

A CLINICOEPIDEMIOLOGICAL STUDY OF CUTANEOUS MANIFESTATIONS IN GERIATRIC AGE GROUPThakur Rajeev Singh¹, Shikha Singh²¹Associate Professor, Department of (Dermatology, Venereology, Leprosy), Gandhi Medical College.²Junior Resident, Department of (Dermatology, Venereology, Leprosy), Gandhi Medical College.**ABSTRACT****BACKGROUND**

Ageing is a complex process that is due to accumulation of molecular damage overtime. Ageing skin is susceptible to dermatological disorders due to structural and physiological changes that occur as a result of intrinsic or extrinsic ageing. The present study was undertaken to describe the frequency and clinical pattern of cutaneous manifestations in elderly population.

MATERIALS AND METHODS

This descriptive study was carried on elderly, aged above 60 years. A total of 200 patients were included in the study.

RESULTS

In this descriptive study, wrinkling of skin was the most common finding followed by xerosis among skin changes associated with ageing. Among pathological skin changes, eczematous skin condition was the most common. Among infections, fungal infections was the most common followed by bacterial and viral. Among papulosquamous disorders psoriasis was the most common and among tumours cherry angioma was the most common.

CONCLUSION

With ageing, there are so many cutaneous changes that it becomes difficult to delineate physiological from pathological changes. Intrinsic physiological changes in epidermis, dermis vasculature and skin appendages by themselves cause most of the changes.

KEYWORDS

Ageing, Intrinsic, Extrinsic, Cutaneous Changes.

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BACKGROUND

Geriatrics is a Greek Word where gerus means 'old age' and iatrike means medical treatment. It is a branch of medicine concerned with problems of ageing.¹ Ageing is a complex process that is due to accumulation of molecular damage overtime.²

Defining the Old

Ageing is a biological reality which has its own dynamic beyond human control. People aged 60+ years are generally referred to as older population.³ Ageing is progressive, time dependent deterioration of an organism, structural or functional integrity and may be reflected in the ability of the organism to interact with and respond to its environment. Both intrinsic ageing (genetic, chronological ageing) and extrinsic ageing (environmental, photoageing) contribute to cutaneous ageing.⁴ Ageing skin has susceptibility to dermatologic disorders due to the structural and physiological changes that occur as a consequence of intrinsic and extrinsic ageing.⁵

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The common skin disorders prevalent in elderly are xerosis, pruritus, dermatoheliosis (photoageing), benign tumours like acrochordons, seborrheic keratosis, cherry angioma, infections like herpes zoster, dermatophytosis, cellulitis, etc.

Eczemas like asteatotic eczema, stasis eczema, discoid eczema and other forms of eczema are common in elderly.⁴ These dermatoses are further complicated by increased frequency of chronic systemic diseases with increasing age.

The improvement in socioeconomic conditions and major advances in medical field have led to significant increase in life expectancy. India being the second largest populated country in the world with 72 million elderly persons above 60 years of age as on 2001 and the number is likely to increase to 179 million in 2031 and further to 301 million in 2051.⁵ The geriatric population (> 60 years) in India was 6.9% of total population in 2011 (family welfare statistics in India- 2014) and will contribute 12.4% of total population by 2026 AD. The population is getting older with a greater percentage of population over 60 years. Hence, an increased emphasis on geriatric medicine is inevitable, geriatric dermatology is a specialty which requires special attention. With this background, the present study was undertaken to describe the frequency and clinical pattern of cutaneous manifestations in elderly population. The population aged above 60 years was considered for this study.³

MATERIALS AND METHODS**Source of Data and Number**

- The descriptive study was carried on elderly aged above 60 years attending Dermatology OPD as well as IPD at Mahatma Gandhi Memorial Hospital, Warangal.
- A total of 200 patients were included in the study.

Inclusion Criteria

- Patients aged above 60 years were included in the descriptive study.
- Patient willing to give informed consent for taking part in the descriptive study.

Exclusion Criteria

Onset of certain dermatological diseases genodermatoses which interfere with ageing skin, photosensitive genodermatoses, premature ageing genodermatoses, albinos, inherited disorders of DNA instability were excluded.

Method of Collection of Data

- A detailed history in all cases was taken-
 - Name, age, sex, occupation, address,
 - Chief complaints,
 - Past history,
 - Treatment and drug history,
 - Family history,
 - History of any allergy and personal history.
- Complete general physical examination and systemic examination.
- Thorough dermatological examination was carried out including the skin all over the body, hair, nails, oral and genital mucosa.

Routine Investigations

- Haemoglobin, total leukocyte count, differential count.
- RBS.
- Urine routine.

Other Tests

ESR, liver function tests, blood urea, serum creatinine, lipid profile, serum electrolytes, thyroid profile and stool for occult blood were done when required.

Dermatological Procedures

- Scrapings and nail clipping for fungal infection,
- Patch test, skin prick test,
- Skin biopsy,
- Pus for culture and sensitivity were done when required.

Procedures followed were in accordance with ethical standards of the responsible committee on human experimentation and with Helsinki declaration of 1975 that was revised in 2000.

Statistics

A total of 200 cases with age above 60 years attending OPD and IPD of Mahatma Gandhi Memorial Hospital were included in the study.

Age Distribution

Maximum number of patients in this descriptive study belongs to age group of 61 - 65 years (32%) followed by 66 - 70 years (25%). The eldest patient was of 90 years and the mean age in the study was 70.3 years.

Age Groups	Number of Patients	Percentage (%)
61-65	64	32%
66-70	50	25%
71-75	46	23%
76-80	28	14%
80+	12	6%
Grand Total	200	100

Table 1. Age Distribution

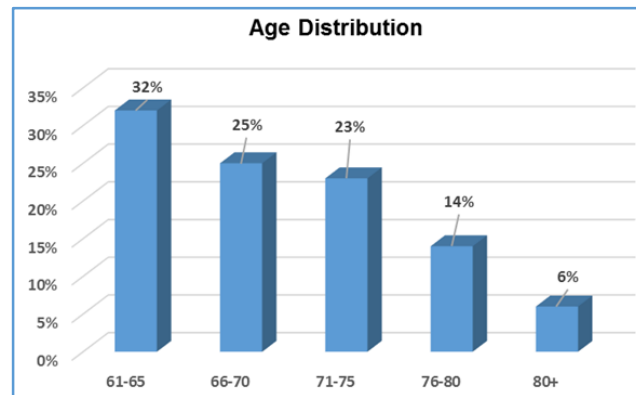


Chart 1. Age Distribution (N= 200)

Sex Distribution

In this descriptive study of the 200 patients, there were 125 males (62.5%) and 75 females (37.5%). Male-to-Female ratio in the study was 1.66: 1.

Sex	Number of Patients	Percentage (%)
Female	75	37.5%
Male	125	62.5%
Grand Total	200	100

Table 2. Sex Distribution (N= 200)

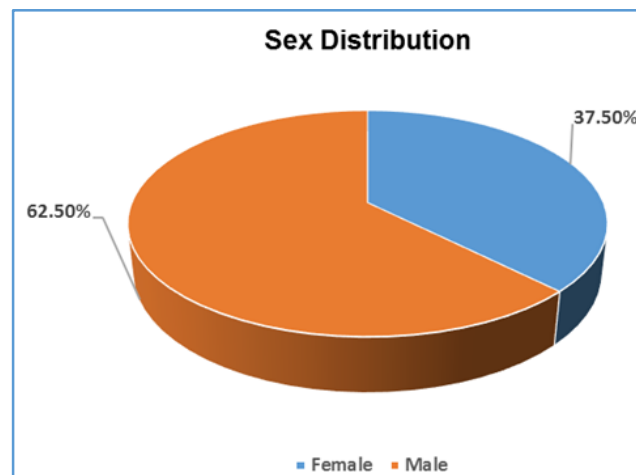


Chart 2. Sex Distribution

Occupation Distribution

In this descriptive study of the 200 patients 102 were retired (51%), of which 22 were females and 80 were males; 30 (15%) were agriculturists, of which 20 were males and 10 were females; 40 females were housewives (20%); 28 (14%) patients were doing some business, of which 3 were females and 25 males. Thus, most male patients were retired and most of the female patients were housewives.

Type	Number of Patients	Percentage (%)
Agricultural	30	15%
Housewives	40	20%
Retired	102	51%
Business	28	14%

Table 3. Occupation Distribution (N= 200)

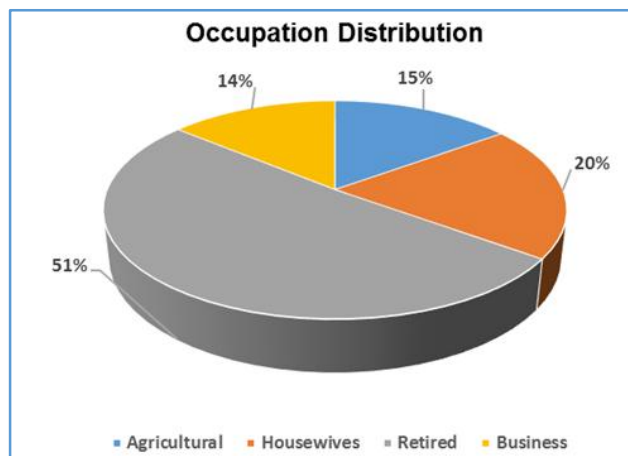


Chart 3. Occupation Distribution

Type	Female	Male	Total
Agricultural	10	20	30
Housewives	40		40
Retired	22	80	102
Business	3	25	28
Total	75	125	200

Table 4. Occupation Distribution by Gender (N= 200)

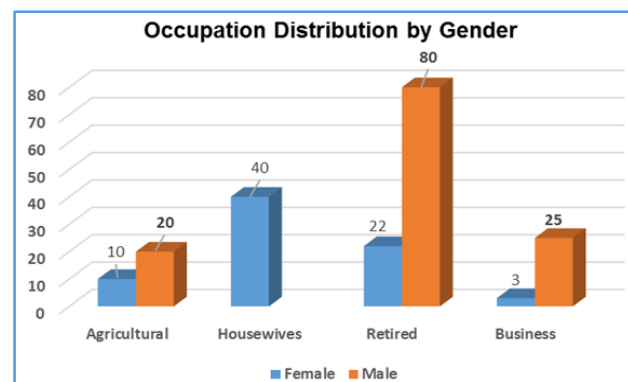


Chart 4. Occupation Distribution by Gender

Associated Diseases

Diabetes Mellitus was the commonest associated disease seen in 55 cases (27.5%) followed by Hypertension in 46 cases (23%), IHD in 8 cases (4%), Anaemia in 7 cases (3.5%), Benign Prostatic Hypertrophy in 5 cases (2.5%), Hypothyroidism in 4 cases (2%), Bronchial Asthma in 3 cases (1.5%), Alcoholic Liver Disease in 3 cases (1.5%), HIV in 1 case (0.5%), Kidney Disease in 2 cases (1%), Rheumatoid Arthritis in 1 case (0.5%), Peptic Ulcer in 2 cases (1%) and COPD (Chronic Obstructive Pulmonary Disease) in 2 cases (1%).

Associated Diseases	No. of Cases	Percentage (%)
Diabetes Mellitus	55	27.5%
Hypertension	46	23%
IHD	8	4%

Anaemia	7	3.5%
Benign Prostatic Hypertrophy	5	2.5%
Hypothyroidism	4	2%
Bronchial Asthma	3	1.5%
Alcoholic Liver Disease	3	1.5%
HIV	1	0.5%
Kidney Disease	2	1%
Rheumatoid Arthritis	1	0.5%
Peptic Ulcer	2	1%
COPD	2	1%

Table 5. Associated Diseases (N= 200)

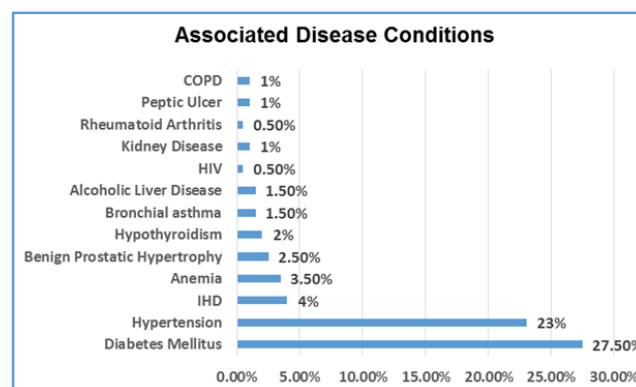


Chart 5. Associated Disease Conditions (N= 200)

Generalised Pruritus

Xerosis was associated with generalised pruritus in 44 cases (22%), Diabetes Mellitus was associated in 16 cases (8%), Anaemia in 4 cases (2%), Hypothyroidism in 4 (2%) cases, Alcoholic Liver Disease in 3 cases (1.5%), HIV in 1 case (0.5%) and Kidney disease in 2 cases (1%). Thus, generalised pruritus was most commonly associated with xerosis in our study.

Sl. No.	Conditions Associated with GP	No. of Cases	Percentage (%)
1.	Xerosis	44	22%
2.	Diabetes Mellitus	16	8%
3.	Anaemia	4	2%
4.	Hypothyroidism	4	2%
5.	Alcoholic Liver Disease	3	1.5%
6.	Kidney Disease	2	1%
7.	HIV	1	0.5%

Table 6. Generalised Pruritus

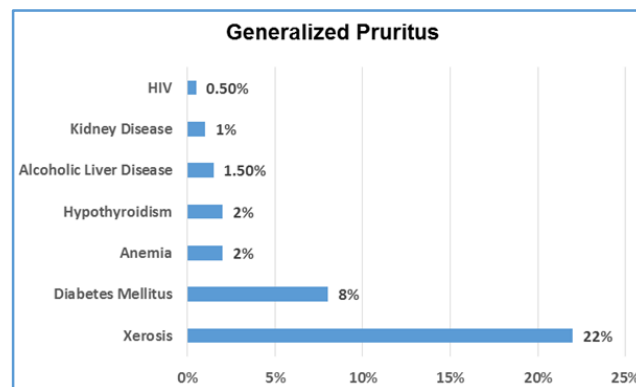


Chart 6. Generalised Pruritus

Skin Changes with Ageing

In this descriptive study, wrinkling of the skin was one of the commonest finding and was seen in 182 cases (91%). Xerosis was seen in 105 cases (52.5%), IGH was seen in 70 cases (35%), Senile Lentiginos was seen in 34 cases (17%) and Senile Comedones in 14 cases (7%).

Skin Changes	Number of Patients	% of Total Patients
Wrinkles	182	91.0%
Xerosis	105	52.5%
IGH	70	35%
Senile Lentiginos	34	17%
Senile Comedones	14	7%

Table 7. Skin Changes with Ageing (N= 200)

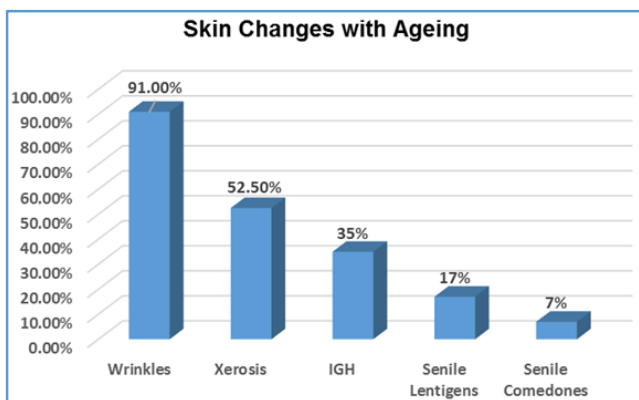


Chart 7. Skin Changes with Ageing

Pathological Skin Changes

In this descriptive study eczematous conditions were seen in 53 cases (26.5%), commonest was exposure dermatitis seen in 10 cases (5%) followed by chronic eczema in 8 cases (4%), contact dermatitis in 8 cases (4%), stasis eczema in 9 cases (4.5%), infectious eczematous dermatitis in 5 cases (2.5%), asteatotic eczema in 4 cases (2%), 2 (1%) cases each of seborrheic dermatitis, nummular eczema in 2 cases (1%), hand eczema in 3 cases (1.5%), 1 case each of follicular eczema and foot eczema was seen.

Type of Eczematous Conditions	No. of Cases	Percentage (%)
Exposure Dermatitis	10	5%
Chronic Eczema	8	4%
Contact Dermatitis	8	4%
Stasis Eczema	9	4.5%
Infectious Eczematous Dermatitis	5	2.5%
Asteatotic Eczema	4	2%
Seborrheic Dermatitis	2	1%
Nummular Eczema	2	1%
Hand Eczema	3	1.5%
Follicular Eczema	1	0.5%
Foot Eczema	1	0.5%
Grand Total	53	26.5%

Table 8. Eczematous Conditions (N= 200)

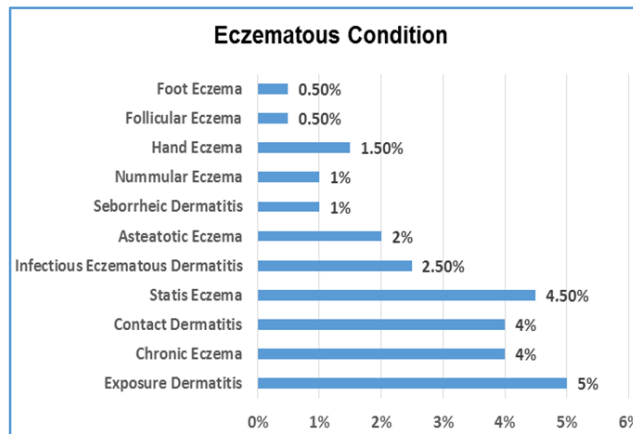


Chart 8. Eczematous Condition

Types of Infections

In this descriptive study infections were seen in 67 cases (33.5%), of which fungal infections was seen in 32 cases (16%), bacterial infections was seen in 18 cases (9%) and viral infections in 17 cases (8.5%). No infestations were seen.

Of the 32 cases of fungal infections, dermatophytosis was seen in 25 cases (12.5%) and candidiasis in 7 cases (3.5%). Among the bacterial infections cellulitis was seen in 8 cases (4%), leprosy in 4 cases (2%), furuncle in 3 cases (1.5%), folliculitis in 2 cases (1%) and 1 case (0.5%) of scrofuloderma was seen. Among viral infections, Herpes zoster was seen in 15 cases (7.5%) and viral warts in 2 cases (1%).

Type of Infections	Subtype	No. of Cases	Percentage (%)
Fungal Infections	Fungal	Total 32	16%
	Dermatophytosis	25	12.5%
	Candidiasis	7	3.5%
Bacterial Infections	Bacterial	Total 18	9%
	Cellulitis	8	4.0%
	Leprosy	4	2%
	Furuncle	3	1.5%
	Folliculitis	2	1%
	Scrofuloderma	1	0.5%
Viral Infections	Viral	Total 17	8.5%
	Herpes Zoster	15	7.5%
	Viral Warts	2	1%
Grand Total		67	33.5%

Table 9. Types of Infection

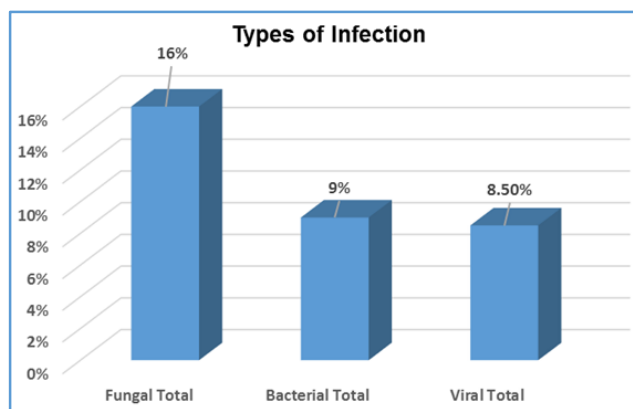


Chart 9. Types of Infection (N= 200)

Papulosquamous Disorders

In this descriptive study Psoriasis was seen in 10 cases (5%), Lichen planus in 4 cases (2%) and 1 case (0.5%) of Pityriasis rubra pilaris was seen.

Types	No. of Cases	Percentage (%)
Psoriasis	10	5%
Lichen Planus	4	2%
Pityriasis Rubra Pilaris	1	0.5%
Grand Total	15	7.5%

Table 10. Papulosquamous Disorders (N= 200)

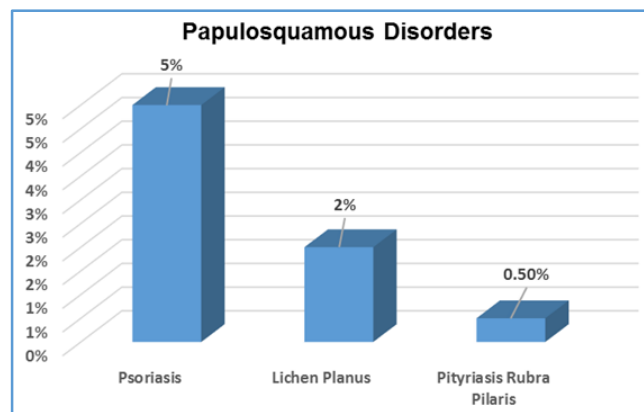


Chart 10. Papulosquamous Disorders

Benign Tumours of Skin

The most common benign skin tumour seen was Cherry angiomas (102, 51%) followed by seborrheic keratosis in 84 cases (42%), Dermatitis papulosa nigra in 67 cases (33.5%), acrochordons in 53 (26.5%) cases, 1 case (0.5%) of Sebaceous cyst and 2 cases (1%) of Syringoma.

Sl. No.	Condition	No. of Cases	Percentage (%)
1.	Cherry Angiomas	102	51%
2.	Seborrheic Keratosis	84	42%
3.	Dermatitis Papulosa Nigra	67	33.5%
4.	Acrochordons	53	26.5%
5.	Sebaceous Cysts	1	0.5%
6.	Syringoma	2	1%

Table 11. Benign Tumours of Skin

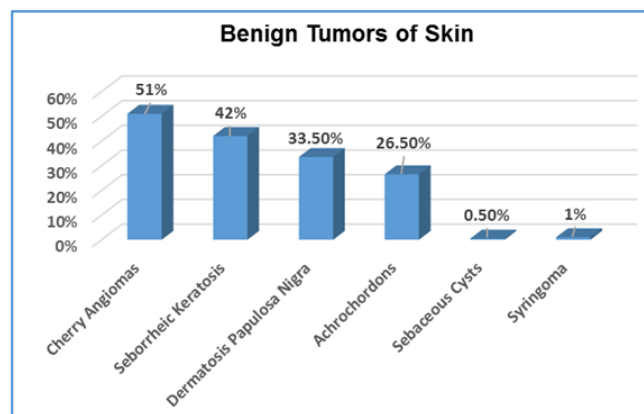


Chart 11. Benign Tumours of Skin

Premalignant and Malignant Tumours

In this descriptive study, one case of premalignant tumours which was seen was Bowen's disease. Among the malignant conditions, 2 cases of basal cell carcinoma and 1 case of squamous cell carcinoma was seen.

Types	Subtype	No. of Cases	Percentage (%)
Pre-Malignant Condition	Bowen's	1	0.5%
Malignant Tumours	Basal Cell Carcinoma	2	1%
	Squamous Cell Carcinoma	1	0.5%
Grand Total		4	2%

Table 12. Premalignant and Malignant Tumours

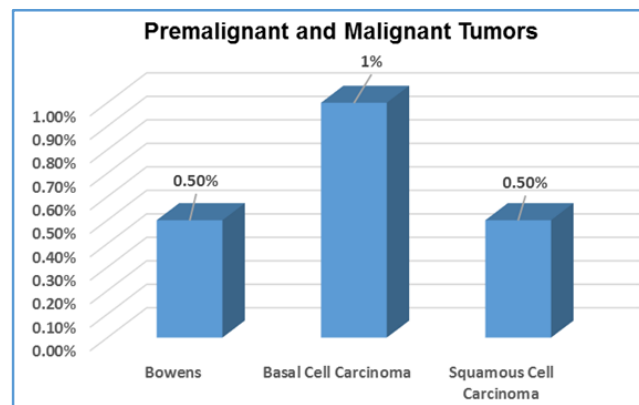


Chart 12. Premalignant and Malignant Tumours (N= 200)

Bullous Disorders

In this descriptive study 7 cases of bullous disorders was seen, out of which 4 cases (2%) had Bullous Pemphigoid, 3 cases (1.5%) had Pemphigus Vulgaris.

Types	No. of Cases	Percentage (%)
Bullous Pemphigoid	4	2.0%
Pemphigus Vulgaris	3	1.5%
Grand Total	7	3.5%

Table 13. Bullous Disorders

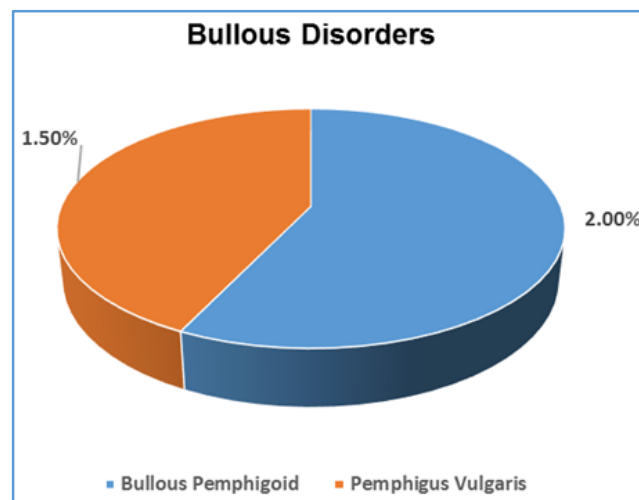


Chart 13. Bullous Disorders (N= 200)

Psychocutaneous Disorders

In this descriptive study 13 cases of Psychocutaneous disorders was seen, of which 10 (5%) cases had Lichen simplex chronicus and 3 (1.5%) cases had Prurigo nodularis.

Types	No. of Cases	Percentage (%)
Lichen simplex chronicus	10	5%
Prurigo nodularis	3	1.5%
Grand Total	13	6.5%

Table 14. Psychocutaneous Disorders

Vascular Disorders

In this descriptive study, 3 cases (1.5%) had senile purpura and 2 (1%) cases of pigmented purpuric dermatoses was seen.

Sl. No.	Condition	No. of Cases	Percentage (%)
1.	Senile purpura	3	1.5%
2.	Pigmented purpuric dermatosis	2	1%

Table 15. Vascular Disorders

Drug Reactions in Elderly

In this descriptive study out of the 200 cases, 4 cases had drug reactions, 2 cases had Lichenoid drug eruptions and 2 cases of drug reaction to Ciprofloxacin.

Miscellaneous Conditions

In this descriptive study, Chronic Urticaria was seen in 4 cases (2%). Colloid milia in 3 cases (1.5%); 2 (1%) cases each of Lichen amyloidosis and Lichen sclerosus et atrophicus was seen; 1 (0.5%) each case of Parapsoriasis, Favre-Racouchot Syndrome, Pruritus ani, Pyogenic Granuloma, Lupus Profundus were seen, 2 (1%) cases each of reactive perforating collagenosis and granuloma annulare and 3 (1.5%) cases of polymorphous light eruptions.

Sl. No.	Condition	No. of Cases	Percentage (%)
1.	Chronic Urticaria	4	2%
2.	Colloid Milia	3	1.5%
3.	Lichen Amyloidosis	2	1%
4.	Lichen sclerosus et atrophicus	2	1%
5.	Parapsoriasis	1	0.5%
6.	Reactive perforating collagenosis	2	1%
7.	Granuloma annulare	2	1%
8.	Favre-Racouchot syndrome	1	0.5%
9.	Polymorphous light eruptions	3	1.5%
10.	Pruritus ani	1	0.5%
11.	Pyogenic granuloma	1	0.5%
12.	Lupus profundus	1	0.5%

Table 16. Miscellaneous Conditions

Nail Changes in Elderly

In this descriptive study, among the nail changes loss of lustre was the commonest followed by vertical ridging in 97 cases (48.5%), Onychorrhexis in 64 cases (32%), Onychomycosis in 22 cases (11%), Thickening in 33 cases (16.5%), Thinning in 14 cases (7%), Subungual Hyperkeratosis in 12 cases (6%), Platyonychia in 6 cases (3%), Koilonychia in 10 cases (5%), Beau’s lines in 4 cases (2%) and Pitting in 4 cases (2%).

Sl. No.	Condition	No. of Cases	Percentage (%)
1.	Loss of Lustre	102	51%
2.	Vertical Ridging	97	48.5%
3.	Onychorrhexis	64	32%
4.	Thickening	33	16.5%
5.	Onychomycosis	22	11%
6.	Thinning	14	7%
7.	Subungual Hyperkeratosis	12	6%
8.	Koilonychias	10	5%
9.	Platyonychia	6	3%
10.	Beau’s Lines	4	2%
11.	Pitting	4	2%

Table 17. Nail Changes in Elderly

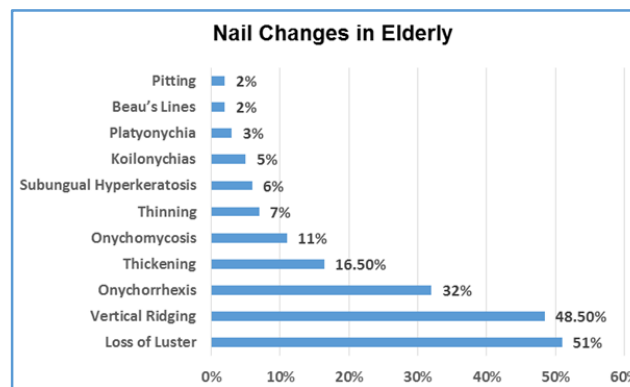


Chart 14. Nail Changes in Elderly (N= 200)

Hair Changes in Elderly

In this descriptive study, greying of hair was one of the most common and was seen in 150 cases (75%). Out of 75 female patients diffuse hair loss was seen in 45 females and out of 125 males 84 cases had Androgenic alopecia.

Sl. No.	Condition	No. of Cases	Males/ Females	Percentage (%)
1.	Diffuse Hair Loss in Females	45	75	60%
2.	Androgenic Alopecia in Males	84	125	67.2%

Table 18. Hair Changes in Elderly

DISCUSSION

Ageing is a complex process that is due to accumulation of molecular damage overtime.² Both intrinsic ageing (genetic, chronological ageing) and extrinsic ageing (environmental, photoageing) contribute to cutaneous ageing.⁴ Ageing skin has susceptibility to dermatologic disorders due to the structural and physiological changes that occur as a consequence of intrinsic and extrinsic ageing.⁵

1. Number of Cases in Relation to Age and Sex

In our descriptive study, a total of 200 patients varying in age from 61 - 93 years were examined. Of these, 125 patients (62.5%) were males and 75 (37.5%) were females. The eldest patient was 90 years of age. Mean age was 70.3 years.

In a study by Sukhum Jiamton, Charrusri Leeyaphan, Nundita Prasertoworoun, Viboon Omchansen, out of 516 patients range from 60 - 94, 217 (47%) were males and 299 (57.9%) were females.⁶ In a study by Talukdar K and Mitra D, out of 360 patients (60 and above) 257 (71.4%) were male patients and 103 (28.6%) were female patients.⁷ In a study by Raveendra L, in 200 patients 65 years and above, 147 (71%) were males and 58 (29%) were females.⁸ In a study by Rashmi Jindal et al out of 1380 patients aged 60 years and above 921 (66.7%) were males and 459 (33.3%) were females.⁹

In a study by Sheetal MP and Shashikumar BM, out of 300 patients aged 60 and above 204 (68%) were males and 96 (32%) were females.¹⁰

Droller made a study on random cases of 476 individuals. Out of this, 192 were men and 284 were women. All patients were between 60 and 90 years of age.¹¹ Tindall and Smith¹² studied 163 volunteers, all above 64 years of age. Verbov¹³ examined 170 consecutive patients aged 60 to 90 years in an OPD. Weismann et al¹⁴ studied 494 residents of a Danish home for the aged between 55 and 106 years of age. Beaugard and Gilchrest¹⁵ studied 68 patients aged between 50 - 91 years. Patange and Fernandez¹⁶ studied 200 cases in an ODP setting, aged 55 - 85 years of age, of which 63% were males and 37% were females. Priya Cinna and Thappa did a hospital-based descriptive study on 500 elderly, females aged 50 years and above and males aged 60 years and above.¹⁷ In their study, female-to-male ratio was 1.34: 1. Out of 500, 213 were males (42.6%) and 287 (57.4) were females.

Our descriptive study is comparable to Rashmi Jindal and Sheetal MP.

2. Associated Conditions

In this descriptive study, 94 patients (47%) had associated systemic illnesses. Some patients had more than one systemic illness. Diabetes mellitus was the commonest association seen in 55 cases (27.5%) followed by hypertension (23%).

In a study by Shashikant B Dhumale and Rajesh Khyalappa, diabetes mellitus was the common association in 27.5% and hypertension in 15%.¹⁸ In a study by Priya Cinna and Thappa, Diabetes (28.9%) and Hypertension (25.5%) were the commonest associated condition,¹⁷ which is similar to our study. Beaugard and Gilchrest¹⁵ described 89.7% of patients to have major medical illnesses, of which 88.2% were on medication. Patange and Fernandez observed associated systemic ailments in 30% of cases.¹⁶

Our study is comparable to Shashikant B Dhumale and Rajesh Khyalappa with reference to diabetes mellitus.

3. Symptomatology

In our descriptive study, generalised pruritus was seen in 60 cases (30%), of which xerosis was associated with generalised pruritus in 44 cases (22%) associated with Diabetes Mellitus in 16 cases (8%), Anaemia in 4 cases (2%), Hypothyroidism in 4 (2%) cases, Alcoholic Liver Disease in 3 cases (1.5%), 1 (0.5%) case of HIV and 2 (1%) cases of Kidney disease. Thus, generalised pruritus was most commonly associated with xerosis in our study.

In a study by Sheetal MP and Shashikumar BM, pruritus was seen in 32%.¹⁰ In a study by Shashikant B Dhumale and Rajesh Khyalappa, pruritus was seen in 20.5%.¹⁸ Droller

noticed generalised pruritus in 29.7% males and 29.2% females.¹¹ Priya Cinna and Thappa found in 49.6%, of whom 29.8% were associated with Xerosis.¹⁷ Beaugard and Gilchrest¹⁵ found in 29% patients. Patange and Fernandez¹⁶ observed pruritus in 78.5% patients.

Findings of generalised pruritus of our study were similar to that seen by Beaugard and Gilchrest and Sheetal MP and Shashikumar BM.

4. Skin Changes with Ageing

With ageing, there are so many cutaneous changes that it becomes difficult to delineate physiological from the pathological. Intrinsic physiologic changes in the epidermis, dermis, vasculature and skin appendages by themselves cause most of the changes.

a) Wrinkling

This was a common finding in the study and noticed in 182 patients [91%].

In a study by Sheetal MP and Shashikumar BM, wrinkling was seen in 89%.¹⁰ In a study by Raveendra L, wrinkling was seen in 88%.⁸

In study by Grover and Narasimhalu, wrinkling was seen in 191 (95.5%).¹⁹ Priya Cinna and Thappa found in 100%,¹⁷ Tindall and Smith¹² [94%] and Beaugard and Gilchrest in 95.6%. Patange and Fernandez do not mention the incidence of wrinkling.¹⁶ Our descriptive study is comparable to Grover and Narasimhalu.

b) Xerosis

Xerosis literally means dry skin. When associated with eczematous changes, it is called asteatotic eczema. In our study, Xerosis was seen in 105 patients [52.5%]. Tindall and Smith¹² reported an incidence of xerosis in 77%, while Beaugard and Gilchrest¹⁵ found it in 85% of patients. Chopra et al found in 108 (50.8%) cases.²⁰ Our study shows similar results as that seen in Chopra et al, but lower incidence of xerosis in this study as compared to those by Tindall and Smith and Beaugard and Gilchrest could be attributed to the tropical climate in which the patients of this study live and relative humidity in tropical climates is more than that in temperate climates reducing the degree of xerosis.

c) Senile Lentigines

Senile lentigines in this study was found in 34 cases [17%]. In a study by Raveendra L, senile lentigines was seen in 30 (15%).⁸ Sheetal MP and Shashikumar BM seen in 30.3%.¹⁰ Talukdar K and Mitra D seen in 10.8%.⁸⁰ Tindall Smith¹² reported senile lentigines in 51%. Beaugard and Gilchrest¹⁵ reported senile lentigines in 70.6%. Patange and Fernandez¹⁶ found an incidence of 12%. The incidence of senile lentigines in this study was comparable to that of Patange and Fernandez, and Raveendra L.

d) Idiopathic Guttate Hypomelanosis

Idiopathic guttate hypomelanosis in our study was seen in 35% (70 cases). In a study by Priya Cinna and Thappa 26% (130),¹⁷ Beaugard and Gilchrest¹⁵ reported an incidence of 24.4% and Patange and Fernandez found it in 24.5% (49). In study by Talukdar K and Mitra D it was

seen in 22.5%; in a study by Sheetal MP and Shashikumar BM it seen in 45.3% and Raveendra L saw it in 33%. Our descriptive study is comparable to Raveendra L.

e) Senile Comedones

Dermatoheliosis is a combination of skin changes produced by solar damage and consists of senile comedones, irregular pigmentation, wrinkling, scaling actinic keratosis, elastosis and malignancy. Senile comedones commonly represent solar damage and in this study they represent dermatoheliosis. An incidence of 14 cases [7%] of senile comedones (represented by dermatoheliosis) was found in this study.

In study by Raveendra L, senile comedones were present in 28%.⁸ Sheetal MP and Shashikumar BM found it in 31.3% and Shashikant B Dhumale found it in 13%.

In a study by Grover and Narasimhalu¹⁹ it was found in 13 (6.5%); in a study by Priya Cinna and Thappa they observed it in 23 (4.6%) individuals.¹⁷ Patange and Fernandez¹⁶ have reported an incidence of 11.5%.

Our descriptive study is comparable to Grover and Narasimhalu.

5. Pathological Skin Changes

Among the various pathologic skin changes seen in the elderly in this study, the following conditions are discussed:- Papulosquamous disorders, eczematous conditions, infections and infestations, benign skin tumours, premalignant and malignant skin tumours, vascular disorders, bullous disorders, psychocutaneous disorders, drug reactions and miscellaneous skin changes.

a) Papulosquamous Disorders

In this descriptive study, psoriasis was seen in 10 cases (5%). In a study by Raveendra L,⁸ psoriasis was found in 7%; Sukhum Jiamton et al⁶ found it in 8.3%; Talukdar K⁷ and Mitra D found it in 4.2%; Jindal et al⁹ found it in 5.4%. Tindall and Smith found psoriasis in 1% of cases. Beauregard and Gilchrest¹⁵ mention an incidence of 2.9%, while Patange and Fernandez¹⁶ found it in 10.5%. This study compares well with that of Jindal et al.

In our descriptive study, 4 cases [2%] of lichen planus was seen. In a study by Raveendra L,⁸ Lichen planus was found in 10 cases (5%); Talukdar K⁷ and Mitra D found it in 3.6%; Jindal et al⁹ found it in 3.3%.

One case of Pityriasis rubra pilaris was seen in [0.5%].

b) Eczematous Conditions

In our descriptive study, eczema was found in 53 cases (26.5%). Contact dermatitis was found in 8 cases (4%), exposure dermatitis in 10 cases (5%), stasis eczema in 9 cases (4.5%), seborrheic dermatitis in 2 cases (1%), Asteatotic eczema in 4 cases (2%) and infective eczematous dermatitis in 5 cases (2.5%).

In a study by Jindal et al,⁹ Seborrheic dermatitis was found in 20 (1.4%), contact dermatitis in 101 (7.3%) and Stasis dermatitis in 8 (0.6%).⁹ In a study by Talukdar K⁷ and Mitra D Eczema was found in 34%, Seborrheic dermatitis in 16 cases (4.4%), Stasis eczema in 15 (4.2%), Contact dermatitis in 14 (3.9%) and Asteatotic eczema in 8 (2.2%). In a study by Sukhum Jiamton et al,⁶ Eczematous dermatitis was found in

31.2% (161), Asteatotic eczema in 10.3%, Seborrheic dermatitis in 2.9%, Contact dermatitis in 1.7% and Stasis eczema in 0.6%. In a study by Shashikant Dhumale and Rajesh Khyalappa,¹⁸ Stasis eczema was found in 19%. In a study by Raveendra L,⁸ Eczematous dermatitis was found in 31%.

Priya Cinna and Thappa¹⁷ found an incidence of eczema in 24.2% (121) similar to that seen in our study. Verbov¹³ reported an incidence of 24.7% with 10% having allergic contact dermatitis. Weismann¹⁴ reported seborrheic dermatitis in 7%, stasis dermatitis in 6.9% and contact dermatitis in 3.8%. Johnson²¹ reported seborrheic dermatitis in 3.6%, contact dermatitis in 2% and eczema in 1.8%. Beauregard and Gilchrest¹⁵ reported contact dermatitis in 11.8%, seborrheic dermatitis in 10.5% and stasis dermatitis in 5.9%. Patange and Fernandez¹⁶ found contact dermatitis in 7.5% and lichen simplex chronicus in 12%.

Incidence of Seborrheic dermatitis compares well with Jindal et al. The incidence of contact dermatitis compares well with that of Weismann. And incidence of stasis eczema was similar to that of Beauregard and Gilchrest. Incidence of contact dermatitis and stasis dermatitis compares well with Talukdar and Mitra.

c) Infective Conditions and Infestations

In this descriptive study infective conditions was seen in 67 (33.5%) cases, fungal infections was seen in 32 (16%) cases, viral infections in 17 (8.5%) cases and bacterial infections in 18 (9%).

Dermatophytosis was seen in 25 cases (12.5%), Candidal infections in 7 cases (3.5%). Among bacterial infections 4 cases of Leprosy, 3 cases of furuncle, 2 cases of Bacterial folliculitis and 8 cases of cellulitis was seen. Among viral infections 15 (7.5%) cases of Herpes Zoster, of which 7 had post-herpetic neuralgia and 2 (1%) cases of viral warts were seen.

In a study by Jindal et al fungal infections were found in 247 (18%), viral in 105 (7.6%), bacterial 37 (2.7%).⁹ By Talukdar K and Mitra D fungal infections were found in 61 (16.9%), bacterial in 32 (8.9%) and viral in 28 (7.8%).⁷ By Raveendra L, fungal infections were found in 11% and viral in 8%.⁸

Tindall and Smith¹² reported dermatophytosis in 79%, but not the incidence of other infections. Johnson reported an incidence of 12.7% for dermatophytosis. Beauregard and Gilchrest¹⁵ found dermatophytosis in 17.7%. Patange and Fernandez reported infective dermatoses as 34.5% of the total dermatoses. Out of this fungal infection was found in 17.5%, bacterial infection in 8.5% and viral infections in 5%. Priya Cinna and Thappa¹⁷ found infectious conditions in 46.8%, of which fungal infections were the commonest (34.4%), onychomycosis in 22.2%, bacterial infections in 0.8% and viral infections in 0.6%.

The incidence of infective conditions in our study compares well with that of Talukdar, Mitra and Patange Fernandez. Incidence of viral infections compares well with Raveendra L.

d) Benign Tumours of the Skin

In our descriptive study, seborrheic keratosis was seen in 84 (42%) cases. Cherry angiomas were seen in 102 (51%) cases, Dermatosis papulosa nigra was seen in 67 cases (33.5%) and Acrochordons was seen in 53 cases (26.5%).

In a study by Raveendra L,⁸ Seborrheic keratosis was found in 56%, dermatosis papulosa nigra was found in 47%, Cherry angiomas in 37% and Acrochordons in 19.5%. By Shashikant B Dhumale and Rajesh Khyalappa,¹⁸ Seborrheic keratosis was found in 15%. In a study by Talukdar K and Mitra D⁷ Cherry angiomas was found in 210 (58.3%), Seborrheic keratosis in 84 (23.3%) and Skin tags in 74 (20.6%). Priya Cinna and Thappa¹⁷ found Seborrheic keratosis in 253 (50.6%) cases and Cherry angioma in 36 (7.2%) cases and Acrochordons in 49%. Grover and Narasimhalu²⁰ found Seborrheic keratosis in 43% and Cherry angioma in 63%.

Tindall and Smith found Seborrheic keratosis in 88% of cases and Cherry angiomas in 75% of cases. Beauregard and Gilchrest¹⁵ observed seborrheic keratosis in 61.2% and cherry angiomas in 53.7 cases. They also reported 58.8% incidence of Dermatitis papulosa nigra. Patange found Cherry angioma in 46.5%, Seborrheic keratosis in 37.5% and acrochordons in 24.5% of cases.

The findings in this study are comparable with that of Beauregard and Gilchrest for cherry angioma. Finding of Seborrheic keratosis in this study compares well with that of Grover and Narasimhalu. Findings in our study is comparable to Mitra D and Talukdar K, and Patange for acrochordons.

e) Premalignant and Malignant Tumours

One case of Bowen's disease were seen in the descriptive study; 3 (1.5%) malignant tumours were encountered in our study, of which 1 was Squamous cell carcinoma and 2 were Basal cell carcinoma.

In a study by Jindal et al⁹ precancerous conditions were present in 0.4% and cutaneous malignancies in 0.8%. Out of 1,380 patients more than 60 years basal cell carcinoma was found in 7 patients and squamous cell carcinoma in 1 case. In a study by Talukdar K and Mitra D,⁷ squamous cell carcinoma was found in 3 cases (0.8%) and basal cell carcinoma in 2 cases (0.6%). In a study by Shashikant Dhumale and Rajesh Khyalappa,¹⁸ out of 200 patients basal cell carcinoma was found in 3 cases and squamous cell carcinoma in 2 cases.

Priya Cinna and Thappa¹⁷ reported 5 cases of malignancy (1%). Patange has reported no case of skin malignancy. The lower incidence of premalignant and malignant skin tumours in this study could be because of the lower incidence of skin cancer in racially pigmented skin, which was found in our study population. Higher incidence was seen by Verbov,¹³ who found an incidence of 13.5% for malignant skin tumours. Beauregard and Gilchrest have reported actinic keratoses in 17.7% and skin cancer in 4.4%.

f) Vascular Disorders

In this descriptive study, senile purpura was seen in 3 cases (1.5%) and pigmented purpuric dermatoses in 2 cases (1%).

In a study by Raveendra L, senile purpura was found in 14 cases (7%). In a study by Shashikant Dhumale, senile purpura was found in 61 cases (30.5%). Tindall and Smith have reported pigmented purpuric dermatoses in 31% of cases. Beauregard and Gilchrest¹⁵ observed senile purpura in 11.9%, while Patange and Fernandez¹⁶ found an incidence of 9% of senile purpura. Thus, occurrence of senile purpura and pigmented purpuric dermatoses in the present study is much

lower than that observed by others. The lower incidence of purpuric dermatoses and purpura in this study could be due to the difficulty in spotting purpuric changes in the racially pigmented skin of our study population.

g) Bullous Disorders

Among the various bullous disorders, only 4 cases of bullous pemphigoid (2%) and 3 cases of pemphigus vulgaris (1.5%) was seen.

In a study by Raveendra L,⁸ Bullous pemphigoid was found in 3 patients (1.5%). In a study by Talukdar K and Mitra D,⁷ Bullous pemphigoid was found in 8 patients (2.2%) and Pemphigus vulgaris in 2 cases (0.6%). Priya Cinna and Thappa¹⁷ found Pemphigus vulgaris in 9 cases (1.8%) and Bullous pemphigoid in 8 cases (1.6%). Findings were similar to Talukdar K and Mitra D for Bullous pemphigoid and with Priya Cinna and Thappa for Pemphigus vulgaris.

h) Psychocutaneous Dermatoses

In our descriptive study, 13 (6.5%) cases of psychocutaneous dermatoses was observed. Of which 10 (5%) cases had Lichen simplex chronicus and 3 (1.5%) cases had prurigo nodularis.

In a study by Jindal et al, Lichen simplex chronicus was found in 26 cases (1.9%). In a study by Talukdar K and Mitra D Prurigo nodularis was found in 2.8% and Lichen simplex chronicus in 8.6%. Our study is comparable to Talukdar K and Mitra D.

i) Miscellaneous Skin Conditions

In this descriptive study, Chronic Urticaria was seen in 4 cases (2%), Colloid milia in 3 cases (1.5%), 1 case (0.5%) of Parapsoriasis, 2 cases each of Lichen amyloidosis and Lichen sclerosis et atrophicus was seen. One case (0.5%) of Favre-Racouchot syndrome, 2 cases each of Reactive perforating collagenosis and Granuloma annulare, 3 cases of polymorphous light eruption, 1 case each of Pruritus ani, Pyogenic granuloma and Lupus profundus were seen. In a study by Talukdar K and Mitra D urticaria was found in 4.7% and in a study by Jindal et al it was found in 3%.

6. Hair Changes

Greying of hair was almost universal and seen in 150 cases (75%). Hair loss in elderly women in our study was mostly diffuse thinning of hair and was seen in 60% and androgenic alopecia in males was noticed in (67.2%).

In a study by Priya Cinna and Thappa,¹⁷ greying was seen in 97.2% males and 90.9% females. Diffuse hair thinning was seen in 67.24% males and androgenic alopecia was seen in 55.39% males. Patange¹⁶ observed male pattern baldness in 20 males and diffuse hair loss in 94 females in their study of 200 patients.

7. Nail Changes

In our descriptive study loss of lustre was the commonest finding and was seen in 102 cases (51%), vertical ridging was seen in 97 cases (48.5%) and was the second common nail change and onychomycosis was seen in 22 cases (11%).

In a study by Raveendra L vertical ridging was found in 47%, loss of lustre in 44% and onychomycosis in 7%. Priya Cinna and Thappa¹⁷ found that loss of lustre was the commonest nail change seen in 50.8%, vertical ridging was seen in 24% and onychomycosis in 22.5%. Patange and Fernandez observed loss of lustre in 20.5%. Grover and Narasimhalu¹⁹ observed loss of lustre in 64%, vertical ridging in 72.5% and onychomycosis in 12%.

The findings of loss of lustre of nails compares well with that of Priya Cinna and Thappa. Finding of onychomycosis compares well with Grover and Narasimhalu. Findings of vertical ridging compares well with Raveendra L.

- 53 cases (26.5%), commonest was exposure dermatitis seen in 10 cases (5%).
- In this descriptive study infections were seen in 67 cases (33.5%), of which fungal infections was seen in 32 cases (16%), bacterial infections was seen in 18 cases (9%) and viral infections in 17 cases (8.5%). No infestations were seen. Of the 32 cases of fungal infections, Dermatophytosis was seen in 25 cases (12.5%) and Candidiasis in 7 cases (3.5%). Among the bacterial infections, Cellulitis was seen in 8 cases (4%), Leprosy in 4 cases (2%), Furuncle in 3 cases (1.5%), Folliculitis in 2 cases (1%) and 1 case (0.5%) of Scrofuloderma was seen. Among viral infections, Herpes zoster was seen in 15 cases (7.5%) and viral warts in 2 cases (1%).
- In this descriptive study Psoriasis was seen in 10 cases (5%), Lichen planus in 4 cases (2%) and 1 case (0.5%) of Pityriasis rubra pilaris was seen.
- The most common benign skin tumour seen was Cherry angiomas 102 (51%) followed by Seborrheic keratosis in 84 cases (42%), Dermatitis papulosa nigra in 67 cases (33.5%), acrochordons in 53 (26.5%) cases, 1 case (0.5%) each of sebaceous cyst and syringoma.
- In this descriptive study 1 case of premalignant tumours were seen, which was Bowen's disease. Among the malignant condition, 2 cases of basal cell carcinoma and 1 case of squamous cell carcinoma was seen.
- In this descriptive study 7 cases of bullous disorders was seen, out of which 4 cases (2%) had Bullous pemphigoid, 3 cases (1.5%) had Pemphigus vulgaris.
- In this study 13 cases of Psychocutaneous disorders was seen, of which 10 (5%) cases had Lichen simplex chronicus and 3 (1.5%) cases had Prurigo nodularis.
- In this descriptive study, 3 cases (1.5%) had senile purpura and 2 (1%) cases of pigmented purpuric dermatoses was seen.
- 4 cases of drug reactions were seen, of which 2 had lichenoid drug eruption and 2 had drug reaction to ciprofloxacin.
- In this descriptive study, Chronic urticaria was seen in 4 cases (2%); 3 (1.5%) cases of Colloid milia, 1 case (0.5%) of Parapsoriasis, 2 cases each of Lichen amyloidosis and Lichen sclerosus et atrophicus were seen; 1 case (0.5%) each of Favre-Racouchot syndrome, 2 cases each of Reactive perforating collagenosis and Granuloma annulare, 3 cases of Polymorphous light eruption, 1 case each of Pruritus ani, Pyogenic granuloma and Lupus profundus were seen.

- Among the nail changes, loss of lustre was the commonest followed by vertical ridging in 102 cases (51%).
- In this descriptive study, greying of hair was one of the most common and was seen in 150 cases (75%). Out of 75 female patients diffuse hair loss was seen in 45 females (60%) and out of 125 males 84 (67.2%) cases had Androgenic alopecia.

CONCLUSION

- In our study, the commonest age group was 61 - 65 years.
- Majority of patients were males in this study.
- Majority of male patients were retired and majority of female patients were housewives.
- Diabetes mellitus was the commonest associated systemic disease.
- Generalised pruritus was most commonly associated with xerosis.
- Wrinkling was one of the commonest skin changes seen. Xerosis, senile lentiginos, senile comedones and IGH were the other senile skin changes.
- Various pathological skin diseases like eczemas, infections, benign tumours, malignant tumours, Papulosquamous diseases, psychocutaneous diseases, vascular conditions, bullous disorders and drug reactions were seen.
- Loss of lustre was the commonest nail change seen.
- Greying of hair was very commonly seen.

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