



Original Research Article

Clinical spectrum of ageing versus non-ageing geriatric dermatoses -A case-controlled study in tertiary care centre, Tamil Nadu, South India

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ABSTRACT

Introduction: Ageing process is a complex phenomenon which affects all organs in the body as well as skin. Geriatric dermatoses can be regarded as a cutaneous marker of underlying systemic disorders and internal malignancies. This was study aimed to analyse various clinical ageing patterns among elderly aged above 60 years.

Objectives: To determine the prevalence of clinical patterns of ageing and non-ageing dermatoses among elderly compare with non-dermatology patients.

Materials and Methods: An observational study, conducted on 300 patients aged 60 years and above were analysed for geriatric dermatoses. Of them 211 patients were subjects attended dermatology OPD (group A) and 89 patients were controls (Group B) from other were selected from specialties.. Detailed history, through examination and appropriate investigations were done after obtaining informed consent.

Results: Out of 300 patients, males were (192, 64%) and females (108, 36%), the male female ratio of 1.77:1. Majority were in 60 -70 years age group (245, 81.67%). Primary ageing dermatoses were more prevalent than non-ageing dermatoses (95.3% vs 39%). Pruritus was the commonest complaint in (164, 54.7%). Common patterns of geriatric dermatoses were wrinkling (286, 95.3%), xerosis (164, 54.7%), seborrheic keratosis (94, 31.3%), Leucoplakia (48, 16%), actinic keratosis (6, 2.3%), infections (66, 22%), eczema (48, 16%), pigmentary disorders (38, 12.7%), papulo-squamous disorders (31, 10.3%), autoimmune blistering disorders (6, 2%) and exfoliative dermatitis in 5 (1.7%) cases

Conclusion: Geriatric dermatoses become more prevalent following environmental and occupational hazards as their skin is nutritionally, immunologically and psychologically compromised. Primary ageing and pathological disorders were higher among pre-existing dermatoses group than other systemic disorders group. Early recognition of patterns and appropriate management improve the quality of life in elderly.

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1. Introduction

Ageing is a process of progressive decrease in the maximum functioning and reserve capacity of all organs in the body, including skin.¹ There are no universally accepted criteria to define elderly, as it varies between 60 years and above in developing and 65 years and above in developed countries or the retirement age. United Nations agreed cut off is

60+ years to refer to the older population.^{1,2} Primary ageing geriatric dermatoses represents the physiological ageing changes of skin and non-ageing denote pathological and common dermatoses. Ageing is a form of replicative senescence, induced at cellular level by various intrinsic and extrinsic mechanisms. Intrinsic ageing is an inevitable, physiological and universal phenomenon secondary to oxidative stress, whereas extrinsic ageing induced by ultra violet rays (UVR), infrared rays (IR), smoking and environmental carcinogens which impair structural and

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functional integrity of the skin, often accelerates intrinsic ageing.³

Ageing skin lacks the protective barrier function, DNA repair, immune surveillance, vitamin D production, thermal regulation, excretion and endocrine functions makes the skin susceptible to trauma, infections and failure to adopt extremes of temperatures. Histologically ageing changes of skin presents as epidermal atrophy, degenerative changes of dermis and subcutaneous tissue like decrease in collagen and fragmentation of elastin fibres, loss of fat cause thinning of skin, reduced cushioning effect makes susceptible to trauma, pressure ulcers and delayed healing. Photo ageing of face causes wrinkling, laxity of skin, increased skin markings, crow's feet, stellate pseudo scars, freckles, lentigines, purpura which are cosmetically disfiguring and psychologically affects the elderly. Premalignant and malignant conditions common in elderly are actinic keratosis, Bowen's disease, keratoacanthoma, actinic cheilitis, lentigo maligna, squamous and basal cell carcinomas are more frequent in photodamaged skin.⁴ As the life expectancy at birth increased, a greater number of elderly patients presents with more frequent and atypical manifestations of dermatoses which are challenging to dermatologists globally.

Very few clinical studies on geriatric dermatoses were done from south India. This study was aimed to give more insights toward the patterns of ageing and non-ageing dermatoses among elderly.

2. Material and Methods

It was a hospital based observational; case control study carried out on 300 patients aged above 60 years following approval by Institutional ethics committee. Based on the inclusion and exclusion criteria, all patients were enrolled in the study after was noted in informed consent. We categorized them in to two groups, Geriatric Dermatoses group (Group A) and controls from other specialty (Group B). Group A consisted of 211 cases, had primary dermatological complaints seen in skin OPD and in Group B 89 patients were chosen from other clinical departments presented with systemic ailments. This study was conducted over a period of two years, in department of Dermatology, Rajah Muthiah Medical College Hospital, Chidambaram, Tamilnadu. A detailed history and thorough examination were performed in all patients. The diagnosis was made on clinical grounds and relevant investigations like hemogram, biochemical tests, skin scrapings, nail clippings for fungus, Tzanck smear, skin biopsy, cytology were done. All the patients were screened for ageing and non-ageing dermatoses irrespective of the group and findings were documented. All clinical data were analysed using statistical software SPSS version.

2.1. Inclusion criteria

All patients above 60 years of age, irrespective of systemic ailments

2.2. Exclusion criteria

Patients aged < 60 years, and unwilling patients.

3. Results

A total number of 300 patients aged above 60 years were enrolled in the study, which include Group A with 211 (70.3%) cases presented with primary dermatological complaints and group B (controls) with 89 (29.7%) cases. All the patients were screened for ageing and non-ageing dermatoses and analysed. Out of 300 patients, 192 (64%) were males, 108 (36%) were females thus, the male female ratio of 1.77:1. Age sex distribution was shown in (Table 1). The most common age group was 60 -70 years seen in 245 cases (81.67%), followed by 71-80 years (44, 14.67%) and 11 (3.67%) were above 80 years. The overall mean age was 66.13 years (males 65.91 years, females 66.36 years) and the eldest was 86 years old female. Agriculture was the commonest occupation (171, 58 %) and most of the females were housewives 83 (27.7%) and retired employees were 46 (15.3%).



Fig. 1: Tense large blister with erosions seen over the thigh of a patient with bullous pemphigoid

3.1. Ageing Geriatric dermatoses (Tables 2 and 3)

In this study generalized pruritus was the commonest presenting complaint in 164 cases (54.7%) associated with xerosis, senile pruritus was seen in 28 (9.3%) cases. Primary ageing dermatoses were more prevalent than common dermatoses (197, 93.4% vs 117, 39%). The commonest ageing sign was wrinkling (286, 95.3%) followed by xerosis (164, 54.7%). Photo ageing changes were noted in 77 (25.7%) patients, presented as solar elastosis (103, 34.3%), crow's feet (83, 27.6%) and pigmentary changes



Fig. 2: Ulcerated basal cell carcinoma over the forehead



Fig. 3: Melanocytic nevi over the face

like freckles, lentigines (50, 16.7%). Guttate hypo melanosis noted in (67,22.3%) involving covered areas like trunk and legs. Ageing changes were higher in Group B (74.4%) than Group A (72.5%) but not significant.

3.2. Non ageing Geriatric dermatoses (Table 4)

The commonest non ageing pathological disorder was benign tumours seen in 117 (39%) cases. The frequency of other conditions were nail disorders (106, 35.3%), palmo-plantar keratoderma (83, 27.7%), infections (66, 22%), eczema (48, 16%), pigmentary disorders (38, 12.7%), papulo-squamous disorders (31,10.3%), pilosebaceous disorders (38, 12.7%), autoimmune blistering disorders (6,



Fig. 4: Air-borne contact dermatitis over the face with thickening and lichenification of skin

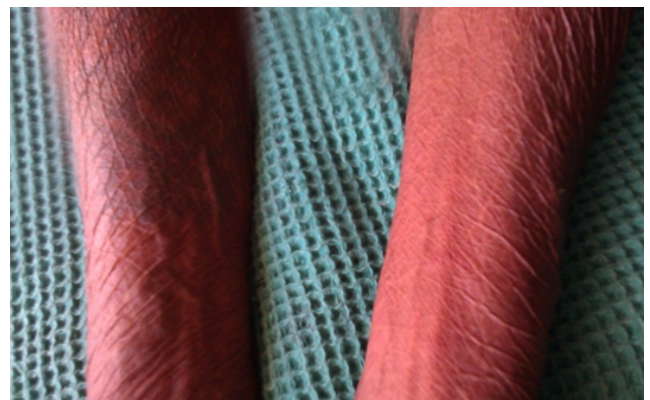


Fig. 5: Senilexerosis over the upper limbs of a woman

2%), alopecia (8,2.7%) and exfoliative dermatitis in 5 (1.7%) cases. Among miscellaneous dermatoses, macular amyloidosis, urticaria, trophic ulcers, atrophic scars, fissure feet, nonspecific pruritus, post herpetic neuralgia were seen in 5 (1.7%) cases each, and one case (0.03%) each of scleroderma, seborrhoea, Favre Rocouchot syndrome, acne rosacea, rhinophyma, polymorphic light eruption and fixed drug reaction were seen. The prevalence of non-ageing changes were high among Group A (13.1%) than controls (5.3%), where as ageing changes were higher than non-ageing in both Group A (72% vs 13.1%) and Group B (74.4% vs 5.3%) respectively.

3.3. Infectious disorders (Table 5)

Infective dermatoses constituted of 66 (22%) of study group. Fungal infections (37, 12.3%), were higher than bacterial (16, 5.3%), and viral (13, 4.3%) infections. Dermatophytosis was the most common form of fungal infection found in 20 cases (6.7%). Other infections were

candidial (14, 4.6%) and pityriasis versicolor, herpes zoster, plantar warts in 6 cases each (2%), cellulitis (5, 1.6%), furuncles (4, 1.3%) and leprosy in 4 (1.3%) cases. Scabies was seen in 10 cases (3.3%). Group A (7.8%) had higher incidence of infection than Group B (2.8%)

3.4. Rare Geriatric dermatoses (Table 6)

Eczematous dermatoses was seen in 48 (16%) cases, which presented as airborne contact dermatitis (18.6%), atopic dermatitis (12, 4.8%), allergic contact dermatitis (8, 2.7%), subacute eczema (8, 2.7%), hand eczema (6, 2.7%) and dermatitis medicamentosa, lichen simplex chronicus, asteatotic eczema and stasis eczema in 4 (1.3%) cases each. Psoriasis was seen in 29 (9.7%) patients, and 2 cases had lichen planus. Psycho dermatological conditions like delusions of parasitosis were seen in (12, 4%) cases, and prurigo nodularis (1, 1.3%). Eczemas were found higher in Group A (22.2%) than controls (1.12%)

Only 6 cases of vesiculobullous disorders were seen, of them 4 had bullous pemphigoid. Pigmentary disorders seen in our study were chemical leukoderma (14, 4.6%), melasma (13, 4.3%) and vitiligo in 11 (3.6%) cases. Oral mucosa showed poor oral hygiene, pigmentary changes like betel, nicotine stomatitis in (65, 21.7%) and leucoplakia (17, 5.7%) in our study. Mucosal changes were high among Group A (18.7%) than controls (6.7%)

Various patterns of benign tumours were tabulated in (Table 7). Seborrheic keratosis was the commonest benign neoplasm of elderly seen in 94 (31.3%) cases followed by acrochordons (50, 16.7%), cherry angiomas (33, 11%) and melanocytic nevi (14, 4.6%). Whereas premalignant conditions like leucoplakia of mucosa (48, 16%), lichen sclerosus et atrophicus (LSA) of genitalia (3, 1%), actinic keratosis (6, 2.3%) and para psoriasis (2, 0.67%) were common among geriatric age group. Only one case of ulcerative basal cell carcinoma was seen. Premalignant neoplasms were proportionately high among the study subjects. The frequency of neoplasms were higher in Group A (18.25%) than controls (10.39%)

Physiological changes of hairs like greying was seen in (277, 92.3%) but androgenetic alopecia with diffuse hair loss was seen in (8, 2.7%) cases. Ageing changes involving nails were seen in (237, 79%) cases and multiple nails were affected. Finger nails were more affected than toe nails (182, 76.7% vs 165, 69.6%). The commonest ageing nail changes were dry lustreless, discoloured nails and longitudinal ridging (Table 8). Pathological nail disorders were noted in (106, 35.3%), and onychomycosis (26, 8.6%) was the commonest, and also chronic Paronychia (22, 7.3%), nail dystrophy (20, 6.7%), traumatic sub unguinal haematoma (9, 3%) and pterygium (8, 2.6%) were the other common patterns. Physiological nail changes were more frequent in Group A (47.5%) than controls (22.2%) and the pathological changes were lesser in both groups (5.75% and

3.37%) respectively.

Multiple comorbid conditions were seen among geriatric population (297, 99%), of which commonest being anaemia was noted (92, 30.7%), and others were hypertension (16, 23.3%) and diabetes (44, 14.6%). Multiple systemic ailments each among elderly individuals were seen in 42 (14%) patients. Of them majority were in control group 24 (22.6%) than 18 (8.5%) of study group (Table 7).

3.5. Ageing versus non ageing dermatoses

4. Discussion

Older age is characterized by the emergence of several complex health states that tend to occur only later in life and that do not fall into discrete disease categories, the term “geriatric syndromes” will be more appropriate. With varying degree of disease severity elderly patients, presents with comorbidities like hearing loss, cataracts, refractive errors, osteoarthritis, chronic obstructive pulmonary disease, diabetes, hypertension, cardiovascular and cerebrovascular accidents.

Geriatric dermatology become an essential and emerging super specialty, as more elderly patients are reporting globally. Advanced life care facilities enhanced the life expectancy at birth in India to 70.4 years. According to World Health Organization by 2050, the world's aged population above 60 years will be expected to increase from 900 million (2015) to 2 billion. Even in world's second largest populated country like India, the elderly aged above 60 years constituted 104 million (2011) which may likely to reach 179 billion in 2031 and further to 301 million in 2051.

Geriatric dermatoses also complex and various atypical presentations had been observed between different skin photo types. The rate of ageing is significantly different among different populations, as well as among different anatomical sites even within a single individual.^{5,6} It is important identify the pattern of various dermatoses affecting geriatric population and provide essential health care services in addition to prime dermatological care.

This present study was a case control study, carried out on 300 elderly patients, at department of Dermatology, Rajah Muthiah Medical College and Hospital, Chidambaram, Tamilnadu. This was aimed to compare the clinical spectrum of primary ageing dermatoses and non-ageing dermatological conditions affecting skin, hair, nail and mucosal surfaces of elderly.

The Group A consisted of patients with primary dermatological complaints (211, 70.3%) and Group B were controls (89, 29.7%) chosen from other clinical departments. Males outnumbered females (64% vs 36%) and male female ration was 1.77:1, which was similar to other studies conducted on elderly age group.^{7,8} (men 65.9, women 66.36 years). Most common age group in our study was 60- 70 years (245, 81.7%), and mean age was 66.13

Table 1: Overall Age and sex distribution of GeriatricDermatoses

Age level in Years	Sex (study)				Total	
	Male		Female		N	%
	N	%	N	%		
60-70	155	63.26	90	36.73	245	81.67
71-80	28	63.63	16	36.36	44	14.67
>81	9	81.81	2	18.18	11	3.67
Total	192	64	108	36	300	100

Value = 0 039

Table 2: Overall distribution ofAgeing dermatoses in Geriatric population

Primary Ageing Dermatoses	Study (n=211)	Control (n=89)	Toatal (n=300)	%
Ageing skin changes	197	89	286	95.3
Hair changes	192	85	277	92.3
Nail disorders (Ageing)	167	70	237	79
Photo ageing of skin	56	21	77	25.7

Table 3: Non- Ageingdermatoses (Pathological) in elderly

Non ageing Dermatoses	Study (n=211)	Control (n=89)	Toatal (n=300)	%
Benign tumours	94	23	117	39
Nail disorders (Pathological)	98	8	106	35.3
Palmo-plantar keratoderma	65	18	83	27.7
Infections	56	10	66	22
Eczema	47	1	48	16
Pigmentary disorders	31	7	38	12.7
Papulosquamous	30	1	31	10.3
Pilosebaceous	12	3	15	5
Melanocytic nevi	13	1	14	4.7
Psycho-dermatological	10	2	12	4
Scabies	10	0	10	3.3
Alopecia (AGA)	8	0	8	2.7
Vesiculobullous	4	2	6	2
Premalignant	5	0	5	1.7
Exfoliative dermatitis	5	0	5	1.7
Malignant	1	0	1	1
Drug reaction	1	0	1	0.3
Miscellaneous	31	15	46	15.3

Table 4: Pattern ofAgeing changes in geriatric patients

Ageing skin changes in Elderly	Study (n=211)	Control (n= 89)	Total (n=300)	%
Wrinkles	197	89	286	95.3
Xerosis	143	21	164	54.7
Solar elastosis	92	11	103	34.3
Crow's feet	72	11	83	27.6
Senile comedones	56	15	71	23.7
IGH	46	21	67	22.3
Facial melanosis	29	21	50	16.7
Ichthyosis vulgaris	13	11	24	8
Acrokerato elastoidosis	1	0	1	0.3
Actinic keratosis	5	1	6	2.3
Miscellaneous	5	2	7	2.33

Table 5: Infectious disorders of skin in elderly

Diseases	Study (n=211)	Controls (n=89)	Total (n=300)	%
Viral infections	12	1	13	4.3
Herpes zoster	6	0	6	2
Plantar wart	5	1	6	2
Verruca vulgaris	1	0	1	0.3
Bacterial infections	11	5	16	5.3
Cellulitis	2	3	5	1.6
Furuncles	3	1	4	1.3
Mycobacterial infections	4	0	4	1.3
Pitted keratolysis	2	1	3	1
Fungal infections	33	4	37	12.3
Dermatophytosis	17	3	20	6.7
Candidiasis	12	0	14	4.6
Pityriasis versicolor	4	1	6	2
Scabies	10	0	10	3.3

Table 6: Rare disorders of skin in elderly

Diseases	Study (n=211)	Controls (n=89)	Total (n=300)	%
Papulo-squamous disorders	31	0	31	10.3
Psoriasis	29	0	29	9.7
Lichen planus	2	0	2	0.7
Vesiculobullous	6	0	6	2
Bullous pemphigoid	4	0	4	1.3
Pemphigus foliaceus	1	0	1	0.3
Pemphigus vulgaris	1	0	1	0.3
Pigmentary disorders	31	7	38	12.6
Melasma	11	2	13	4.3
Vitiligo	8	3	11	3.6
Chemical leuco derma	12	2	14	4.6
Mucosal	81	12	67	31
LP oral	2	0	2	0.7
Leukoplakia oral mucosa	42	6	48	16
nicotine stomatitis	62	3	65	21.7

Table 7: Pattern of skin tumours in elderly

Benign tumours	Study (2=211)	Control (n=89)	Total (n=300)	%
Seborrheic keratosis & DPN	74	20	94	31.30%
Skin tag	39	11	50	16.70%
Cherry angioma	28	5	33	11%
Melanocytic nevi	13	1	14	4.60%
Premalignant			0	
Leukoplakia oral mucosa	42	6	48	16%
Actinic keratosis	5	1	6	2.30%
Lichen sclerosis et atrophicus	3	0	3	1%
Parapsoriasis	2	0	2	0.67%
Malignant			0	
Basal cell carcinoma (ulcerative)	1	0	1	0.30%

Table 8: Pattern of nail changes in Geriatric age group

Geriatric Nail Disorders	Study (N=211)	Controls (N=89)	Overall (N=300)	%
Ageing nail changes				
Dry lustreless	191	39	230	76.70%
Pale, yellow brown discolouration	136	9	145	48.30%
Longitudinal ridging (onychorrhexis)	95	30	125	41.70%
Onychauxis or thickening	59	13	72	24%
Trachyonychia	21	7	28	9.30%
Pathological nail disorders				
Onychomycosis	22	4	26	8.60%
Chronic paronychia	18	4	22	7.30%
Nail dystrophy	16	4	20	6.70%
Sub unguial hyperkeratosis	11	4	15	5%
Traumatic nail changes	7	2	9	3%
Pterygium	7	1	8	2.66%
Nail pitting	4	2	6	2%

Table 9: Comorbid conditions in Geriatricdermatoses

Comorbid conditions	study group (n= 211)	%	Controls (n= 89)	%	Total (n=300)	%
Anaemia	72	34.10%	20	22.50%	92	30.70%
Hypertension	49	23.20%	12	13.40%	61	20.30%
DM	34	16.10%	10	11.20%	44	14.60%
Multiple	18	8.50%	24	26.70%	42	14%
Ischemic Heart disease	9	4.26%	7	7.86%	16	5.30%
RS	8	3.79%	3	3.37%	11	3.70%
GERD	6	2.84%	3	3.37%	9	3.00%
CVA	0	0	6	6.70%	6	2%
BPH	4	1.89%	2	2.25%	6	2.00%
Hernia	5	2.35%	1	1.12%	6	2.00%
Renal impairment	2	0.95%	1	1.12%	3	1.00%
No association	3	1.42%	0	0	3	1.00%
CA prostate	1	0.47%	0	0	1	0.30%

years.⁹ A south Indian study done by Durai et al followed the criteria of above 60 years for males and 50 years for females, stated that females show more ageing changes after attaining menopause.⁴ Chopra and Nair et al followed age criteria of 60 years and above to define elderly in their studies.^{5,9}

The present study observed multiple comorbid conditions among elderly (297, 99%) like, anaemia in (92, 30.7%), hypertension (16, 23.3%) and diabetes (44, 14.6%). Krishnendra et al reported very low incidence of anaemia (3.64%), hypertension (15.45%) and diabetes (22.73%).⁷ Early screening and treatment of anaemia, hypertension, diabetes and other systemic illnesses will improve the quality of life.

Pruritus and dry skin were the predominant complaints (193, 64.3%) of our study. Various other studies reported variable prevalence rates of pruritus 29%,¹⁰ and 78.5%.⁸ We observed xerosis in 54.7%, senile pruritus in 9.3%, scabies (3.3%), eczema (16%) and other systemic disorders were responsible for pruritus. While evaluating the causes

of pruritus in elderly, special attention should be given on underlying systemic illnesses, medications, nutritional status, occult malignancy and psychological factors.

Ageing skin changes in the present study in the descending order of frequency, were wrinkles (95.3%), xerosis (54.7%), solar elastosis (34.3%), crow's feet (27.6%), senile comedones (27.6%), idiopathic guttate hypomelanosis (23.7%), facial melanosis like freckles, lentigines (16.7%), and ichthyosis vulgaris (8%). Generalized wrinkling and glyphic wrinkles in 25.7% (77) over sun exposed parts like face, neck, arm and forearm were the common patterns. Various authors reported xerosis 87.2%,⁷ 93%,¹⁰ 99.8%⁴ as the most common form of ageing than wrinkling 73.6%,⁷ 88%,¹⁰ respectively. Generalized xerosis was noted in 164 cases (54.7%) xerosis was higher among subjects (67.7%) than controls (23.6%). Which was lesser than other studies 87.3%,⁷ 99.8%.⁴ As most of the study population were from rural areas, and agriculture (88.3%) was the prime occupation, most of them undergo prolonged sun exposure. Xerosis was mostly due to atopy, hot humid climatic

conditions, frequent use of detergent soaps, low frequency of emollients usage, more frequent exposure to insecticides and pesticides could be attributed to xerosis in this region. The low prevalence of could be due to most of our patients apply coconut oil after bath. Photo ageing changes in the order of frequency were solar elastosis (34.3%), crow's feet (27.7%), senile comedones (23.7%), IGH (22.3%) facial melanosis (16.7%) and actinic keratosis in (2.3%). The incidence of IGH was varying in other studies 24.5%,⁸ 33%,¹⁰ 45.3%¹¹, 56.36%.⁷

Pigmentary disorders of face like freckling, lentiginos and facial melanosis were seen in 16.7% in the present study. Diffuse facial pigmentation due to hair dye usage was commonly observed. The incidence was well in concordance with the studies of 10%,⁹ 12%,⁸ high percentage of cases were observed in other studies 30%¹¹ 42.7%⁷, 70.6%¹²

Senile comedones were observed in 71(23.7%) cases. The percentage was higher in other studies 28%,¹⁰ 30%,⁷ 31.3%¹¹ Idiopathic Guttate hypomelanosis (IGH) was seen in 67 (22.3%). Which was in concordance with study by Pantage et al.⁸ Whereas the incidence was high among other studies 33%,¹⁰ 45.3,¹¹ 56.36%⁷

In the present study, we observed various non ageing dermatoses, which were categorized under infections, infestations, eczema, papulo-squamous, pigmentary, psychodermatoses, vesiculobullous, benign and malignant neoplasms.

Infectious disorders were noted in 66 (22%) cases. Fungal infection was the commonest type seen in 37 (12.3%), of them majority had dermatophytosis. Scabies was seen in 10 (3.3%) cases. The prevalence of infections and infestations were comparatively lower than other studies. 30.9%, 34.5%, 43.5% respectively.⁷⁻⁹ Hygienic health practices, coconut oil application, and early intervention at primary care level could be the reasons of lesser prevalence in our study.

Out of 300 patients, 48 patients (16%) presented with eczema, Airborne contact dermatitis (ABCD) was seen in 6%, atopic dermatitis in 4%. The incidence of eczema in our study was lesser than that of other studies. 24.2%,⁴ 32.7%⁷, 40%.¹¹

In this study, 29(10.3%) patients had psoriasis, which was similar to study done by Pantage et al.10.5%.⁸ Pigmentary disorders were noted in 38 (12.6%) of cases, of them the commonest was melasma seen in 13 (4.3%), leukoderma in 14 (4.6%) cases and vitiligo in 11 (3.6%) cases. Whereas the incidence was varying in other studies 0.9%,⁷ 19%⁸ low quality rubber foot wear and hair dye were responsible for leukoderma.

Vesiculobullous disorders were seen in 6 (2%) cases, Bullous pemphigoid was the commonest seen in 4 cases, and pemphigus vulgaris and foliaceus were seen in one case (0.3%) each. The incidence of bullous pemphigoid was

similar to other studies.^{4,7}

Benign tumours were seen in 117 (39%) of cases of our study. The most common pattern of tumour was seborrheic keratosis seen in (94, 31.3%) the others were acrochordon in 16.7%, cherry angioma in 11%, melanocytic nevi in 4.6% of cases. The percentage of seborrheic keratosis was higher in other studies 43%,¹⁰ 50.6%,⁴ 52.7%.⁷ and cherry angiomas 48.18%,⁷ 52.5%.⁷ Krishnendra et al reported 24.5% of their cases had acrochordons, which coincide well with our study.⁷

We observed premalignant conditions like leucoplakia of oral mucosa in 48 (16%), actinic keratoses 6(2%), lichen sclerosis et atrophicus in 3 (1%), parapsoriasis in 2 cases and basal cell carcinoma was seen in one case (0.3%). Higher prevalence of oral mucosal leucoplakia could be due to tobacco chewing, smoking and alcohol consumption in our study population. The percentage of pigmentation of oral cavity was very low in Ali SY et al study.² Krishnendra et al reported one case of bowen's disease (0.9%) and squamous cell carcinoma (0.9%) and 3 cases of basal cell carcinoma (2.73%).⁷ Even though most of our study group was agricultural labourers, we did not observe any squamous cell carcinoma cases. Genetic and regional variability and photoprotective effect of melanin in darker skin types (IV/V) could be responsible for lesser incidence dermatoses in geriatric population.

Greying of hair was the hair change seen in (277, 92.3%) cases. Diffuse hair loss and androgenetic alopecia was seen in 8 (2.7%) cases. The incidence of greying was relatively high in our study and concordant with other studies 98.8%,¹³ 98%⁹ respectively.

Dry lustreless nail was the commonest physiological nail change observed in 230 cases (76.7%), followed by discoloured nails in (145,48.3%), longitudinal ridging in (125,41.7%), onychomycosis in (26, 8.6%), chronic paronychia in (22, 7.3%) and nail dystrophy in (22, 6.7%). Other studies reported high incidence of vertical ridging in 72.5%,⁹ 26%² than loss of lustre in 64%⁹ 21%² respectively. The incidence of onychomycosis (20.9%) was high in study done by Krishnendra et al 20.9%.⁷

5. Conclusion

Geriatric dermatoses become an essential cutaneous marker of internal ageing, systemic illnesses and malignancies. Geriatric skin is nutritionally, immunologically, physiologically compromised and more vulnerable environmental hazards. With advancing life care facilities, geriatric population as well as their dermatoses are proportionately increased. Life Quality index was more impaired among pathological and symptomatic conditions than physiological ageing disorders. Overall assessment of comorbidity among elderly revealed multiple systemic disorders were observed and anaemia was the commonest. In addition to hypertension, diabetes most of the study group had

mal absorption, Gastroesophageal Reflux Disease (GERD), and urinary complaints like urinary incontinence, dysuria, balanoposthitis, phimosis, burning sensation of genitalia, genital ulcers were more common and addressed during each follow up visit. In our study most of the patients were taking self-medications, and poly pharmacy, native remedies, inappropriate use of topical corticosteroid combinations. Most of ageing Geriatric dermatoses are mostly neglected and/or unless symptomatic or life threatening. Geriatric dermatology become an inevitable super specialty in future as significant rise in number of cases globally. Innumerable dermatoses with atypical physiological and pathological changes are challenging to caring dermatologists. We have analysed physiological ageing as well as non ageing common dermatoses in 300 patients aged above 60 years. Primary ageing changes of skin, mucosa, hair nails were significantly higher than non-ageing pathological dermatoses. Physiological ageing changes and disease severity were directly proportional their age, irrespective of both subjects and controls. Non ageing infective, inflammatory and neoplastic disorders were more prevalent among the elderly presented with pre-existing dermatoses than control group with other systemic disorders. Benign tumours, premalignant conditions were more frequent than infectious and eczematous disorders. Dermatophytosis was the commonest form of infection. Mucosal changes were mostly premalignant. Exfoliative dermatitis cases had high psychological impact as they were long lasting, with increased financial burden. Preventive measures like avoidance of sunlight along with adequate photoprotective measures, detergent use, tobacco chewing, smoking and avoiding environmental carcinogens like pesticides will prevent ageing dermatoses and malignancies. Health education programmes on geriatric skin disorders, adequate nutritional care, early detection and treatment campaign will bring down the disease morbidity as well as psychological stress which bring down the suicidal tendencies. In addition to assess various patterns of dermatoses, malignancy screening must be carried out aged or photo damaged skin, mucosa and nails. As geriatric dermatology is becoming an emerging specialty, more detailed studies should be carried out on large scale utilizing advanced diagnostic techniques, in future. This would improve the quality of life among elderly.

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None.

7. Conflict of Interest

None.

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