

CLINICAL STUDY OF CUTANEOUS MANIFESTATION OF GERIATRIC AGE GROUP

Sharath Kumar B. C¹, Kavya Raju Nayak²

¹Professor and HOD, Department of Dermatology, KIMS, Bangalore.

²Consultant Dermatologist, Department of Dermatology, Kaya Skin Clinic and Apollo Clinic, HSR Layout.

ABSTRACT

BACKGROUND

Due to the degenerative and metabolic changes occurring throughout the skin layers during the aging process, elderly people are vulnerable to a wide variety of dermatological conditions. 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 speciality, which requires special attention. With this background, the present study was undertaken. To describe the clinical pattern and epidemiological profile of cutaneous manifestation in elderly. To assess the relationship between the cutaneous findings and systemic diseases in elderly.

MATERIALS AND METHODS

This is a descriptive study done on a total of 200 patients aged above 60 years attending the OPD and IPD of Kempegowda Institute of Medical Sciences Hospital between June 2012 and November 2012. A detailed history was recorded and complete examination carried out. Relevant investigations were performed after obtaining informed consent.

RESULTS

Of a total of 200 patients aged above 60 years, maximum numbers of patients in this study belong to age group of 61 - 65 years (30%) and the mean age in the study is 71.3 years.

- 129 males (64.5%) and 71 females (35.5%). Male-to-Female ratio was 1.81:1.
- 94 cases (47%) had Associated Diseases. Diabetes Mellitus was the commonest associated disease (26.5%).
- 60 patients had generalised pruritus, of which 42 cases (21%) was associated with xerosis.
- Among the skin changes with aging wrinkling of the skin was seen in 184 cases (92%), Xerosis in 108 cases (54%), IGH in 60 cases (30%), Senile Lentiginosities in 31 cases (15.5%) and Senile Comedones in 15 cases (7.5%).
- Among the pathological conditions, eczematous conditions were seen in 51 cases (25.5%), commonest was exposure dermatitis seen in 10 cases (5%), infections were seen in 65 cases (32.5%) of which fungal infections was seen in 34 cases (17%), bacterial infections was seen in 14 cases (7%) and viral infections in 17 cases (8.5%). Psoriasis was seen in 7 cases (3.5%), Lichen planus in 3 cases (1.5%) and 1 case (0.5%) of Pityriasis rubra pilaris was seen. The most common benign skin tumour seen was Cherry angiomas (105, 52.5%). Among the malignant condition 2 cases each of Basal cell carcinoma and squamous cell carcinoma was seen, 8 cases of bullous disorders was seen out of which 4 cases (2%) had Bullous Pemphigoid, 10 cases (5%) of Psychocutaneous disorders was seen.

CONCLUSION

In our study, the commonest age group was 61 - 65 years. Majority of patients were males, 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 lentiginosities, senile comedones, 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.

KEYWORDS

Aging Skin, Geriatric.

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Corresponding Author:

Dr. Kavya Raju Nayak,

C/o. Shushrut Adigon,

#434, DSR,

Rainbow Heights Apartment,

Sector 2, 24th Main,

HSR Layout-560102.

E-mail: drkavyanayak@gmail.com

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BACKGROUND

Aging is a complex process that is due to accumulation of molecular damage over time.¹ Skin mirrors the first signs of natural aging, and the maintenance and improvement of its quality has gained particular attention.

Defining old – “Aging is a biological reality, which has its own dynamic beyond human control.” People aged 60+ years are generally referred to as older population.² Aging is progressive, time dependent deterioration of an organism’s structural or functional integrity and may be reflected in the ability of the organism to interact with and respond to its environment.



Both intrinsic aging (Genetic, chronological aging) and extrinsic aging (Environmental, photoaging) contribute to cutaneous aging.³ Aging skin has susceptibility to dermatologic disorders due to the structural and physiological changes that occur as a consequence of intrinsic and extrinsic aging.⁴

The common skin disorders prevalent in elderly are xerosis, pruritus, dermatoheliosis (Photoaging), 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.³ These dermatoses are further complicated by increased frequency of chronic systemic diseases with increasing age.

With 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 of 2001 and the number is likely to increase to 179 million in 2031 and further to 301 million in 2051.⁴ 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.²

MATERIALS AND METHODS

Source of Data and Number

- The study was carried on elderly, aged above 60 years attending Dermatology OPD as well as IPD at Kempegowda Institute of Medical Sciences, Bangalore.
- A total of 200 patients were included in the study.

Inclusion Criteria

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

Exclusion Criteria

- Onset of certain dermatological diseases before 60 years will not be included. Like patients with genodermatoses which interfere with aging skin, photosensitive genodermatoses, premature aging 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 (was done when required).

Dermatological Procedures

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

Statistics

A total of 200 cases with age above 60 years attending OPD and IPD of Kempegowda Institute of Medical Sciences were included in the study.

Age Groups	Number of Patients	Percentage (%)
61 - 65	60	30
66 - 70	55	28
71 - 75	40	20
76 - 80	24	12
80+	21	11
Grand Total	200	100

Table 1. Age Distribution

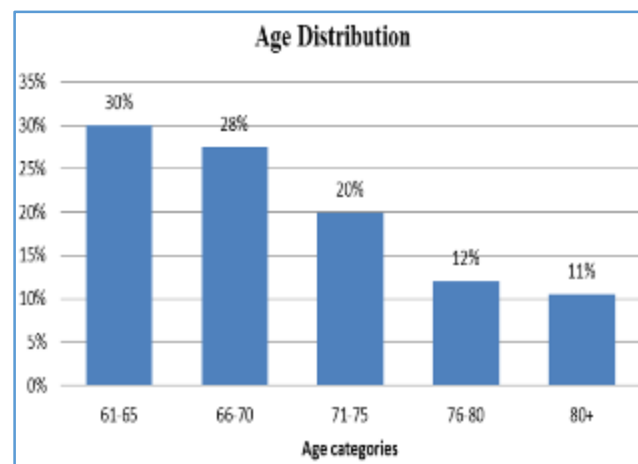


Figure 1. Age Distribution (N = 200)

Maximum number of patients in this study belongs to age group of 61 - 65 years (30%) followed by 66 - 70 years (28%). The eldest patient was of 93 years and the mean age in the study is 71.3 years.

Sex	Number of Patients	Percentage (%)
Female	71	35.5
Male	129	64.5
Grand Total	200	100

Table 2. Sex Distribution (N = 200)

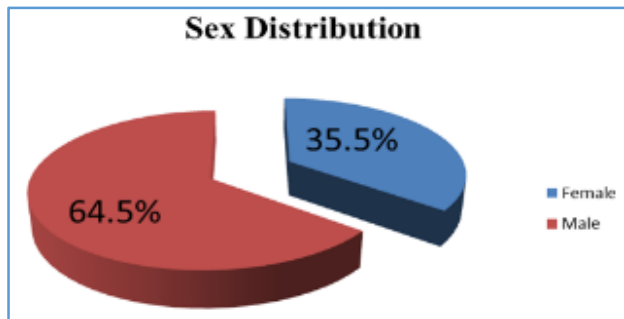


Figure 2. Sex Distribution

In this study of the 200 patients, there were 129 males (64.5%) and 71 females (35.5%). Male-to-Female ratio in the study was 1.81:1.

Type	Number of Patients	Percentage
Agricultural	25	12.5
Housewives	41	20.5
Retired	108	54.0
Business	26	13.0

Table 3. Occupation Distribution (N = 200)

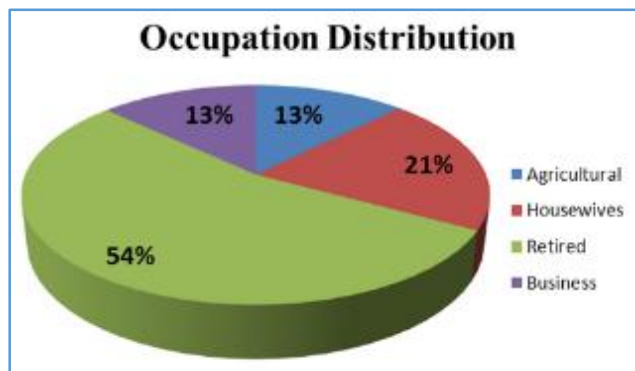


Figure 3. Occupation Distribution

Type	Female	Male	Total
Agricultural	8	17	25
Housewives	41	0	41
Retired	20	88	108
Business	2	24	26
Total	71	129	200

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

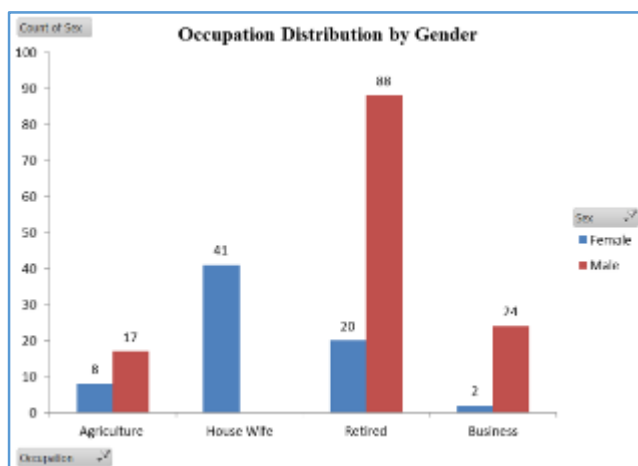


Figure 4. Occupation Distribution by Gender

In this study of the 200 patients, 108 were retired (54.0%) of which 20 were females and 88 were males; 25(12.5%) were agriculturists of which 17 were males and 8 were females; 41 females were housewives (20.5%); 26 (13%) patients were doing some business of which 2 were females and 24 were males. Thus, most male patients were retired and most of the female patients were housewives.

Associated Diseases	No. of Cases	Percentage (%)
Diabetes Mellitus	53	26.5
Hypertension	44	22.0
IHD	9	4.5
Anaemia	5	2.5
Benign Prostatic Hypertrophy	4	2.0
Hypothyroidism	3	1.5
Bronchial Asthma	2	1.0
Alcoholic Liver Disease	2	1.0
Carcinoma Cervix	1	0.5
HIV	1	0.5
Kidney Disease	1	0.5%
Rheumatoid Arthritis	1	0.5%
Peptic Ulcer	1	0.5%
COPD	1	0.5%

Table 5. Associated Diseases (N = 200)

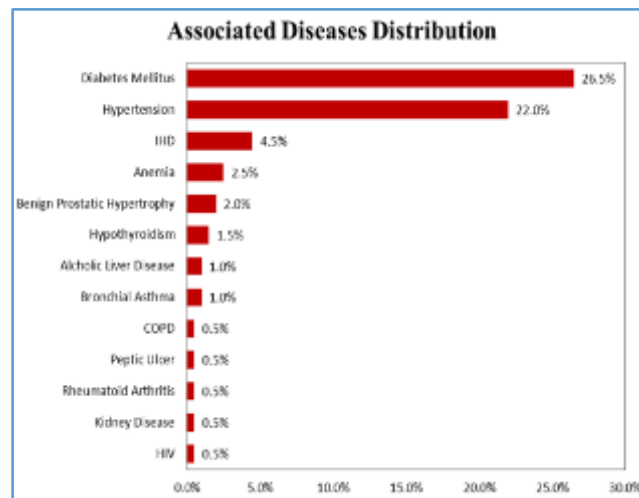


Figure 5. Associated Disease Conditions (N = 200)

Diabetes Mellitus was the commonest associated disease seen in 53 cases (26.5%) followed by Hypertension in 44 cases (22%), IHD in 9 cases (4.5%), Anaemia in 5 cases (2.5%), Benign Prostatic Hypertrophy in 4 cases (2.0%), Hypothyroidism in 3 cases (1.4%), Bronchial Asthma in 2 cases (1.0%), Alcoholic Liver Disease in 2 cases (1%), Carcinoma Cervix in 1 case (0.5%), HIV in 1 case (0.5%), Kidney Disease in 1 case (0.5%), Rheumatoid Arthritis in 1 case (0.5%), Peptic Ulcer in 1 case (0.5%) and COPD in 1 case (0.5%).

No.	Conditions Associated with GP	No. of Cases	Percentage (%)
1	Xerosis	42	21
2	Diabetes Mellitus	14	7
3	Anaemia	4	2
4	Hypothyroidism	3	3
5	Alcoholic Liver Disease	2	1
6	Kidney Disease	1	0.5
7	HIV	1	0.5

Table 6. Generalised Pruritus

In this study generalised pruritus was seen in 60 cases (30%), of which xerosis was associated with generalised pruritus in 42 cases (21%), Diabetes Mellitus was associated in 14 cases (7%), Anaemia in 4 cases (2%), Hypothyroidism in 3 (1.5%) cases, Alcoholic Liver Disease in 2 cases (1%), HIV and Kidney disease in 1 case each (0.5%). Thus, generalised pruritus was most commonly associated with xerosis in our study.

Skin Changes	Number of Patients	% of Total Patients
Wrinkles	184	92.0%
Xerosis	108	54.0%
IGH	60	30.0%
Senile Lentigines	31	15.5%
Senile Comedones	15	7.5%

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

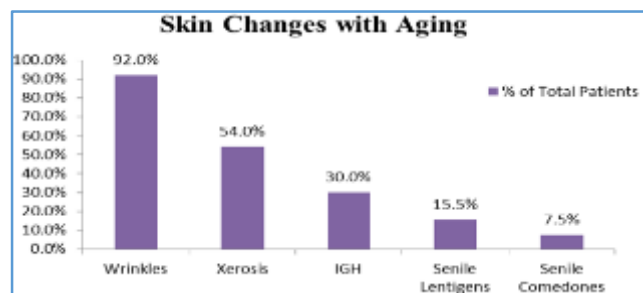


Figure 6. Skin Changes with Aging

In this study, wrinkling of the skin was one of the commonest finding and was seen in 184 cases (92%). Xerosis was seen in 108 cases (54%), IGH was seen in 60 cases (30%), Senile Lentigines was seen in 31 cases (15.5%) and Senile Comedones in 15 cases (7.5%).

Pathological Skin Changes

Type of Eczematous Conditions	No. of Cases	Percentage (%)
Exposure Dermatitis	10	5.0
Chronic Eczema	9	4.5
Contact Dermatitis	7	3.5
Stasis Eczema	6	3.0
Infectious Eczematous Dermatitis	5	2.5
Asteatotic Eczema	5	2.5
Seborrhoeic Dermatitis	2	1.0
Nummular Eczema	2	1.0%
Hand Eczema	2	1.0%
Follicular Eczema	2	1.0%
Foot Eczema	1	0.5%
Grand Total	51	25.5%

Table 8. Eczematous Conditions (N = 200)

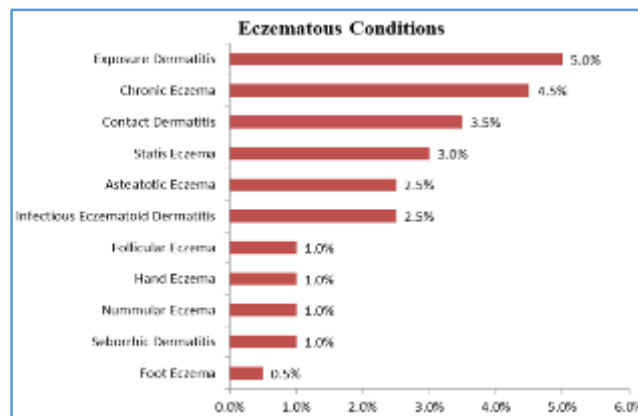


Figure 7. Eczematous Condition

In this study eczematous conditions were seen in 51 cases (25.5%), commonest was exposure Dermatitis seen in 10 cases (5%) followed by Chronic Eczema in 9 cases (4.5%), Contact Dermatitis in 7 cases (3.5%), Stasis Eczema in 6 cases (3%), Infectious Eczematous Dermatitis in 5 cases (2.5%), Asteatotic Eczema in 5 cases (2.5%), 2 (1%) cases each of Seborrhoeic Dermatitis, Nummular Eczema, Hand Eczema and Follicular Eczema; 1 (0.5%) case of Foot Eczema was seen.

Type of Infections	Sub-Type	No. of Cases	Percentage (%)
Fungal Infections	Fungal Total	34	17
	Dermatophytosis	29	14.5
	Candidiasis	5	2.5
Bacterial Infections	Bacterial Total	14	7.0
	Cellulitis	6	3.0
	Leprosy	3	1.5
	Furuncle	2	1.0
	Folliculitis	2	1.0
Viral Infections	Viral Total	17	8.5
	Herpes Zoster	13	6.5
	Viral Warts	4	2.0
Grand Total		65	32.5

Table 9. Types of Infection

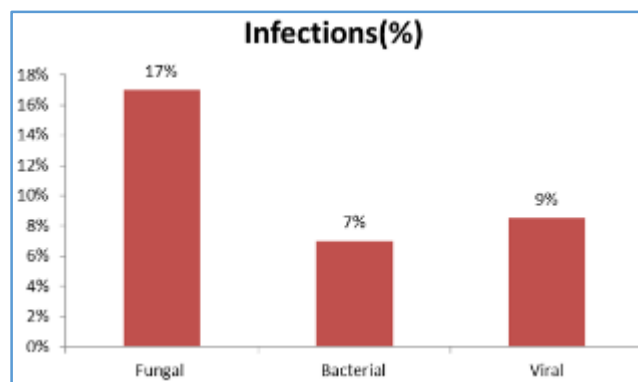


Figure 8. Types of Infection (N = 200)

In this study infections were seen in 65 cases (32.5%), of which fungal infections were seen in 34 cases (17%), bacterial infections were seen in 14 cases (7%) and viral infections in 17 cases (8.5%). No infestations were seen.

Of the 34 cases of fungal infections, Dermatophytosis was seen in 29 cases (14.5%) and Candidiasis in 5 cases (2.5%). Among the bacterial infections Cellulitis was seen in 6 cases (3%), Leprosy in 3 cases (1.5%), Furuncle in 2 cases (1%), Folliculitis in 2 cases (1%) and 1 case (0.5%) of Lupus Vulgaris was seen. Among viral infections, Herpes zoster was seen in 13 cases (6.5%) and viral warts in 4 cases (2%).

Types	No. of Cases	Percentage (%)
Psoriasis	7	3.5
Lichen Planus	3	1.5
Pityriasis Rubra Pilaris	1	0.5
Grand Total	11	5.5

Table 10. Papulosquamous Disorders (N = 200)

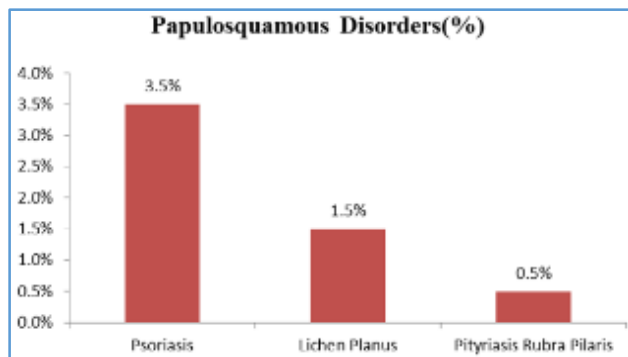


Figure 9. Papulosquamous Disorders

In this study Psoriasis was seen in 7 cases (3.5%), Lichen planus in 3 cases (1.5%) and 1 case (0.5%) of Pityriasis rubra pilaris was seen.

No .	Condition	No. of Cases	Percentage (%)
1	Cherry Angiomas	105	52.5
2	Seborrhoeic Keratosis	81	40.5
3	Dermatosis Papulosa Nigra	72	36.0
4	Acrochordons	50	25.0
5	Sebaceous Cysts	1	0.5
6	Angiokeratoma of Fordyce	1	0.5
7	Syringoma	1	0.5

Table 11. Benign Tumours of Skin

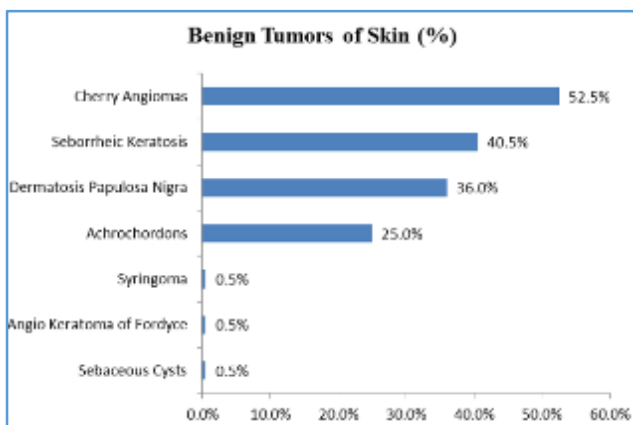


Figure 10. Benign Tumours of Skin

The most common benign skin tumour seen was Cherry angiomas (105, 52.5%) followed by Seborrhoeic Keratosis in 81 cases (40.5%), Dermatosis Papulosa Nigra in 72 cases (36%), acrochordons in 50 (25%) cases, 1 case (0.5%) each of Sebaceous cyst, Angiokeratoma of Fordyce and Syringoma.

Types	Sub-Type	No. of Cases	Percentage (%)
Pre-Malignant condition	Bowen's	1	0.5
Malignant Tumours	Basal Cell Carcinoma	2	1
	Squamous Cell Carcinoma	2	1
Grand Total		5	2.5

Table 12. Premalignant and Malignant Tumours

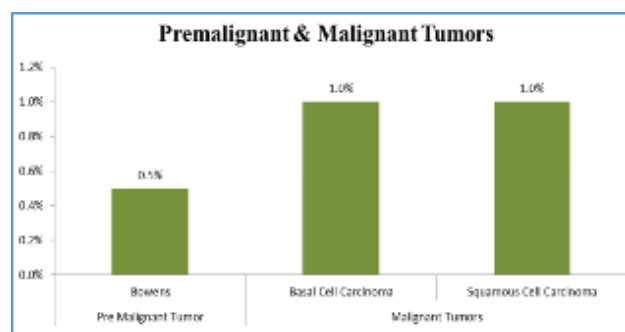


Figure 11. Premalignant & Malignant Tumours (N = 200)

In this study 1 case of premalignant tumours was seen, which was Bowen's disease. No actinic keratosis was seen. Among the malignant condition, 2 cases each of basal cell carcinoma and squamous cell carcinoma was seen. Of the two cases of squamous cell carcinoma, one case was cutaneous infiltration of squamous cell carcinoma with carcinoma cervix.

Types	No. of Cases	Percentage (%)
Bullous Pemphigoid	4	2.0%
Pemphigus Vulgaris	3	1.5%
Bullous Pyoderma Gangrenosum	1	0.5%
Grand Total	8	4.0%

Table 13. Bullous Disorders

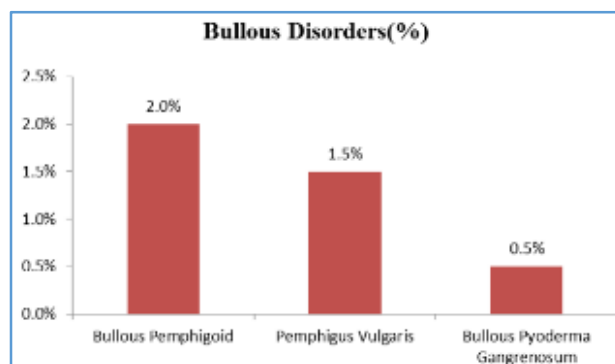


Figure 12. Bullous Disorders (N = 200)

In this study 8 cases of bullous disorders was seen, out of which 4 cases (2%) had Bullous Pemphigoid, 3 cases (1.5%)

had Pemphigus Vulgaris and 1 case of Bullous Pyoderma Gangrenosum was seen.

Types	No. of Cases	Percentage (%)
Lichen Simplex Chronicus	8	4.0%
Prurigo Nodularis	2	1.0%
Grand Total	10	5.0%

Table 14. Psychocutaneous Disorders

In this study 10 cases of Psychocutaneous disorders was seen, of which 8 (4%) cases had Lichen Simplex Chronicus and 2 (1%) cases had Prurigo Nodularis.

No.	Condition	No. of Cases	Percentage (%)
1	Senile Purpura	4	2.0%
2	Pigmented Purpuric Dermatoses	1	0.5%

Table 15. Vascular Disorders

In this study, 4 cases (2%) had senile purpura and 1 (0.5%) case of pigmented purpuric dermatoses was seen.

Drug Reactions in Elderly

In this study out of the 200 cases 3 cases had drug reactions, 2 cases had Lichenoid Drug Eruptions and 1 case of drug reaction to Ciprofloxacin.

No.	Condition	No. of Cases	Percentage (%)
1	Chronic Urticaria	5	2.5%
2	Colloid Milia	4	2.0%
3	Macular Amyloidosis	2	1.0%
4	Lichen Sclerosus Et Atrophicans	2	1.0%
5	Parapsoriasis	2	0.5%
6	Reactive Perforating Collagenosis	1	0.5%
7	Granuloma Annulare	1	0.5%
8	Favre-Racouchot Syndrome	1	2%
9	Polymorphous Light Eruptions	1	0.5%
10	Pruritus Ani	1	0.5%
11	Pyogenic Granuloma	1	0.5%
12	Lupus Profundus	1	0.5%

Table 16. Miscellaneous Conditions

In this study Chronic Urticaria was seen in 5 cases (2.5%), 2 cases (1%) each of Colloid Milia in 4 cases (2%). Parapsoriasis, Macular Amyloidosis and Lichen sclerosus et atrophicans was seen; 1 case (0.5%) each of Favre-Racouchot Syndrome, reactive perforating collagenosis, granuloma annulare, polymorphous light eruption, Pruritus ani, Pyogenic Granuloma and Lupus Profundus were seen.

No	Condition	No. of Cases	Percentage (%)
1	Loss of Luster	110	55.0%
2	Vertical Ridging	101	50.5%
3	Onychorrhexis	60	30.0%
4	Thickening	36	18.0%
5	Onychomycosis	19	9.5%
6	Thinning	12	6.0%
7	Subungual Hyperkeratosis	10	5.0%
8	Platyonychia	10	5.0%
9	Koilonychia	6	3.0%
10	Beau's Lines	5	2.5%
11	Pitting	4	2.0%

Table 17. Nail Changes in Elderly

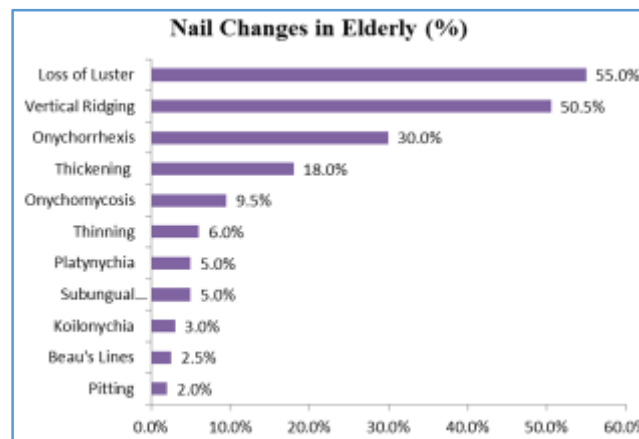


Figure 13. Nail Changes in Elderly (N = 200)

In this study among the nail changes, loss of luster was the commonest followed by vertical ridging in 101 cases (50.5%), Onychorrhexis in 60 cases (30%), Onychomycosis in 38 cases (19%), Thickening in 36 cases (19%), Thinning in 12 cases (6%), Subungual Hyperkeratosis in 10 cases (5%), Platyonychia in 10 cases (5%), Koilonychia in 6 cases (3%), Beau's Lines in 5 cases (2.5%) and Pitting in 4 cases (2%).

Hair Changes in Elderly

In this study, greying of hair was one of the most common and was seen in 190 cases (95%). Out of 71 female patients diffuse hair loss was seen in 51 females (71.8%) and out of 129 males 81 (62.8%) cases had Androgenic alopecia.

No.	Condition	No. of Cases	Males/ Females	Percentage (%)
1	Diffuse Hair Loss in Females	51	71	71.8%
2	Androgenic Alopecia in Males	81	129	62.8%

Table 18

RESULTS

- In this study a total of 200 patients aged above 60 years attending the OPD and IPD of Kempegowda Institute of Medical Sciences were included.

- Maximum number of patients in this study belong to age group of 61-65 years (30%) followed by 66 - 70 years (28%). The eldest patient was of 93 years and the mean age in the study is 71.3 years.
- In this study of the 200 patients, there were 129 males (64.5%) and 71 females (35.5%). Male-to-Female ratio in the study was 1.81:1.
- Most of the males were retired 108 cases (54%) and most of the female patients were housewives.
- Out of 200 cases, 94 cases (47%) had Associated Diseases. Diabetes Mellitus was the commonest associated disease seen in 53 cases (26.5%) followed by Hypertension in 44 cases (22%),
- 60 patients had generalised pruritus, of which 42 cases (21%) was associated with xerosis.
- Wrinkling of the skin was one of the commonest finding and was seen in 184 cases (92%). Xerosis was seen in 108 cases (54%), IGH was seen in 60 cases (30%), Senile Lentiginosities was seen in 31 cases (15.5%) and Senile Comedones in 15 cases (7.5%).
- Among the pathological conditions, eczematous conditions were seen in 51 cases (25.5%), commonest was exposure dermatitis seen in 10 cases (5%).
- In this study infections were seen in 65 cases (32.5%), of which fungal infections was seen in 34 cases (17%), bacterial infections was seen in 14 cases (7%) and viral infections in 17 cases (8.5%). No infestations were seen. Of the 34 cases of fungal infections, dermatophytosis was seen in 29 cases (14.5%) and Candidiasis in 5 cases (2.5%). Among the bacterial infections Cellulitis was seen in 6 cases (3%), Leprosy in 3 cases (1.5%), Furuncle in 2 cases (1%), Folliculitis in 2 cases (1%) and 1 case (0.5%) of lupus vulgaris was seen. Among viral infections, Herpes zoster was seen in 13 cases (6.5%) and viral warts in 4 cases (2%).
- In this study Psoriasis was seen in 7 cases (3.5%), Lichen planus in 3 cases (1.5%) and 1 case (0.5%) of Pityriasis rubra pilaris was seen.
- The most common benign skin tumour seen was Cherry angiomas (105, 52.5%) followed by Seborrheic Keratosis in 81 cases (40.5%), Dermatitis Papulosa Nigra in 72 cases (36%), acrochordons in 50 (25%) cases, 1 case (0.5%) each of Sebaceous cyst, Angiokeratoma of Fordyce and Syringoma.
- In this study 1 case of premalignant tumours were seen, which was Bowen's disease. No actinic keratosis was seen. Among the malignant condition, 2 cases each of basal cell carcinoma and squamous cell carcinoma was seen.
- In this study 8 cases of bullous disorders was seen, out of which 4 cases (2%) had Bullous Pemphigoid, 3 cases (1.5%) had Pemphigus Vulgaris and 1 case of Bullous Pyoderma Gangrenosum was seen.
- In this study 10 cases of Psychocutaneous disorders was seen, of which 8 (4%) cases had Lichen Simplex Chronicus and 2 (1%) cases had Prurigo Nodularis.
- In this study, 4 cases (2%) had senile purpura and 1 (0.5%) case of pigmented purpuric dermatoses was seen.
- Three cases of drug reactions was seen, of which 2 had lichenoid drug eruption and 1 had drug reaction to ciprofloxacin.

- In this study, Chronic Urticaria was seen in 5 cases (2.5%); 2 cases (1%) each of Parapsoriasis, Macular Amyloidosis and Lichen sclerosus et atrophicans was seen; 1 case (0.5%) each of Favre-Racouchot Syndrome, reactive perforating collagenosis, Granuloma annulare, Colloid milia, polymorphous light eruption, Pruritus ani, Pyogenic Granuloma and Lupus Profundus were seen.
- In this study, among the nail changes loss of luster was the commonest followed by vertical ridging in 101 cases (50.5%).
- In this study, greying of hair was one of the most common and was seen in 190 cases (95%). Out of 71 female patients, diffuse hair loss was seen in 51 females (71.8%) and out of 129 males, 81 (62.8%) cases had Androgenic alopecia.

DISCUSSION

Aging is progressive, time dependent deterioration of an organism's structural or functional integrity and may be reflected in the ability of the organism to interact with and respond to its environment. Both intrinsic aging (Genetic, chronological aging) and extrinsic aging (environmental, photoaging) contribute to cutaneous aging.³ Aging skin has susceptibility to dermatologic disorders due to the structural and physiological changes that occur as a consequence of intrinsic and extrinsic aging.⁴

Number of Cases in Relation to Age and Sex

In this study, a total of 200 patients varying in age from 61 - 93 years were examined. Of these, 129 patients (64.5%) were males and 71 (35.5%) were females. The eldest patient was 93 years of age. Mean age was 71.35 years.

Droller made a study on random cases of 476 individuals in their homes. Out of this 192 were men and 284 were women; all patients between 60 to 90 years of age.⁵ Tindall and Smith⁶ studied 163 volunteers in their homes, all above 64 years of age. Verbov⁷ examined 170 consecutive patients aged 60 to 90 years in an OPD. Weismann et al⁸ studied 494 residents of a Danish home for the aged between 55 and 106 yrs. of age. Beaugard and Gilchrest⁹ studied 68 patients aged between 50 - 91 years, recruited from 11 subsidised housing projects, of which 88.2% were females. Patange and Fernandez¹⁰ studied 200 cases in an ODP setting, aged 55 - 85 years of age, out of which 63% were males and 37% were females. In this study, males outnumber females by 5.31:1. 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.¹¹ 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.

Associated Conditions

In this study, 94 patients (47%) had associated systemic illnesses. Some patients had more than one systemic illness. Diabetes mellitus was the commonest association seen in 53 cases (26.5%) followed by hypertension (22%).

In a study by Priya Cinna and Thappa, Diabetes (28.9%) and Hypertension (25.5%) were the commonest associated condition,¹¹ which was similar to our study. Beaugard and Gilchrest 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.¹¹

Symptomatology

In our study generalised pruritus was seen in 60 cases (30%), of which xerosis was associated with generalised pruritus in 42 cases (21%), Diabetes Mellitus was associated in 14 cases (7%), Anaemia in 4 cases (2%), Hypothyroidism in 3 (1.5%) cases, Alcoholic Liver Disease in 2 cases (1%), HIV and Kidney disease in 1 case each (0.5%). Thus, generalised pruritus was most commonly associated with xerosis in our study.

Droller does not mention complaints of patients separately, but noticed generalised pruritus in 29.7% males and 29.2% females.⁶ Beauregard and Gilchrest^[12] found skin complaints in 66.2% patients. Pruritus was the commonest, seen in 29%. Patange and Fernandez^[1] observed pruritus in 78.5% patients. Out of this 91% were associated with cutaneous dermatoses, 5.1% with systemic disorders and 3.8% were cases of senile pruritus without underlying skin or systemic disease. The incidence of pruritus in this study [79.2%] is comparable to that seen by Patange and Fernandez [78.5%].

Skin Changes with Aging

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. In this study, the following have been considered physiological changes: Wrinkling, atrophy of skin, xerosis, senile lentiginos, idiopathic guttate hypomelanosis and dermatoheliosis - a combination of skin changes due to actinic damage.

- a) **Wrinkling** - This was a common finding in the study and noticed in 184 patients [92%]. This is comparable with the findings of Grover and Narasimhalu [191 (95.5%)].¹³ Priya Cinna and Thappa found in 100%, Tindall and Smith [94%] and Beauregard and Gilchrest [95.6%]. Patange and Fernandez do not mention the incidence of wrinkling.¹¹ Most of the wrinkling seen in this study was on sun exposed areas like the face, neck, forearms and dorsa of hands.
- b) **Xerosis** - Xerosis literally means dry skin. When associated with eczematous changes, it is called asteatotic eczema. In this study, Xerosis was seen in 108 patients [54%]. Tindall and Smith⁷ reported an incidence of xerosis in 77%, while Beauregard and Gilchrest found it to be 85% of patients. Patange and Fernandez¹¹ have reported this finding in 9%. Chopra et al found in 108 (50.8%) cases.¹⁴ Our study shows similar results as that seen by Chopra et al, but lower incidence of xerosis in this study as compared to those by Tindall and Smith and Beauregard 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 Lentiginos** - The incidence of senile lentiginos in this study was found in 31 cases [16.5%]. Tindall Smith⁷ reported an incidence of 51%. Beauregard and Gilchrest¹⁰ reported senile lentiginos in 70.6%. Patange and Fernandez¹¹ found an incidence of 12%. The incidence of senile lentiginos in this study is comparable to that of Patange and Fernandez, which was carried out on a similar ethnic population. Racial influence on colour of skin could be the cause for lesser incidence of senile lentiginos seen in our Indian population as compared to

the Western fair skinned individuals, who are more prone to senile lentiginos.

- d) **Idiopathic Guttate Hypomelanosis** - Idiopathic guttate hypomelanosis in our study was seen in 30% [60 cases]. This finding was similar to that observed by Priya Cinna and Thappa 26% (130),¹² Beauregard and Gilchrest¹⁰ reported an incidence of 24.4% and Patange and Fernandez found it in 24.5% (49). Most lesions were seen in sun protected areas of skin.
- e) **Senile Comedones** - Dermatoheliosis is a combination of skin changes produced by solar damage and consists of senile comedones, irregular pigmentation, wrinkling, scaling actinic keratoses, elastosis and malignancy. Senile comedones commonly represent solar damage and in this study they represent dermatoheliosis. An incidence of 15 cases [7.5%] of senile comedones (represented by dermatoheliosis) was found in this study, which was comparable to that observed by Grover and Narasimhalu¹³ (13, 6.5%) and in study by Priya Cinna and Thappa observed in 23 (4.6%) individuals. The sites where signs of senile comedones was seen were periorbital, medial infraorbital regions, cheeks, nose and forehead.

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, pigmentary disorders, benign skin tumours, premalignant and malignant skin tumours, vascular disorders, bullous disorders, psychocutaneous disorders and miscellaneous skin changes.

- a) **Papulosquamous Disorders** - In this study, psoriasis was seen in 7 cases [3.5%]. Tindall and Smith found psoriasis in 1% of cases. Beauregard and Gilchrest¹⁰ mention an incidence of 2.9%, while Patange and Fernandez¹¹ found it in 10.5%. This study compares well with that of Beauregard and Gilchrest.

An incidence of 3 cases [1.5%] of lichen planus and cases of lichenoid drug eruptions was also seen in this study. Other studies have not mentioned this condition.

One case of Pityriasis Rubra Pilaris was seen [0.5%].

- b) **Eczematous Conditions** - In our study, eczema was found in 50 cases (25%). Contact Dermatitis was found in 7 cases (3.5%), exposure dermatitis in 10 cases (5%), stasis eczema in 6 cases (3%), seborrhoeic dermatitis in 6 cases (3%), asteatotic eczema in 5 cases (2.5%) and infective eczematous dermatitis in 5 cases (2.5%).

Priya Cinna and Thappa found an incidence of eczema in 24.2% (121) similar to that seen in our study. Verbov reported an incidence of 24.7% with 10% having allergic contact dermatitis. Weismann⁹ reported seborrhoeic dermatitis in 7%, stasis dermatitis in 6.9% and contact dermatitis in 3.8%.

Johnson reported seborrhoeic dermatitis in 3.6%, contact dermatitis in 2% and eczema in 1.8%. Beauregard and Gilchrest reported contact dermatitis in 11.8%, seborrhoeic dermatitis in 10.5% and stasis dermatitis in 5.9%. Patange and Fernandez¹¹ found contact dermatitis in 7.5% and lichen simplex chronicus in 12%.

The incidence of contact dermatitis compares well with that of Weismann. While the incidence of seborrhoeic dermatitis compares well with the findings of Johnson. And

incidence of stasis eczema was similar to that of Beaugard and Gilchrest.

c) Infective Conditions and Infestations - In this study infective conditions were seen in 62 (31%) cases, fungal infections were seen in 34 (17%) cases, viral infections in 17 (8.5%) cases and bacterial infections in 14 (7%).

Dermatophytosis was seen in 29 cases (14.5%), Candidal infections in 5 cases (2.5%). Among bacterial infections 3 cases of leprosy, 2 cases of furuncle, 2 cases of bacterial folliculitis and 6 cases of cellulitis was seen. Among viral infections, 13 (6.5%) cases of Herpes Zoster of which 7 had post-herpetic neuralgia and 4 (2%) cases of viral warts were seen.

Tindall and Smith⁷ reported dermatophytosis in 79%, but not the incidence of other infections. Johnson reported an incidence of 12.7% for dermatophytoses. Beaugard and Gilchrest found dermatophytoses 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 Thappa 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 the observations of Patange and Fernandez, the incidence of dermatophyte infections in our study is similar to that seen by Beaugard and Gilchrest and by Patange and Fernandez.

d) Benign Tumours of the Skin - In our study, seborrhoeic keratosis was seen in 81 (40.5%) cases. Cherry angiomas was seen in 105 (52.5%) cases, Dermatoses papulosa nigra was seen in 72 cases (36%), Acrochordons was seen in 50 cases (25%).

Priya Cinna and Thappa found seborrhoeic keratosis in 253 (50.6%) cases and Cherry angioma in 36 (7.2%) cases and acrochordons in 49%. Grover and Narasimhalu found Seborrhoeic Keratosis in 43% and Cherry angioma in 63%.

Tindall and Smith found seborrhoeic keratoses in 88% of cases and cherry angiomas in 75% of cases. Beaugard and Gilchrest¹⁰ observed seborrhoeic keratoses in 61.2% and cherry angiomas in 53.7 cases. They also report 58.8% incidence of dermatosis papulosa nigra. Plantae found Cherry angioma in 46.5% seborrhoeic keratoses in 37.5%, melanocytic nevi in 32.5% and acrochordons in 24.5% of cases.

The findings in this study are comparable with that of Beaugard and Gilchrest for cherry angioma. Finding of seborrhoeic keratosis in this study compares well with that of Grover and Narasimhalu and that of acrochordons is similar to that observed by Patange.

e) Premalignant and Malignant Tumours - One case of Bowen's disease were seen in the study. Actinic keratosis was not observed in our study. Actinic keratosis has been frequently reported in studies done in Western countries. Beaugard et al study, the percentage of actinic keratosis was 17.7% and that by Cvitanovic¹⁵ et al was 22.38%. Priya Cinna and Thappa did not observe actinic keratosis in their study similar to our study. In our study actinic keratosis was not observed because of skin type IV/V, which is photoprotective; 4 (2%) malignant tumours were encountered in our study, of which 2 were

Squamous cell carcinoma and 2 were Basal cell carcinoma.

Priya Cinna and Thappa 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, found an incidence of 13.5% for malignant skin tumours; Beaugard and Gilchrest have reported actinic keratoses in 17.7% and skin cancer in 4.4%.

f) Vascular Disorders - In this study, senile purpura was seen in 4 cases (2%) and pigmented purpuric dermatoses in 1 case (0.5%).

Tindall and Smith have reported pigmented purpuric dermatoses in 31% of cases. Beaugard and Gilchrest¹⁰ observed senile purpura in 11.9%, while Patange and Fernandez found an incidence of 9% of senile purpura. Thus, occurrence of senile purpura and pigmented purpuric dermatoses in the present study in 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. One case of Bullous Pyoderma Gangrenosum.

Priya Cinna and Thappa¹² found Pemphigus vulgaris in 9 cases (1.8%) and Bullous Pemphigoid in 8 cases (1.6%); findings were similar to that seen in our study.

h) Psychocutaneous Dermatoses - In our study 10 (5%) cases of psychocutaneous dermatoses was observed, of which 8 (4%) cases had Lichen simplex chronicus and 2 (1%) cases had prurigo nodularis.

i) Miscellaneous Skin Conditions - In this study, Chronic Urticaria was seen in 5 cases (2.5%); 2 cases (1%) each of Parapsoriasis, Macular Amyloidosis and Lichen sclerosus et atrophicus was seen; 1 case (0.5%) each of Favre-Racouchot Syndrome, reactive perforating collagenosis, granuloma annulare, colloid milia, polymorphous light eruption, pruritus ani, pyogenic granuloma and lupus profundus were seen. Other studies do not mention their incidences.

Hair Changes

Greying of hair was almost universal and seen in 190 cases (95%). Hair loss in elderly women in our study was mostly diffuse thinning of hair, was seen in 72% (114 cases) and androgenic alopecia in males was noticed in 125 cases (62.5%).

In study by Priya Cinna and Thappa,¹² 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. Pantage observed male pattern baldness in 20 males and diffuse hair loss in 94 females in their study of 200 patients.

Nail Changes

In our study loss of luster was the commonest finding seen in 110 cases (55%), vertical ridgings was seen in 101 cases

(50.5%) and was the second common nail change. Onychomycosis was seen in 38 cases (19%).

Priya Cinna and Thappa¹² found that loss of luster was the commonest nail change seen in 50.8%, vertical ridging was seen in 24% and onychomycosis in 22.5%. Pantage and Fernandez observed loss of luster in 20.5%. Grover and Narasimhalu¹³ observed loss of luster in 64%, vertical ridging in 72.5% and onychomycosis in 12%.

The findings of loss of luster of nails compares well with that of Priya Cinna and Thappa. Finding of Onychomycosis compares well with Grover and Narasimhalu.

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