

## Original Research Article

# A clinical study of geriatric dermatoses in Dharmapuri district, Tamil Nadu, India

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### ABSTRACT

**Background:** Geriatric dermatoses are one of the most common reasons for day-to-day consultation in the elderly. Over the past few years, understanding of the pathophysiology of skin changes in the geriatric age group has improved and has paved the way for better therapeutic options. This article reviews the various physiological and pathological changes of aging, dwelling on the role of intrinsic and extrinsic factors in the pathogenesis of aging skin. To describe the clinical pattern of various dermatological disorders in the elderly.

**Methods:** The study was conducted in the department of Dermatology, Venereology, Leprosy, at Dharmapuri Medical College, Dharmapuri. Totally 150 members were included in the study, who are above the age of 60 years. Thorough systemic and dermatological examination done. Investigations like complete blood count, liver function test, renal function test, random blood sugar were done.

**Results:** Xerosis was seen most commonly in this study in 96 cases (33.2%), followed by wrinkling in 84 cases (29.1%), immunoglobulin heavy in 72 cases (25.0%), senile comedones 25 cases (8.6%), and senile lentiginos in 12 case (4.1%). In some of these cases, a combination of the above findings was seen.

**Conclusions:** In this study, various physiological signs of aging were studied, which is an inescapable process along with the pathological changes. These changes in photoaging were superimposed with intrinsic aging. Although most of the changes studied were harmless to the elderly, few have an adverse impact on the lives, which included chronic actinic dermatitis and conditions such as malignancy.

**Keywords:** Cutaneous malignancy, Extrinsic aging, Geriatric dermatoses, Infections, Intrinsic aging

### INTRODUCTION

Skin serves as a primary physical barrier between man and his environment. It plays a major role in social and sexual interactions and it is a marker of systemic disease. Aging is the decline in the ability of an organism to maintain homeostasis in the environment.<sup>1</sup> This change in the ability to maintain the internal environment leads to a decrease in viability and an increase in vulnerability. In addition, hygiene, personal habits such as smoking and alcohol, socioeconomic status, nutrition, climate, the

color of skin, neurological or systemic diseases, etc., contribute a role.<sup>2</sup> Skin diseases are the common and inevitable consequence of aging. Moreover, the clinical presentation is not as classical as they do in the younger population. A lifetime solar exposure, along with intrinsic changes in the dermal structures predisposes to a variety of skin diseases.<sup>3</sup> An important factor in aging is a functional decline in endocrine function. In women, the ovarian function will decline due to reduced secretion of ovarian hormones. This leads to marked changes in bone metabolism that can be corrected by hormone

replacement therapy. There is no overall change in the thyroid hormones but tissue utilization of thyroid hormone declines. There may be changes in the metabolism of insulin which is reflected as altered glucose tolerance.<sup>4</sup> Adrenal gland function is normal, no alteration in cortisol secretion and circadian rhythm is similar in both young and the old. Target tissue responses are significantly delayed. DNA synthesis and the cell division rate are reduced. With age, there is a reduction in the effectiveness of the immune system and this is a reflection of changes in the thymus, other lymphoid organs.<sup>6</sup> Aging epidermis shows the slow recovery of barrier function in damaged stratum corneum. There is a decrease in epidermal filaggrin which results in dry and flaky skin especially over the lower limb.<sup>7</sup> Increased susceptibility and fragility of the epidermis is due to atrophy of the stratum spinosum, thinning of the epidermis by 10%-50% and increased heterogeneity of size of basal cells.<sup>8</sup>

## METHODS

The study was conducted in the department of Dermatology, Venereology, Leprosy, at Dharmapuri Medical College, Dharmapuri in the year March 2019-September 2019. Totally 150 members were included in the study, who are above the age of 60 years.

### Inclusion criteria

All patients aged more than 60 years and above attending the outpatient clinic were included.

### Exclusion criteria

Severely ill and immune-compromised individuals. Informed consent was taken from all the patients prior to the examination.

Detailed history including the duration of the disease, site of involvement, occupation, leisure activities, and demographic details was taken. A thorough systemic and dermatological examination will be done. Investigations like complete blood count, liver function test, renal function test, random blood sugar were done. Other investigations like KOH mount, Tzanck smear, skin biopsy, immunofluorescence was done for all relevant cases or if the diagnoses could not have arrived clinically.

### Statistical analysis

All these data were recorded in a proforma, tabulated and analyzed statistically.

## RESULTS

A total of 150 cases with age above 60 years attending OPD of department of dermatology, venereology, leprosy, at Dharmapuri Medical College, were included in the study.

Table 1, the maximum number of patients in this study belonged to the age group of 60-65 years (37%), followed by 66-70 years (30%). The eldest patient was of 91 years.

**Table 1: Age distribution.**

Age groups (in years)	No. of cases	Percentage (%)
60-65	55	37
66-70	45	30
71-75	30	20
76-80	14	9
80+	6	4
<b>Grand total</b>	<b>150</b>	<b>100</b>

**Table 2: Associated systemic diseases.**

Associated systemic diseases	No. of cases	Percentage (%)
<b>Diabetes mellitus</b>	45	30
<b>Hypertension</b>	40	26.7
<b>Anaemia</b>	9	6
<b>Ischaemic heart disease</b>	7	4.7
<b>Bronchial asthma</b>	8	5.4
<b>Kidney disease</b>	3	2.1
<b>COPD</b>	2	1.3
<b>Hypothyroidism</b>	1	0.6
<b>Benign prostatic hypertrophy</b>	1	0.6
<b>No systemic associations</b>	34	22.6
<b>Total</b>	<b>150</b>	<b>100</b>

Table 2, in this study diabetes mellitus was the commonest associated disease seen in 45 cases (30%), followed by hypertension in 40 cases (26.6%), both diabetes mellitus and hypertension was seen in 10 cases, anemia in 9 cases (6%), bronchial asthma in 8 cases (5.3%), ischemic heart disease in 7 cases (4.7%), kidney disease in 3 cases (2%), COPD (chronic obstructive pulmonary disease) in 2 cases (1.3%) hypothyroidism and benign prostatic hypertrophy in 1 case each (0.6%).

**Table 3: Generalised pruritus (n=96).**

Conditions associated with GP	No. of cases	Percentage (%)
<b>Xerosis</b>	66	68.7
<b>Diabetes mellitus</b>	20	21
<b>Anaemia</b>	5	5.2
<b>Kidney disease</b>	3	3.1
<b>Hypothyroidism</b>	1	1
<b>Liver disease</b>	1	1
<b>Total</b>	<b>96</b>	<b>100</b>

Table 3, generalized pruritus was seen in 96 cases in our study, of which xerosis was most commonly associated with generalized pruritus in 66 cases (68.7%), diabetes mellitus in 20 cases (21.0%), anemia in 5 cases (5.2%), kidney disease in 3 cases (3.1%), hypothyroidism in 1

case (1.0%), and liver disease in 1 case (1.0%), thus senile pruritus was commonly associated with xerosis in this study.

**Table 4: Physiological skin changes with aging (n=289).**

Skin changes	No. of cases	% of total patients
<b>Xerosis</b>	96	33.2
<b>Wrinkling</b>	84	29.1
<b>Immunoglobulin heavy</b>	72	25
<b>Senile comedones</b>	25	8.6
<b>Senile lentigenes</b>	12	4.1
<b>Total</b>	289	100

Table 4, xerosis was seen most commonly in this study in 96 cases (33.2%), followed by wrinkling in 84 cases (29.1%), immunoglobulin heavy (IGH) in 72 cases (25.0%), senile comedones 25 cases (8.6%), and senile lentigenes in 12 case (4.1%). In some of these cases, a combination of the above findings was seen.

**Table 5: Pathological skin changes eczematous conditions (n=48).**

Type of eczematous conditions	No. of cases	Percentage (%)
<b>Chronic eczema</b>	12	25
<b>Asteatotic eczema</b>	10	20.85
<b>Stasis eczema</b>	6	12.5
<b>Airborne contact dermatitis</b>	6	12.5
<b>Infectious eczematous dermatitis</b>	5	10.41
<b>Contact dermatitis</b>	3	6.25
<b>Hand eczema</b>	3	6.25
<b>Nummular eczema</b>	2	4.16
<b>Seborrheic dermatitis</b>	1	2.08
<b>Grand total</b>	48	100

Table 5, in this study among the 48 cases of eczematous conditions, chronic eczema was seen in 12 cases (25%), followed by asteatotic eczema in 10 cases (20.85%), stasis eczema was seen in 6 cases (12.5%), airborne contact dermatitis in 6 cases (12.5%), infectious eczematous dermatitis (10.41%), contact dermatitis and hand eczema in 3 cases each (6.25%), nummular eczema in 2 cases (4.16%), and seborrheic dermatitis in 1 case (2.08%).

Table 6, in this study infections were seen in 51 cases, of which fungal infections were the most common finding seen in 28 cases (54.9%). Bacterial infections were seen in 12 cases (23.54%) and viral infections in 11 cases (21.56%). Among the 28 cases of fungal infections dermatophytosis was seen in 23 cases (82.14%), and candidiasis in 5 cases (17.8%). Of the bacterial infections cellulitis was seen in 3 cases (25%), folliculitis in 4 cases

(33.33%), furuncle in 5 cases (41.66%). Among the viral infection's herpes zoster in 8 cases (72.72%) and viral warts in 3 cases (27.27%).

**Table 6: Types of infection.**

Type of infections	Sub type	No. of cases	Percentage (%)
<b>Fungal infections</b>	Fungal total	28	54.9
	Dermatophytosis	23	82.14
	Candidiasis	5	17.8
<b>Bacterial infections</b>	Bacterial total	12	23.54
	Cellulitis	3	25
	Folliculitis	4	33.33
	Furuncle	5	41.66
<b>Viral infections</b>	Viral total	11	21.56
	Herpes zoster	8	72.72
	Viral warts	3	27.27
<b>Grand total</b>		51	100%

**Table 7: Benign tumors of skin (n=287).**

Condition	No. of cases	Percentage (%)
<b>Seborrheic keratosis</b>	87	30.31
<b>Cherry angiomas</b>	79	27.52
<b>Dermatosis papulosa nigra</b>	70	24.4
<b>Acrochordons</b>	47	16.3
<b>Sebaceous hyperplasia</b>	2	0.68
<b>Angiokeratoma of fordyce</b>	1	0.35
<b>Syringoma</b>	1	0.35
<b>Total</b>	287	100

Table 7, among the 287 benign skin lesions seen in our study the most common was seborrheic keratoses with 87 cases (30.31%), followed by cherry angiomas in 79 cases (27.52%), dermatosis papulosa nigra in 70 cases (24.4%), combined features of above findings were seen in some cases. Acrochordons in 47 cases (16.3%), sebaceous hyperplasia in 2 cases (0.68%), angiokeratoma of Fordyce and syringoma in 1 case each (0.35%).

**Table 8: Premalignant and malignant tumors.**

Types	Sub type	No. of cases
<b>Pre-malignant condition</b>	Bowens disease	1
<b>Malignant tumors</b>	Basal cell carcinoma	3
	Squamous cell carcinoma	1
<b>Grand total</b>		5

Table 8, among the premalignant conditions 1 case of Bowen's disease was seen. The most common malignant condition seen in our study was basal cell carcinoma seen in 3 cases, and squamous cell carcinoma of lips was seen in 1 case.

Table 9, bullous pemphigoid was seen most frequently among the bullous disorders in 7 cases, pemphigus vulgaris in 3 cases.

**Table 9: Bullous disorders.**

Types	No. of cases
<b>Bullous pemphigoid</b>	7
<b>Pemphigus vulgaris</b>	3
<b>Grand total</b>	10

## DISCUSSION

Aging is defined as an irreversible process, beginning or accelerating at maturity, which results in an increased range or number of deviations from an ideal state. Old skin is dry and rough, atrophic, wrinkled, unevenly pigmented, shows loss of elasticity, and is prone to develop a number of tumors.<sup>9</sup> Ageing skin has susceptibility to dermatological disorders due to the structural and physiological changes that occur as a consequence of intrinsic and extrinsic aging.<sup>10</sup> In this study, a total of 150 patients varying in age from 60-91 years were examined. Of these, 93 patients (62%) were males and 57 (38%) were females. The eldest patient was 91 years of age. Male to female ratio was 1.63:111 Monk et al 200 cases in an OPD setting, aged 55-85 years of age, of which 63% were males and 37% were females. Among 150 cases in this study, 116 had associated systemic illness. This is higher than found in other studies. Diabetes mellitus was the commonest association seen in 45 (30%), followed by hypertension in 40 cases (26.7%). pruritus was seen in 96 cases (64%), of which xerosis was associated with generalized pruritus in 66 cases (44%), diabetes mellitus in 20 cases (13.3%), anemia in 5 cases (3.3%), kidney disease in 3 cases (2%). hypothyroidism in 1 case (0.6%), liver disease in 1 case (0.6%), Montagna et al noticed generalized pruritus in 78.5% of cases.<sup>12</sup> Aging skin is particularly vulnerable to environmental insults due to the structural and physiological changes that occur as a consequence of both intrinsic and extrinsic aging. It literally means dry skin. It is called as asteatotic eczema when it is associated with eczematous changes. It was a common finding in our study and observed in 96 patients out of 150 (64%). In this study following pathological skin conditions were observed: Eczematous conditions, papulosquamous disorders, infections, benign skin tumors, premalignant and malignant skin tumors, bullous disorders, psychocutaneous disorders, drug reactions, and miscellaneous skin changes. eczematous conditions were found in 48 (32%) cases in this study. Of this asteatotic eczema was found in 10 cases (6.6%). Stasis eczema in 6 cases (4%), airborne contact dermatitis in 6 cases (4%), infectious eczematous dermatitis in 5 cases (3.3%), contact dermatitis in 3 cases (2%) and seborrheic dermatitis in 1 case (0.6%), lichen planus was seen in 5 cases in our study (3.3%).<sup>13</sup> This study was comparable with a study by Neil et al who reported a 5% incidence of lichen planus. Among the fungal infections dermatophytosis was seen in 23 cases (15.3%) and

candidiasis was seen in 5 cases (3.3%). Among bacterial infections cellulitis was seen in 3 cases (2%), folliculitis in 4 cases (2.6%) and furuncle in 5 cases (3.3%). Among viral infections, herpes zoster was seen in 8 cases (5.3%) and 3 cases (2%) of viral warts were seen.<sup>14</sup> Olsen et.al found dermatophytosis in 17.7%. Infective conditions of our study were comparable with the findings of Patange and Fernandez. Seborrheic keratoses were seen in 87 (58%) cases. Cherry angioma in 79 (52.6%) cases, dermatosis papulosa nigra in 70 (46.6%) cases, acrochordons in 47 (31.3%) cases.<sup>15</sup> Ortberg et al found seborrheic keratoses in 61.2%, cherry angioma in 53.7% cases and dermatosis papulosa nigra in 58.8% of cases. Among the premalignant conditions, 1 case (0.6%) of Bowen's disease was seen in our study. The reason is the predominant skin type of our population is IV/V, which is resistant to UV light-induced damage.<sup>16</sup> Park et al, observed lichen simplex chronicus in 12% of cases. In this study, cutaneous amyloidosis (macular, lichen) was seen in 10 cases (6.6%), leg ulcers seen in 8 cases (5.3%), chronic urticaria was seen in 4 cases (2.6%), vitiligo in 5 (3.3%) cases, granuloma annulare, and acrokeratoelastoidosis marginalis in 3 cases each (2%), each of colloid milia and lichen scleroses et atrophicus in 2 cases each (1.3%), 1 case (0.6%) each of perforating dermatoses and pyogenic granuloma were seen.<sup>17</sup>

## CONCLUSION

The commonest associated systemic disease was diabetes mellitus in this study. In this study commonest symptom was generalized pruritus and it was frequently associated with xerosis. In this study, the most common finding was xerosis, followed by wrinkling, IGH, senile lentigines and senile comedones. Various pathological changes seen were eczematous conditions, papulosquamous disorders, infections, bullous disorders, benign and malignant tumors, psychocutaneous diseases and drug reactions.

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