



ORIGINAL RESEARCH PAPER

Dermatology

A CLINICAL STUDY OF GERIATRIC DERMATOSES IN TERTIARY CARE HOSPITAL OF GUJARAT

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ABSTRACT

Background: Ageing is a complex multi-factorial phenomenon in which progressive intrinsic changes in the skin combine synergistically with cumulative environmental insults to produce both structural and functional disturbances. **Objectives:** (1) To estimate prevalence of physiological senile changes among participants (2) To estimate prevalence of various symptoms and diseases including cutaneous tumours among participants (3) To find out prevalence of various co-morbidities among participants. **Method:** A cross sectional observational study was conducted involving 638 elderly participants using purposive sampling method at tertiary care centre of Gujarat. A proforma having sections related to demographic profile, clinical history, cutaneous and systemic examination and laboratory findings were used for data collection. **Results:** About 72% participants were male. About 58% of participants were of 60-69 years. Common geriatric changes were Canities (91%), Wrinkling (86%) and Xerosis (82%). Generalized Pruritus was seen in 68%. Fungal, Bacterial, Viral infections and Parasitic infestation were seen in 28%, 26%, 12% and 7% of participants..Eczematous conditions were seen in almost 26%. Papulo-squamous disorder, Cutaneous adverse drug reactions, Pigmentary disorders, Vesicobullous disorder and Autoimmune Connective tissue disorder were less prevalent (<5%). Co-morbidities like Hypertension, Diabetes, Ischemic heart diseases and Hypothyroidism were seen in 13%, 12%, 5% and 4% participants respectively. Commonest benign tumour was cherry Angioma (68%) while malignant tumor was rare (<1%). **Conclusion:** Physiological changes such as Xerosis and Senile pruritus alone can significantly lead to distress to the elderly patients. By integrating this knowledge in health care facilities we can improve the quality of life of older age population.

INTRODUCTION:

Life expectancy is continuously increasing globally over the years [1]. In India also, life expectancy is consistently showing an upward trend with rise of 29 points from the year 1960 (41 years) to year 2020 (70 years) [2]. Ageing is a complex multi-factorial phenomenon in which progressive intrinsic changes in the skin combine synergistically with cumulative environmental insults to produce both structural and functional disturbances [3]. United Nations defines elderly as those of more than 60 years of age [4]. Ageing gives rise to various trivial dermatological manifestations such as pruritus, xerosis, etc [5]. However, many dermatological conditions like skin malignancy can lead to significant morbidity and impairment of quality of life [6]. This study was conducted with the intention of knowing various dermatological conditions of the elderly population and their prevalence in Western India which will help health systems to be better acquainted and prepared for the rising dermatological health problems of the elderly.

MATERIALS AND METHODOLOGY:

This study is a Cross sectional Observational study carried out in a tertiary care centre in Gujarat within duration of 12 months from September 2020 to August 2021. By purposive Sampling method, we have included 638 subjects over 60 years of age in our study.

Inclusion Criteria:

All patients aged 60 years and above attending the outpatient as well as indoor patient department of study centre who are

willing to give informed written consent for the study.

Exclusion Criteria:

Patients not willing to participate in the study.

All patients above age 60 years were included in this study. Written informed consent was taken from all the patients. Detailed demographic data was collected as per predesigned proforma. All patients were subjected to detailed clinical evaluation including clinical history of symptoms, thorough cutaneous and systemic examination and a battery of laboratory investigations according to clinical symptoms. Investigations like CBC, liver function test, renal function test, random blood sugar done for all cases and specific tests such as thyroid function tests, serum lipid profile, radiological investigations like chest X Ray, USG (abdomen), microbiological investigations like KOH mount, Tzanck smear, slit skin smear for evaluation of acid fast bacilli, histopathological examination of skin biopsy done for all relevant cases or in those the diagnoses could not be arrived clinically. All the data collected by author and co-authors was recorded in MS Excel version 10. Data was tabulated and analyzed statistically using SPSS version 2.0. Ethical Review was done at Institutional ethical committee and the study was permitted by the same.

RESULTS:

Table 1: Demographic Profile Of Participants

Age group (years)	Male (%)	Female (%)	Total (%)
60-69	231(62)	142(38%)	373 (58.46%)

70-79	199(88.4%)	26(11.6%)	225 (35.27%)
80-89	28(75.7%)	9(24.3%)	37 (5.8%)
>90	2(67.7%)	1(33.3%)	3 (0.47%)
Total	460(72%)	178(28%)	638 (100%)

Table 1 showed that we had 72% of male and 28% female patients in our study with male to female ratio of 2.57:1. Most commonly affected age group was 60-69 years (58.5%) followed by 70-79 years (35%).

Table 2: Distribution Of Senile Physiological Changes Amongst Participants (n=638)

Sr No	Senile Changes	Frequency	Percentage
1	Xerosis	523	82%
2	Wrinkling	548	86%
3	Idiopathic Guttate Hypomelanosis	338	53%
4	Senile comedones	44	7%
5	Senile lentigenes	82	13%
6	Senile purpura	70	11%
7	Canities	580	91%
8	Cherry angioma	430	67%

As seen from table 2 that most common senile (physiological) dermatological change was canities which was seen in 9 out of every 10 participants followed by wrinkling (86%) and xerosis (82%). Cherry angioma was seen in about 70% of participants while about half of participants (53%) were having idiopathic guttate hypomelanosis.

Table 3: Distribution Of Diseases Amongst Participants

Sr. No	Disease	no. of male patients (n=460)	No of female patients (n= 178)	Total (n=638)	
1.	Generalised pruritus	303 (65.87%)	130 (73%)	433 (67.87%)	
2.	Fungal infection	Dermatophytoses	10 (2.17%)	26 (14.6%)	36 (5.64%)
		Onychomycosis	37 (8.04%)	20 (11.23%)	57 (8.93%)
		Candidiasis	69 (15.00%)	18 (10.11%)	87 (13.64%)
		Total	116 (25.21%)	64 (36%)	180 (28.21%)
3.	Bacterial infections	Furunculosis	73 (15.86%)	19 (10.67%)	92 (14.42%)
		Folliculitis	42 (9.13%)	10 (5.63%)	52 (8.20%)
		Erythrasma	09 (1.95%)	03 (1.68%)	12 (1.9%)
		Pitted keratolysis	04 (0.86%)	06 (3.3%)	10 (1.57%)
		Leprosy	01 (0.22%)	00	01 (0.16%)
		Total	129 (28.04%)	38 (21.34%)	167 (26.20%)
4.	Viral infection	Herpes zoster	31 (6.73%)	13 (7.30%)	44 (6.9%)
		Herpes simplex	09 (1.95%)	02 (1.12%)	11 (1.72%)
		Wart	14 (3.04%)	04 (2.25%)	18 (2.82%)
		Viral exanthema	05 (1.08%)	01 (0.56%)	06 (0.94%)
		Total	59 (14.53%)	20 (11.23%)	79 (12.38%)
5.	Parasitic infestation	Scabies	27 (5.86%)	11 (6.18%)	38 (5.96%)
		Pediculosis	02 (0.43%)	04 (2.25%)	06 (0.94%)

6.	Eczema	Total	29 (6.30%)	15 (8.43%)	44 (6.90%)
		Allergic contact dermatitis	32 (6.95%)	24 (13.48%)	56 (8.78%)
		Asteotatic eczema	39 (8.47%)	18 (10.11%)	57 (8.93%)
		Irritant contact dermatitis	03 (0.65%)	01 (0.56%)	04 (0.63%)
		Nummular eczema	11 (2.39%)	05 (2.81%)	16 (2.50%)
		Hyperkeratotic hand eczema	12 (2.61%)	07 (3.93%)	19 (2.98%)
		Stasis eczema	07 (1.52%)	01 (0.56%)	08 (1.25%)
		Air borne contact dermatitis	05 (1.09%)	00	05 (0.78%)
		Total	109 (26.85%)	56 (31.46%)	165 (25.86%)
		7.	Papulo-squamous disorder	Psoriasis	13 (2.83%)
Lichen planus	05 (1.09%)			01 (0.56%)	06 (0.94%)
Lichen sclerosus et atrophicus	00			06 (3.30%)	06 (0.94%)
Total	18 (3.91%)			10 (5.62%)	28 (4.39%)
8.	Drug reactions	Fixed drug eruptions	08 (1.74%)	01 (0.56%)	09 (1.41%)
		Urticaria	14 (3.04%)	08 (4.49%)	22 (3.45%)
		Total	22 (4.78%)	9 (5.05%)	31 (4.86%)
9.	Pigmentary disorder	Vitiligo	06 (1.30%)	03 (1.68%)	09 (1.41%)
		Melasma	01 (0.22%)	01 (0.56%)	02 (0.31%)
		Amyloidosis	03 (0.65%)	03 (1.68%)	06 (0.94%)
		Total	10 (2.12%)	07 (3.93%)	17 (2.66%)
10.	Vesicobullous disorder	Pemphigus vulgaris	01 (0.22%)	01 (0.56%)	02 (0.31%)
		Bullous pemphigoid	04 (0.87%)	01 (0.56%)	05 (0.78%)
		Total	05 (1.08%)	02 (1.12%)	07 (1.09%)
11.	Connective tissue disease	Systemic lupus erythematosus	01 (0.22%)	01 (0.56%)	02 (0.31%)
		Systemic sclerosis	00	01 (0.56%)	01 (0.15%)
		Total	01 (0.21%)	02 (1.12%)	03 (0.47%)
12.	Miscellaneous	Vasculitis	03 (0.65%)	01 (0.56%)	04 (0.6%)
		Keloid	07 (1.52%)	02 (1.12%)	09 (1.41%)
		Acanthosis nigricans	04 (0.87%)	06 (3.30%)	10 (1.57%)
		Pellagra	03 (0.65%)	00	03 (0.47%)
		Total	14 (3.04%)	09 (4.98%)	23 (3.7%)

Table 3 shows that most common symptom seen in participants was generalized pruritus observed in 73% males and 66% females. Fungal infection was seen in 28.21% patients. Bacterial infection was marginally lower (26%) than fungal infection among participants and viral infections were observed in 12.38% of patients, out of which Herpes zoster

was the most common viral infection comprising of 6.9% of total patients. Parasitic infestations were seen in about 6% of participants. Eczematous conditions were seen in almost 26% of participants among which Asteatotic eczema and Allergic contact dermatitis included approximately 9% of participants. Papulo-squamous disorder, Cutaneous adverse drug reactions, Pigmentary disorders, Vesicobullous disorder and Autoimmune Connective tissue disorder were less (<5%) prevalent in participants with autoimmune connective tissue disorders being the least common (0.21%).

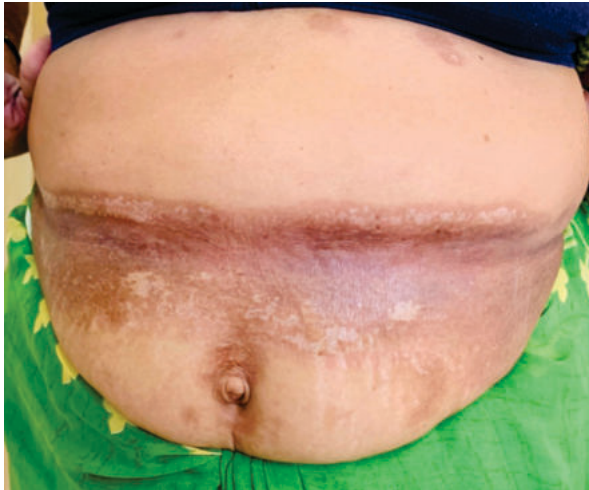


Figure 1: Morphea Over Waist Region In A 62 Year Old Female



Figure 2: Drug Induced Erythema Multiforme In A 67 Year Old Male



Figure 3: Multiple Tense Bullae In A 78 Years Old Male Patient Diagnosed As Bullous Pemphigoid

Table 4: Distribution Of Associated Systemic Diseases (co-morbidities) Among Participants

Systemic disease	No. of cases	Percentage
Hypertension	86	13.48%
Diabetes mellitus	78	12.23%
Ischemic heart disease	31	4.86%
Asthma/ COPD	18	2.83%
Hypothyroidism	23	3.61%
Renal disease	17	2.66%
Cerebrovascular accident	02	0.32%
Anemia	40	6.23%
Tuberculosis	03	0.48%
Malignancy	08	1.28%

Table 4 indicates that Hypertension and Diabetes were most commonly seen co-morbidities among participants with prevalence being about 13% and 12% respectively. 3rd & 4th most common associated co-morbidities were Ischemic heart diseases (5%) and Hypothyroidism (4%) respectively while Renal diseases, Cardiovascular accident, Anemia, Tuberculosis and Malignancy were least common (<2%) co-morbidities found among participants.

Table 5: Pattern Of Cutaneous Tumours In Geriatric Population

Tumor Type	Sub type	No. of cases	Percentage
Benign	DPN	248	39%
	Cherry angioma	434	68%
	Seborrheic keratosis	123	19%
	Acrochordon	114	17%
Malignant	Squamous cell carcinoma	2	0.31%
	Basal cell carcinoma	4	0.62%

As shown in table 4, among cutaneous tumours, benign tumours were commonly seen among participants, most common being cherry Angioma seen in 68% patients, while malignant tumours were seen very rarely (<1%) among participants.



Figure 4: Squamous Cell Carcinoma Over Post Burn Scar In An 83Year Old Female

DISCUSSION:

Most commonly affected age group in our study was 60-69 yrs (58.5%). In the studies conducted by Agarwal R et al^[7], Kumari J et al^[8], Kandwal M et al^[9] and Meena P et al^[10] also reported 60-69 years age group as most commonly affected group with

their proportion being 68.4%, 52.2%, 56.4% and 61% respectively which was comparable to the findings of our study.

In present study, male participants were 72% of all participants while the proportion of male participants were 58.4%, 60%, 66.6% and 59% in the studies conducted by Agarwal R et al^[7], Kumari J et al^[8], Kandwal M et al^[9] and Meena P et al^[10] respectively. These findings were comparable to all compared studies of North and North-east India.

Most common senile physiological changes were canities (91%) and wrinkles (86%) in our study. Wrinkles (97.8%) and cherry angioma (91.8%) were two most prevalent senile skin changes in the study by Agarwal R et al^[7] while study by Kumari J et al^[8] showed xerosis and wrinkles as two commonest physiological changes. Xerosis (63%) and wrinkling (24%) were found as most common physiological cutaneous manifestation in the study by Meena P et al^[10]. 'Wrinkles' came out to be a most common finding among all these studies.

Most common skin symptom seen in participants was generalized pruritus (73%) in our study in comparison to 56% in the study by Agarwal et al^[7]. The prevalence of fungal infection was 25%, 22-30%, 24% and 17% in present study, studies done by Agarwal et al^[7], Kandwal et al^[9] and Meena P et al^[10] respectively which were quite similar in above mentioned studies ranging from 17-30%, while the prevalence of the same was quite lower (11%) in study conducted by Kumari J et al^[8].

The prevalence of viral infection in our study (12%) was comparable to the study done by Meena P^[10] et al (15%), while it was lower in the studies done by Agarwal R^[7] et al (5%), Kumari J^[8] et al (5.5%) and Kandwal M^[9] et al (2%).

On comparing the prevalence of bacterial infection in participants, it was 21%, 29%, 10.5%, 1% and 10% in present study, studies done by Agarwal R et al^[7], Kumari J et al, Kandwal et al^[9] and Meena P et al^[10] respectively which shows very wide variations (1-29%) in different parts of North and North-east India. Such wide variation requires a separate study to know the reason behind.

Parasitic infestations were seen in about 6% of participants in our study which also shares more or less similar picture with the studies by Kumari J et al^[8] and Kandwal et al^[9] (with prevalence 3.3% and 11% respectively).

Eczema was seen in 26% of participants in our study while the same had prevalence of 30%, 23% and 26% in the studies done by Kumari J et al^[8], Kandwal et al^[9] and Meena P et al^[10] respectively. This shows that the eczematous conditions were uniformly common among different parts of North and North-east India.

Drug reactions (4.86%), Pigmentary disorders (2.66%), Vesicobullous disorder (1.09%) and Connective tissue disorder (0.47%) were seen in fewer participants with connective tissue disorders being the least common (0.47%) in our study. These findings showed almost similar prevalence in the study done by Agarwal et al^[7] (drug reactions 0.4-1%, pigmentary disorders 0.4%, Vesicobullous disorder 0.5-1%, Connective tissue disorder 0.3-1%) also.

Hypertension, Diabetes & Ischemic heart diseases were the most commonly seen co-morbidities among participants with prevalence being 13.48%, 12.23% and 4.86% respectively in our study which shows quite similar pattern of co-morbidities in the study by Meena P et al^[10] showing Diabetes (38%), hypertension (19%) and Coronary Artery Diseases (19%) as the 3 most commonly seen co-morbidities with contrasting higher prevalence of the same in this study^[10].

Among cutaneous tumors, benign tumors were seen commonly out of which cherry angioma were the most common tumour seen in 68% of participants in our study. Other benign tumors included DPN (38.9%), Seborrheic keratosis (19.3%), Achrochordon (17.8%). Benign tumors were present in 2-22% and 0.8% of participants in studies of Kumari J et al^[8] and Kandwal et al^[9] respectively which again shows different prevalence in different parts of North and North-east India. Fortunately malignant tumours were seen very rarely (<1%) in our study including 4 cases (0.62%) of Basal cell carcinoma and 2 cases (0.31%) of squamous cell carcinoma. The prevalence of the malignant skin tumors was comparable (0.8%) in study done by Kandwal et al^[9].

CONCLUSION:

As per the saying "All that stands, decays", our skin also bears the changes due to internal as well as external environmental stressors. Physiological changes like Xerosis or Senile pruritus (either was seen in 3/4th of participants) alone can lead to significant distress to the elderly patients. In addition, multiple pathologies are specifically identified in geriatric population. By integrating this knowledge in health care facilities including Primary health centres, we can improve the quality of life of older age population.

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