

Demographic Distribution of Various Skin Diseases in Patients Visiting Tertiary Care Hospital in Saurashtra region, Gujarat, India

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ABSTRACT

Introduction: Pattern of skin diseases are influenced by various factors like genetic, race, religion, occupation, nutrition, habits etc. Thus, the present study was undertaken to assess the incidence of various dermatological disorders and demographic distribution among patients visiting tertiary care hospital in Saurashtra region of India.

Material and Methods: The present prospective study was carried out in Department of Pathology over 250 patients selected randomly visiting tertiary care hospital diagnosed with various skin lesions. Obtained data was arranged according to histopathological characteristics and was expressed as a number and percentage of respondents according to demographic details and were analyzed using the SPSS Version 17 software.

Results: Most of the patients of psoriasis were in age group of 41-60 years of age. Most common age group of lichen lesions were 21-40 years of age. Most common age of presentation in skin malignancies was above 40 years of age.

Conclusion: In psoriasis, males had predominance over females in a ratio of 2.25:1, in lichen lesions as 1.8:1, in verruca vulgaris ratio of 1:1.17 and in pemphigus vulgaris as 1.75:1. In pemphigus foliaceus, almost equal distribution was observed among males and females. Among the patients with infiltrative histopathology, squamous cell carcinoma was more common in males, while basal cell carcinoma was more common in females.

Keywords: Dermatology; demographic features; Psoriasis; Skin malignancy

INTRODUCTION

Pattern of dermatological disorders are affected by various factors such as genetic, race, religion, occupation, nutrition, habits etc. In addition to this, geographical factors like season and climate also influences the occurrence of increased prevalence of certain type of skin disorder in a particular area.¹ Moreover, the overcrowding and poor standards of hygiene are important factors determining the distribution of skin diseases in developing countries. The pattern of skin diseases also varies from country to country and in various regions within the same country.²

Gender differences in anatomy, physiology, as well as in epidemiology and manifestations of various diseases are well documented in literature. Regarding skin disorders, males are more commonly afflicted with infectious diseases whereas women are more vulnerable to psychosomatic disorders, autoimmune, pigmentary as well as allergic diseases.³ Thus, the present study was undertaken to assess the incidence of various dermatological disorders and demographic distribution among patients visiting tertiary care hospital in Saurashtra region.

MATERIAL AND METHODS

The present prospective study was carried out in Department of Pathology over 250 patients selected randomly visiting tertiary care hospital diagnosed with various skin lesions. Informed

consent was taken from the patients. Ethical clearance was obtained before the commencement of the study. Detailed demographic details along with clinical history was taken. Biopsy samples were taken biopsy from lesion along with surrounding normal areas and the specimen was preserved in 10% formalin subsequently dehydration, clearing, embedding in paraffin wax were carried out. Blocks were made, sections of 3micromtr thickness were cut and stained with Harris Haematoxylin and Eosin stain. The sections were histopathologically evaluated under light microscope for the confirmation of the diagnosis. Obtained data was arranged according to histopathological characteristics and was expressed as a number and percentage of respondents according to demographic details and were analyzed using the SPSS Version 17 software.

RESULTS

Demographic distribution of disease pattern:

Diseases confined to superficial subcutaneous units

Among the specimen collected, the frequency of disease confined to superficial subcutaneous units was more common in 21-40 years of age group. On studying demographic distribution in following histopathological subclasses, maximum number of patients were having psoriasiform lesions and maximum patients of psoriasis were in age group of 41-60 years of age while that of lichen planus were in 21-40 years of age and maximum number of patients of pseudoepitheliomatous hyperplasia presented in age group of 41-60 years of age. The age wise disease distribution of diseases based on histopathological characteristics has been mentioned belowneath in Table-1.

In the subcategory, equal disease distribution was observed between males and females. On further evaluation it was found that psoriasiform lesions had predilection for male sex in the ratio of male to female affection of 1.88:1. Likewise lichenoid lesions also had predilection for male sex affecting 13 males versus only 8 females as illustrated in Table-2.

Disease with localised superficial epidermal proliferation

Among this subcategory of disease with localised superficial epidermal proliferation, it was found to be more common in 41-60 years of age group. In the disease subtype on the further

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Sr no.	Histopathological characteristic	Disease subtype	Age distribution (In years)			
			0-20	21-40	41-60	>61
1	Spongiotic changes	Acute spongiotic dermatitis	0	0	1	0
		Sub-Acute spongiotic dermatitis	0	2	1	1
		Chronic spongiotic dermatitis	0	3	2	0
2	Eczematous lesions	Eczema	1	0	2	1
		Disseminated eczema	0	0	2	0
		Hypertrophic eczema	0	0	1	0
		Palmoplantar eczema	0	0	1	0
		Chronic actinic dermatitis	0	0	1	0
		Atopic dermatitis	0	1	0	1
3	Psoriasiform lesions	Psoriasis	1	9	15	1
		Pityriasisrosea	1	0	0	0
		Psoriatic erythroderma	1	0	0	0
4	Lichenoid infiltration	Lichen planus	1	11	4	1
		Hypertrophic LP	1	0	1	0
		Hyperplastic LP	0	1	0	0
		Lichen planopilaris	0	1	0	0
5	Atrophic epidermis	DLE	0	0	2	1
		SLE	0	3	0	0
6	Irregular epidermis	Pseudoepitheliomatous hyperplasia	1	3	5	1
		Actinic keratosis	0	0	1	0
		Keratoacanthoma	0	0	0	1
Total			7	34	39	8

Table-1: Distribution of diseases according to age confined to superficial subcutaneous units

Sr No.	Histopatho-logical characteristic	Disease subtype	No. of males	No. of females
1	Spongiotic changes	Acute spongiotic dermatitis	0	1
		Sub-Acute spongiotic dermatitis	0	4
		Chronic spongiotic dermatitis	1	4
2	Eczematous lesions	Eczema	2	2
		Disseminated eczema	0	2
		Hypertrophic eczema	0	1
		Palmoplantar eczema	0	1
		Chronic actinic dermatitis	1	0
		Atopic dermatitis	2	0
3	Psoriasiform lesions	Psoriasis	18	8
		Pityriasisrosea	0	1
		Psoriatic erythroderma	0	1
4	Lichenoid infiltration	Lichen planus	11	6
		Hypertrophic LP	2	0
		Hyperplastic LP	0	1
		Lichen planopilaris	0	1
5	Atrophic epidermis	DLE	0	3
		SLE	0	3
6	Irregular epidermis	Pseudoepitheliomatous hyperplasia	6	4
		Actinic keratosis	1	0
		Keratoacanthoma	0	1
Total			44	44

Table-2: Distribution of diseases according to gender confined to superficial subcutaneous units

evaluation, it was found that both squamous cell carcinoma and basal cell carcinoma is more common in more than 40 years of age group. In the verruca vulgaris disease subtype the disease was more common in 41-60 years of age group as shown in Table-3.

On evaluating sex distribution of this histopathological subcategory, it was observed that this subcategory has slight female predominance having 51 females and 44 males. Among disease subtypes, basal cell carcinoma had female predominance

with male to female ratio of 1:2 while squamous cell carcinoma had male predominance with male to female ratio of 1.77:1 as shown in Table-4.

Diseases with vesiculobullous lesions

Among the collected specimens, on observation it was found that vesiculobullous lesion was almost equally distributed in the 21-40 (n=8) and 41-60 (n=10) years of age group. Pemphigus vulgaris disease had equal disease distribution among 21-40, 41-60 and more than 60 years of age group. Pemphigus foliaceus

was comparatively more common among 41-60 years of age group as shown in Table-5

Vesiculobullous disease has equal sex predilection. Pemphigus vulgaris has slight predilection for males with male to female ratio of 1.75:1 as illustrated in Table-6.

Miscellaneous disease

The age distribution among the infectious and miscellaneous group of diseases identified on epidermal histopathological characteristics is shown underneath. With the histopathological finding of epidermal thinning and clinical diagnosis of leprosy, it is observed that it was slightly commoner in age group of 21-40 and 41-60 years as shown in Table-7 given below.

In this disease subcategory, leprosy has male predominance with male to female ratio of 2:1 as total 22 males and 11 females were affected.

DISCUSSION

Among the patients with infiltrative histopathology, Squamous

cell carcinoma was more common in males (n=16), while basal cell carcinoma was more common in females (n=18). Basal cell carcinoma had female predominance over males in a ratio of 2:1. Squamous cell carcinoma had male predominance over females in a ratio of 1.77:1. Squamous cell carcinoma was more common in males (n=16), while basal cell carcinoma was more common in females (n=18). Present study was in concordance with study by Laishram RS et al⁴ regarding age distribution, sex predilection of basal cell carcinoma and squamous cell carcinoma.

Among patients with verruca vulgaris (n=27), 13 were males and 14 were females with male to female ratio of 1:1.17. The disease is more common in the 41-60 years of age group (n=13/27, 46%) with 3 patients in 0-20 years age group, 6 patients in 21-40 years age group and 5 patients were in more than 60 years of age group. Present showed discordance with study by Rao SKM et al⁵ regarding age and sex predilection for verruca vulgaris.

Among psoriasisiform lesions, it was found that psoriasis was

Sr no.	Histopatho-Logical characteristic	Disease Subtype	Age distribution (In years)			
			0-20	21-40	41-60	>61
1	Papillomatous lesions	Verruca vulgaris	3	6	13	5
		Verruca plana	1	1	1	0
		Molluscumcontagiosum	1	1	0	0
		Condylomaaccuminata	0	0	1	0
2	Irregularly thickened epidermis	Seborrheic keratosis	0	1	2	1
3	Epidermal proliferation in to dermis	Squamous cell carcinoma	0	3	12	10
		Basal cell carcinoma	0	0	14	13
		Verrucous carcinoma	0	1	1	1
4	Elongated rete ridges	Naevus	1	0	0	0
		Lentigo simplex	0	1	0	0
5	Thinning of epidermis	Porokeratosis	0	1	0	0
Total			6	15	44	30

Table-3: Distribution of diseases according to age with localised superficial epidermal proliferation

Sr no.	Histopatho-Logical characteristic	Disease subtype	No. of males	No. of females
1	Papillomatous lesions	Verruca vulgaris	13	14
		Verruca plana	0	3
		Molluscumcontagiosum	1	1
		Condylomaaccuminata	1	0
2	Irregularly thickened epidermis	Seborrheic keratosis	2	2
3	Epidermal proliferation in to dermis	Squamous cell carcinoma	16	9
		Basal cell carcinoma	9	18
		Verrucous carcinoma	1	2
4	Elongated rete ridges	Naevus	0	1
		Lentigo simplex	0	1
5	Thinning of epidermis	Porokeratosis	1	0
Total			44	51

Table-4: Distribution of diseases according to gender with localised superficial epidermal proliferation

Sr No.	Histopathological characteristic	Disease subtype	Age distribution (In years)			
			0-20	21-40	41-60	>61
1	Subcorneal blisters	Pemphigus foliaceus	0	1	5	1
2	Intraspinous blisters	Darier's disease	0	1	0	0
		Herpes simplex	0	1	0	0
3	Suprabasal blisters	Pemphigus vulgaris	1	3	4	3
		Grover's disease	0	1	0	0
4	Subepidermal blisters	Bullous pemphigoid	0	1	1	3
Total			1	8	10	7

Table-5: Distribution of diseases with vesiculobullous lesions according to age

Sr No.	Histopathological Characteristic	Disease Subtype	No. of males	No. of females
1	Subcorneal blisters	Pemphigus foliaceus	3	4
2	Intraspinous blisters	Darier's disease	1	0
		Herpes simplex	0	1
3	Suprabasal blisters	Pemphigus vulgaris	7	4
		Grover's disease	1	0
4	Subepidermal blisters	Bullous pemphigoid	1	4
Total			13	13

Table-6: Distribution of diseases according to gender with bullous lesions

Sr no	Miscellaneous disease	Age distribution (in years)			
		0-20	21-40	41-60	>61
1	Leprosy	2	15	13	3
2	Lupus vulgaris	0	0	1	0
3	Keratopilaris	2	0	0	0
4	Fibrokeratoma	0	0	1	0
5	Kyrel's disease	0	0	0	1
6	Sebaceous carcinoma	0	0	0	1
7	Prurigo simplex	0	0	1	0
8	Erythema multiforme	0	0	1	0
Total		4	15	17	5

Table-7: Distribution of miscellaneous diseases according to age

Sr no	Miscellaneous disease	No. Of males	No. Of females
1	Leprosy	22	11
2	Lupus vulgaris	1	0
3	Keratopilaris	1	1
4	Fibrokeratoma	0	1
5	Kyrel's disease	0	1
6	Sebaceous carcinoma	0	1
7	Prurigo simplex	1	0
8	Erythema multiforme	1	0
Total		26	15

Table-8: Distribution of miscellaneous diseases according to gender

most common in 41-60 years of age group (n=15/26), with 18 males and 8 females patients, having male to female ratio of 2:1. Same way lichen planus was more common in the 21-40 years of age group (n=11/17) with 11 male and 6 female patients. Present study was compared with study conducted by Asokan N et al,⁶ and by Bedi TR et al,⁷ and it showed concordance with gender predilection with both the studies. Present study was in concordance with study of Ireddy SG et al⁸ regarding most common age presentation of lichenplanus.

Pemphigus vulgaris was almost equally distributed among the age group 21-40 (n=3, 27%), 41-60 (n=4, 36%) and more than 60 years of age (n=3, 27%). While pemphigus foliaceus was more common in 41-60 years of age group (n=5, 71.43%). Bullous pemphigoid was more common in more than 60 years age group (n=3, 60%). Pemphigus vulgaris was more common in males (n=7) than in females (n=4). While both pemphigus foliaceus and bullous pemphigoid is more common in females than in males. In pemphigus vulgaris category, present study showed concordance with study by AryaSR et al⁹ regarding age distribution.

Findings of present study of Pemphigus foliaceus suggest slightly higher prevalence in females than males. This was in

concordance with the findings of study conducted by DeeptiSP et al¹⁰ and Arya SR et al.⁹

Among the miscellaneous category with histopathological finding of epidermal thinning, leprosy was the most common diagnosis made (n=33, 13.2%). It is distributed more commonly in the 21-40 years (n=15) and 41-60 years (n=13) of age group. Total 22 males and 11 females were affected by this disease.

Other than environmental factors, pattern of skin diseases also varies according to socio-economic status and occupation of the patients, as people from low socio-economic group usually present with infective and allergic disorders whereas maid-servants usually affected with candidiasis, paronychia and hand eczemas.¹¹

Gender differences also exist in the occurrence and prognosis of certain skin malignancies which may be attributed to effect of sex hormones and differences in the skin structure and physiology. A more research directed towards gender differences in human health and diseases will lead to the development of novel concepts for prevention, diagnosis and management of dermatological diseases.³

CONCLUSION

The present study found that most of the patients of psoriasis were in age group of 41-60 years of age and patients of lichen lesions were 21-40 years of age. In psoriasis, males had predominance over females in a ratio of 2.25:1. In lichen lesions, males had predominance over females in a ratio of 1.8:1. In pemphigus vulgaris, males had predominance over females in a ratio of 1.75:1. In pemphigus foliaceus, almost equal distribution was observed among males and females. Among the patients with infiltrative histopathology, squamous cell carcinoma was more common in males (n=16), while basal cell carcinoma was more common in females (n=18).

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