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A clinicoepidemiological study of mucocutaneous manifestations in geriatric patients

Amulya R[1], Badrinath N[2], Sachin Shetty[3], Ashwini P[4]
[1] Postgraduate, Department of Dermatology, KVG Medical College and Hospital, Karnataka, India
[2] Professor, Department of Dermatology, KVG Medical College and Hospital, Karnataka, India
[3] Assistant Professor, Department of Dermatology, KVG Medical College and Hospital, Karnataka, India
[4] Senior Resident, Department of Dermatology, KVG Medical College and Hospital, Karnataka, India

Abstract
Background: Skin reflects age. Cutaneous signs and symptoms increase as the age advances. These include physiological as well as pathological changes. They can be due to systemic diseases present in old age.
Aim: To study the mucocutaneous manifestations in people above the age of 60 years.
Methods: All the 100 geriatric patients have cutaneous manifestations.
Results: Pruritus, eczema, stasis eczema, fungal infections, benign tumors, xerosis were common. Diabetes was found in large incidence i.e. 49%, which presented with certain skin manifestations like infections, acrochordons etc.
Conclusions: Half of the patients had diabetes and most of the diabetics presented with infections. So diagnosing the skin condition aids in the diagnosis of underlying medical disorder.

Keywords: xerosis, pruritus, infections, diabetes

Introduction
Ageing is a natural, gradual process which occurs at cellular level. It follows a genetic program. Although ageing of the skin is a natural process, the degenerative changes are also influenced by various other factors. A decline in normal functions of skin predominantly its healing capacity, immune responses and capacity to repair DNA occurs with ageing [1].
India is “an ageing nation”, the life expectancy in India was 57 years in the 90s, in 2019 it has increased to 68.9 years. Currently 104 million Indians are aged more than 60 years. This number is expected to increase to 173 million by 2026. As both the life expectancy as well as the geriatric population are on the rise, the percentage of senior citizens seeking dermatological help are projected to increase.
Diagnosis of geriatric dermatoses poses a challenge as the lesions may not be as classical as in young patients, also due to associate other systemic diseases and their medications, treating a skin disease is comparatively difficult.

Methods
Objectives of this study
To study the mucocutaneous manifestations in people above the age of 60 years.

Methodology
Sample size estimation
Formula: $n= PQ/D^2$,
Where P=prevalence, Q=100-prevalance, D=allowable error, n=sample size, $n=30x70/5^2$, OR =84
A time period between June to December 2019.
After getting approved by the institutional ethics committee, the study was undertaken in a tertiary care hospital in Karnataka, India. 100 Patients attending dermatological OPD above the age of 60 years of both sex were included randomly. Informed consent was taken, minor outpatient tests/procedures (KOH, gram stain, woods lamp and biopsy) were done wherever necessary.

Inclusion criteria: All patients above the age of 60 years attending dermatology OPD who have given written consent were included in the study.

Exclusion criteria: The patients not willing to participate in the study were excluded.

Study design: It is a hospital based cross sectional study done from June to December 2019.

Method of randomisation: Systematic random sampling.
Study variables
Demographic data
1. Age
2. Sex

Primary skin condition
1. Non infectious
2. Infectious

Group of diseases
1. Fungal infections
2. Bacterial infections
3. Viral infections
4. Arthropod infections
5. Leg ulcers with secondary infection
6. Eczema and dematitis
7. Senile xerosis
8. Papulosquamous diseases
9. Vesiculobullous dermatitis
10. Benign tumors

11. Malignant tumors
12. Pigment disorders

Data analysis: The collected data was compiled in MS excel sheet. Appropriate statistical tests were applied including mean, percentage and frequency.

Results

Out of hundred subjects, most of them (65%) belonged to the age group of 60-69, followed by 30% patients in the age group of 70-79 [Table 1]. Most of the patients were males (65%), females constituted 35% of the patients [Table 2]. Primary disease was non-infectious in many [Table 3]. Most of the patients presented with multiple skin conditions [Table 4]. Pruritus was the most common complaint in 54% of subjects. It was mild to moderate in two thirds of the patients and severe in one third of the patients who had dermatophytic infections, ezemas and senile xerosis. In most of the patients with senile xerosis, the pruritus was relieved by application of emollients. Out of the various mucocutaneous conditions, the pre-existing chronic dermatoses account for 23% of cases which include psoriasis, lichen planus, chronic eczemas, vitiligo [Figure 1]. Diabetes was found to be associated with many skin disorders. Around 49% of the patients were diabetic. Infections constituted a major chunk of patients. Among 44% of the patients with infections, 25% had diabetes.6% of patients had non healing leg ulcer secondary to diabetes. Diabetic dermopathy was seen in 2 patients. The primary cause for majority of patients to seek medical attention was non infectious diseases (56%). Infections constituted 44% of patients as a presenting feature. Among which 25% had diabetes. Fungal infections were common (30%). Dermatophytosis (19%), other fungal infection (11%). Bacterial infections were seen in 8%. Leprosy was seen in 2 patients [Figure 2]. Viral infections were seen in 6% of patients, herpes zoster in 4 patients, wart and herpes genitalis was seen in 1 patient each. Leg ulcers were seen in 7 patients.6 had diabetic ulcers [Figure 3] and 1 had venous ulcer [Figure 4]. Dermatitis and eczema was seen in 13 patients. Senile xerosis was seen in 18% of patients. It was of mild in 3%, moderate in 12% and severe in 3% patients. Papulosquamous diseases were seen in 10% patients, 7 had psoriasis in which 2 patients were in erythroderma. 3 patients had lichen planus. Among vesiculobullous disorders, bullous pemphigoid was seen in 4 patients [Figure 5]. Bullous vasculitis was seen in 1% patient. Among pigmentary disorders, idiopathic guttate hypomelanosis was in 6% of patients and vitiligo was seen in 2 patients.

Benign tumors were seen in 30% of patients. These include seborrheic keratosis in 13 patients [Figure 6], cherry angioma in 6 patients, acrochordons were seen in 6 patients [Figure 7]. Xanthomas were seen in 2 patients, pyogenic granuloma in 1 patient, pilomatricoma in 1 patient, meibomian cysts were seen in 1 patient. Malignant tumors were seen in 5 patients.3 had basal cell carcinoma [Figure 8] and 2 had squamous cell carcinoma [Figure 9]. Others conditions include senile comedones in 5 patients [Figure 10], delusional parasitosis in 1 patient. Mucosal lesions like oral lichen planus in 2 patients, oral candidiasis in 2 patients, balanoposthitis in 7 patients and all of them were diabetic were also seen. Nail changes like onychomycosis, paronychia, brittle nails, onychogryphosis, longitudinal melanonychia were seen hair changes though not much complained about, canitis, androgenetic alopecia was seen in males and female pattern hair loss was seen in women.

Table 1: Age distribution

Age	Number of patients
60-69 years	65
70-79 years	30
80-89 years	04
>/= 90 years	01

Table 2: Sex distribution

Males	65
Females	35

Table 3: Primary skin condition

Non Infectious	56
Infectious	44

Table 4: Group of diseases

Group of diseases	Conditions included	No. of patients
Fungal infections	Dermatophytosis, P.versicolor, candidiasis	30
Bacterial infections	Mixed infections, furuncles, cellulitis, leprosy	9
Viral infections	H.zoster, warts, H. genitalis	6
Arthropod infections	Pederous dermatitis,Scabies, myiasis	3
Leg ulcers with sec. infection	Diabetic ulcer-6, venous ulcer-1	7
Eczema & dermatitis	LSC, Allergic contact dermatitis,stasis eczema	13
Senile xerosis		18
Papulosquamous diseases	Psoriasis, lichen planus, seborrheic dermatitis, erythroderma-2	10
Vesiculobullous dermatitis	Bullous pemphigoid	4
Benign tumors	Seborrheic keratosis, acrochordons, xanthelesma, comedones, cyst, nevi,angioma, pilomatricoma, pyogenic granuloma	30
Malignant tumors	BCC-3, SCC-2	5
Pigment disorders	Idiopathic guttate hypomelanosis-6, vitiligo-2	8

Fig 1: Vitiligo

Fig 2: Leprosy

Fig 3: Trophic ulcer

Fig 4: Venous ulcer

Fig 5: Bullous pemphigoid

Fig 6: Seborrheic keratosis

Fig 7: Acrochordon

Fig 8: Basal cell carcinoma

Fig 9: Squamous cell carcinoma

Fig 10: Senile comedones

Discussion

In this study, out of 100 patients, majority were seen in the age group of 60-69 years. Male subjects were more (65%) compared to females (35%). Skin manifestations can be pre-existing as in psoriasis, lichen planus, vitiligo or can be of newer onset in geriatric age group like infections, tumors, bullous pemphigoid. Physiological skin changes in old age are due to photodamage. It includes coarsening, dryness, roughness, wrinkling, furrowing, laxity, sagging. Senile purpura can occur due to skin fragility. Sun induced wrinkling on the back of the neck in a typical rhomboidal furrowed pattern is called cutis rhomboidalis nuchae. Age related physiological changes were seen in almost all patients. Signs of excessive photodamage like solar lentigens, seborrheic keratosis and freckles were seen in few patients. Few of these lesions may turn premalignant and malignant. Some of the life threatening malignant tumors like squamous cell carcinomas were also seen in our study. Pruritus was the most common symptom. Just 18% of the patients had senile xerosis which is low compared to other studies, may be owing to high humidity of the area. Pruritus is secondary to xerosis, malnutrition & neglecting the hygiene [2]. Delusion of parasites, i.e. parasitophobia, can also cause pruritus in elderly [3, 4]. Pruritus can also be due to loss of barrier function of the skin plus decrease in lipid contents in stratum corneum [5]. Eczema and lichen simplex chronicus (LSC) were seen in 13% of the patients. Psoriasis and papulosquamous diseases were found in 11% patients. In most of the patients, onset of psoriasis was during 40-50 yrs of age and duration of psoriasis ranged from 10 to 20 years. 5 % of the psoriatic patients developed around 3-6 exacerbations during their lifetime. The most common cause of exacerbations in these patients was withdrawal of medications, upper respiratory tract infections and winter exacerbations. Stress is associated with exacerbation of psoriasis [12]. Incidence of vitiligo in India ranged between 1.2% to 19% [2]. In this study, 2% patients had vitiligo which is much lower than the study done by Patange and Fernandez study showing 19% incidence. The vitiligo lesions were stabilised with topicals and phototheraphy.

Seborrheic keratosis was found in 13% patients. Cherry angioma was found in 6% of patients which is less than in comparison with study by Patange and Fernandez i.e. (37%) [2]. Senile comedones were seen in 5% of our subjects and all the patients had prolonged sun exposure. It is less when compared to 28% and higher in various studies [2].

Achrochordons were seen in 6%, lower when compared to other studies (20% to 32%) [7]. Skin tags were more common in diabetics, which can be marker of diabetes [7].

The incidence of skin disease in diabetics is much higher than in non-diabetics. Around 49% of the subjects were diabetic. Most of them had multiple skin conditions. Benign tumours (skin tag, angioma, comedones etc) were seen in 12 patients, bacterial infections in 3 & fungal infections in 17 patients. Acrochordons, seborrheic keratosis and pruritus were found to be the markers of diabetes in 3 different Indian studies. We obtained similar results too in our study. So diabetes has co-relation with above skin diseases [2, 7, 8].

Skin carcinoma, are less i.e. 5%. They are rare in Indians, due to racially pigmented skin rich in melanocyte. Decreased DNA-repair capacity, increases the carcinogenicity. Management of cutaneous disorders in the elderly population is a challenge. Treatment compliance is affected by several factors including declining cognitive status such as loss of memory and dementia, physical limitations, and impaired sensory functions. To maximize the efficacy and compliance, the treatment regimen should be kept as simple as possible, such as topical treatments; however, it is important to consider the cutaneous structural fragility, intrinsic skin changes and other comorbid conditions, and the patient's physical and cognitive status [9].

Conclusion

Since geriatric dermatology is an emerging branch, an update regarding the skin manifestations is required. Pruritus is the most common symptom. Senile xerosis, eczema, stasis eczema, fungal infections, diabetes associated skin lesions & benign tumours (59.5%) are leading conditions. Numbers of benign tumours and physiological changes are variable, but malignant changes are minimal.

Skin manifestations are associated with diabetes, a commonest systemic disease in geriatrics & some are markers of it.

Declaration of patient consent: The informed consent was obtained for participation in the study and publication of data and images for research and educational purpose

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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