%.

Among the 46 pemphigus patients, majority of them were in the age group of 30-49 years. The mean age was 44.3 years. Among the 18 pemphigoid patients, majority of the patients were in the age group of 60 – 80 years and the mean age was 63 years. This was in concordance with study conducted by Ramos-e-Silva M, Ferreira A, Jacques et al. [12]

In our study both pemphigus and pemphigoid group, females are most commonly affected approximately 2.3 times higher than male. This result was similar with study conducted by Ric Goncalo et al.[13]

Among the 46 patients pemphigus group, 42 patients belonged to pemphigus vulgaris whereas 2 patients in pemphigus vegetans and 2 patients in paraneoplatic pemphigus who were diagnosed to have thymoma and carcinoma hypopharynx. Among the 42 pemphigus vulgaris patients, 39 patients had mucocutaneous type whereas only 3 had mucosal type. However, mucosal type is the most common type reported in literature.

Majority of the patients in mucocutaneous type (51%) had oral erosion before the occurrence of skin lesions with mean duration of 2-5 months. This result was comparable to the study conducted by Bascones-Martinez A et al.[14]

In both mucocutaneous and mucosal type, erosion (53%) was the most common morphology followed by mixed type, desquamative gingivitis, ulcer and intact vesicle. Cerebriform tongue was noted in pemphigus vegetans. Buccal mucosa (27%) was the most common site followed by palate, lips, tongue, gums and floor of mouth. This result was concordance with study conducted by Bascones-Martinez A et al.[14]

Based on the severity scoring, 44% belonged to mild disease, severe disease in 26% of patients and moderate disease was noted in 30%. Genital, nasal and conjunctival involvement accounted for 72%, 17% and 11% respectively. 56% patients had scalp involvement and 44% had nail involvement.

Among the 18 pemphigoid patients, 14 patients had bullous pemphigoid, LAD in 2 patient, CBDC and MMP in1 patient. Erosion was the commonest morphology which contributing to 60% followed by ulcer (16%), mixed type (16%), vesicle (4%) and desquamative gingivitis (4%). Palate (39%) was the most common site involved followed by buccal mucosa, lips, tongue, gums and floor of mouth. This was similar to the study conducted by Mayson B. Mustafa, Stephen R. Porter et al.[15]

Genital, nasal and conjunctival mucosae were involved in 80%, 20% and 20% respectively. Among the 28 lupus erythematosus patients, majority of them were in the age group of 30-50 years with mean age was 34.4 years. Both DLE and SLE showed female predilection with female to male ratio 4:1. Painless erosion was the most common oral manifestation of about 74% followed by mixed type, ulcer, petechiae and discoid lesions. Palate (44%) was the most common site followed by buccal mucosa and lips. This was comparable to the observations reported by Akshat Pandey, Mimansha Pandey et al.[16]

Among the 7 systemic sclerosis patients, majority of them in the age group of 20-40 years with mean age of 34.4 years. The disease was most common in females with female to male of 7:1. Only 2

patients had limited type whereas 5 patients had diffuse type. Microstomia (70%) was the common presentation, 2 patients had sclerosis of frenulum and only 1 patient had oral erosion. Though erosions are uncommon in scleroderma, 1 patient had erosion in our study which was reported in the study conducted by Akshat Pandey, Mimansha Pandey et al [16]. Only 1 female patient diagnosed as Sjogren's syndrome with dry mouth which was the common manifestation reported in literature.

Conclusion

Based on the observations made in our study we recommend the following. Complete evaluation of patients presented with oral manifestations is essential to find etiology which plays a major role in management. The mean duration between the onset of oral lesion and skin lesion is 2-5 months in pemphigus vulgaris. Timely recognition and therapy of oral lesion is critical as it may prevent skin involvement in pemphigus vulgaris. If the treatment is instituted during the time, the disease is easier to control and chance for early remission is enhanced. Hence, early diagnosis is mandatory to reduce the morbidity and mortality. Though oral erosion was uncommon in systemic sclerosis it was noted in our study.

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