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Original Article

The Prevalence of the Geriatric Dermatoses Among Elderly Patients Attending Dermatology Outpatient Clinic in Eskisehir, Turkey

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Keywords: Elderly; epidemiology, geriatric dermatology; skin diseases.

ABSTRACT

Objective: The aim of this study is to determine the prevalence of skin diseases among geriatric patients in Eskisehir, Turkey.

Methods: This is a retrospective, cross-sectional study. The medical record of the outpatient clinics of dermatology was retrospectively assessed. Patients who were over 65 years old and attended the dermatology outpatient's clinic between January 2017 and December 2017 were included in the study.

Results: A total of 7.722 patients were included in the study and 3,666 (47.5%) patients were male and 4.056 (52.5%) patients were female. The ten most frequent diagnoses and their prevalence were: contact dermatitis (15.2%), xerosis (13.8%), pruritus (11.2%), seborrhoeic keratosis (5.8%), onychomycosis (5.3%), seborrhoeic dermatitis (5.2%), tinea pedis (5.2%), corn and callus (4.6%), urticaria (4.0%), actinic keratosis (3.0%), and pyoderma (3.0%), respectively.

Conclusion: Most of these geriatric skin diseases are preventable or treatable. Raising the general level of awareness is important about these common geriatric dermatoses. Further epidemiological studies are needed in order to reveal the prevalence of geriatric skin diseases.

INTRODUCTION

The number and ratio of elderly population has been increasing as developing and developed countries in Turkey. It is not surprising that the aging rate of the populace will steadily increase in the near future.[1–3] The geriatric population is estimated to reach to 10.2% in Turkey, in 2020. [2] Elderly patients over 65 years of age are important part of the dermatology outpatient clinic. However, there are limited studies on the prevalence, and the age and gender distribution of skin diseases in the elderly population.

During aging, functional and structural changes of skin system are observed. Due to these changes, skin disorders are more commonly seen in the elderly population. Moreover, the prevalence of skin diseases in elderly population is different from children and adult populations depending on these factors.[2,3] The prevalence of skin diseases in geriatric patients is very important in planning preventive and therapeutic healthcare services. Information on the prevalence of skin disorders in geriatric patients is limited. This research article was the first prevalence study in the geriatric patients in Eskisehir, Turkey. We aimed to clarify the prevalence of skin disorders among geriatric patients in Eskisehir, Turkey.

MATERIAL AND METHODS

This is a cross sectional retrospective study. The medical records of the outpatient clinics of Dermatology were retrospectively assessed. Elderly patients who attended the dermatology outpatient clinics between January 2017 and December 2017 were included in the study.

This was a retrospective study therefore no ethics committee approval was taken. Written informed consent could not be obtained from the patients due to retrospective design of the study.

The exclusion criteria were age < 65 years, or with inadequate data, or without a definite diagnosis. In order the find accurate prevalence, only patients attending the clinic for the first time were included in the study and repeat referrals were excluded from the study as previous studies.[1,3–6] Patient 65 years old and older were included to study.

A total of 30,001 applications were recorded at the dermatology outpatient's clinic. Of the 30,001 patients, 7,722 (25.7%) were new geriatric patients who were 65 years old and over.

The patients were divided into three groups according to age as follows: the 65–74 age group (Group I), the 75–84 age group (Group II), and the over-85 age group (Group III).

The patients were diagnosed based on clinical features and anamnesis and confirmed by skin biopsy or laboratory tests (e.g. fungal direct examination) when indicated. The International Classification of Diseases (ICD-10) was used in order to classify the diagnoses.

Statistical analyses were carried out by the using Statistical Package for the Social Sciences (SPSS 15.0 Statistical software, SPSS Inc., Chicago, IL, USA). Data were presented as percentages. The calculated values are given as the mean values ± standard deviation (SD). The Chi-square test was used to compare between group differences and correlations. A p value <0.05 was considered to be statistically significant.

RESULTS

Of 7,722 patients, 3.666 (47.5%) were male and 4.056 (52.5%) were female. Mean age of the patients was 72.82±6.22 years (the age range 65–101 years). Mean age of the female patients was 73.15±6.45 years (the age range 65-95 years). In the male patients, it was 72.53±6.01 years (the age range 65–101 years). Male to female ratio was 0.90. There was statistically no significant difference between sex and age (p=0.896).

Of 7.722 patients, 5,094 (65.9%) were in the Group I, 2.262 (29.9%) were in the Group II, and 366 (4.7%) were in the Group III.

Of 7.722 patients, 1,536 (19.9%) patients were diagnosed with more than one skin disease. A total of 113 skin diseases were recorded.

The ten most frequent diagnoses in the elderly patients and their prevalence were: contact dermatitis (n=1380; 15.2%), xerosis (n=1254; 13.8%), pruritus (n=1014; 11.2%), seborrhoeic keratosis (n=522; 5.8%), onychomycosis (n=480; 5.3%), seborrhoeic dermatitis (n=468; 5.2%), tinea pedis (n=468; 5.2%), corn and callus (n=420; 4.6%), urticaria (n=360; 4.0%), actinic keratosis (n=276; 3.0%), and pyoderma (n=270; 3.0%), respectively. Age distribution of the most common twenty skin diseases according to gender is represented in Table 1.

The most frequent types of eczematous dermatitis (n=2049; 26.5%) were contact dermatitis (n=1380; 15.2%), seborrhoeic dermatitis (n=468; 5.8%), nummular dermatitis (n=78; 1.0%), lichen simplex chronicus (n=120; 1.3%), atopic dermatitis (n=3; 0.03%), respectively.

The commonly seen fungal infections (n=1184; 15.3%) were onychomycosis (n=480; 5.3%), tinea pedis (n=468; 5.2%), intertrigo (n=162; 2.1%), tinea cruris (n=25; 0.3%), pityriasis versicolor (n=24; 0.3%) tinea corporis (n=13; 0.2%), candidiasis (n=12; 0.2%), respectively.

The most frequent viral infections (n=468; 6.0%) were herpes zoster (n=252; 2.8%), warts (n=180; 2.0%) herpes simplex virus infection (n=36; 0.5%), respectively.

Table 1. The distribution of the most common 20 diseases according to gender

No	Disease	Gender					
		Male		Female		Total	
		n	%	n	%	n	%
1	Contact dermatitis	783	8.6	587	6.5	1380	15.2
2	Xerosis	211	2.3	1043	11.5	1254	13.8
3	Pruritus	456	5.0	558	6.2	1014	11.2
4	Seborrhoeic keratosis	217	2.4	305	3.4	522	5.8
5	Onychomycosis	247	2.7	233	2.6	480	5.3
6	Seborrhoeic dermatitis	265	2.9	203	2.2	468	5.2
7	Tinea pedis	247	2.7	221	2.4	468	5.2
8	Corn and callus	197	2.2	223	2.5	420	4.6
9	Urticaria	169	1.9	191	2.1	360	4.0
10	Actinic keratosis	123	1.4	153	1.7	276	3.0
11	Pyoderma	131	1.4	139	1.5	270	3.0
12	Herpes Zoster	78	0.9	114	1.3	252	2.8
13	Psoriasis vulgaris	67	0.7	143	1.6	210	2.3
14	Rosacea	48	0.5	96	1.1	192	2.1
15	Viral warts	103	1.1	77	0.9	180	2.0
16	Intertrigo	78	0.9	84	0.9	162	1.8
17	Lichen simplex chronicus	54	0.6	66	0.7	120	1.3
18	Melanocytic naevi	24	0.3	90	1.0	114	1.3
19	Impetigo	36	0.4	66	0.7	102	1.1
20	Nummular eczama	54	0.6	24	0.3	78	0.9

The frequently seen bacterial infections (n=461; 5.9%) were pyoderma (n=270; 3.0%), impetigo (n=102; 1.3%), cellulitis (n=72; 0.9%), erythrasma (n=17; 0.2%) respectively.

There were statistically significant differences between female and male for rosacea and urticaria (p<0.05 for all). Males showed a greater susceptibility to xerosis and rosacea. There was no statistical difference for other skin diseases (p>0.05 for all).

The distribution (%) of skin diseases were similar in the three groups, except for a higher percentage of contact dermatitis, callus, and seborrhoeic dermatitis in Group I (18.5%, 6.6%, and 6.2%, respectively) than in Group II (2.4%, 0.6%, and 0.8%, respectively) and Group III (14.8%, 3.6%, and 4.9%, respectively). The proportion of actinic keratosis was higher in group III (4.9%) than in Group I and Group II (3.2% and 0.8%, respectively). The percentages of pruritus were 11.6% in Group I, and 3.2% in Group II, and 19.7% in Groups III.

There were some differences in the prevalence of the commonly encountered skin diseases among age groups.

I) Among 5,094 cases, in the Group I, the top ten skin disorders were, in descending order of prevalence, contact

Table 2. Age distribution of the most common ten skin disease

No	Disease	Age groups						Total
		Group I (65–74 year) n=5.094		Group II (75–84 year) n=2.262		Group III (>85 year) n=366		
		n	%	n	%	n	%	
1	Contact dermatitis	941	10.4	385	4.3	54	0.6	1380
2	Xerosis	827	9.1	374	4.1	53	0.6	1254
3	Pruritus	589	6.5	353	3.9	72	0.8	1014
4	Seborrhoeic keratosis	336	3.7	119	1.3	31	0.3	522
5	Onychomycosis	323	3.6	144	1.6	13	0.1	480
6	Seborrhoeic dermatitis	317	3.5	123	1.4	18	0.2	468
7	Tinea pedis	275	3.0	174	1.9	19	0.2	468
8	Corn and callus	336	3.7	71	0.8	13	0.1	420
9	Urticaria	241	2.7	83	0.9	36	0.4	360
10	Actinic keratosis	163	1.8	95	1.0	18	0.2	276

dermatitis (n=941; 12.2%), xerosis (n=827; 10.7%), pruritus (n=589; 7.6%), corn and callus (n=336; 4.4%), seborrhoeic keratosis (n=336; 4.4%), onychomycosis (n=323; 4.2%), seborrhoeic dermatitis (n=317; 4.1%), tinea pedis (n=275; 3.6%), urticaria (n=241; 3.1%), and psoriasis (n=179; 2.3%), respectively.

II) In the Group II (n=2.262; 29.3%), contact dermatitis (n=385; 4.9%) was the most prevalent dermatoses, followed by xerosis (n=374; 4.8%), pruritus (n=353; 4.5%), pyoderma (n=270; 3.5%), tinea pedis (n=174; 2.3%), onychomycosis (n=144; 1.9%), seborrhoeic dermatitis (n=123; 1.6%), seborrhoeic keratosis (n=119; 1.5%), actinic keratosis (n=95; 1.2%), urticaria (n=83; 1.1%), respectively.

III) In the Group III (n=366), the most frequent diagnoses were: pruritus (n=72; 0.9%), contact dermatitis (n=54; 0.7%), xerosis (n=53; 0.7%), urticaria (n=36; 0.5%), seborrhoeic keratosis (n=31; 0.4%), tinea pedis (n=19; 0.2%), actinic keratosis (n=18; 0.2%), seborrhoeic dermatitis (n=18; 0.2%), corn and callus (n=13; 0.2%), and herpes zoster (n=12; 0.2%), respectively.

The rate and frequencies of the geriatric dermatoses in Group I, Group II and Group III are represented in Table 2.

DISCUSSION

The number and ratio of elderly population has been increasing as developing and developed countries.[2,5] In Turkey, according to State Institution of Statistics, the population is getting older, with a growing percentage of population in the over-65 age group. The geriatric population is estimated to reach to 10.2% in 2020 and 20.8% in 2050, in Turkey.[1]

This will result in more elderly patients attending dermatology clinics.[5] The rapid demographic shift has created challenges for the health-care system. Elderly patients over 65 years of age are important part of the dermatology outpatient clinic. It is important for health care providers to be aware of the pattern of skin disorders in the elderly.[5]

Among elderly, the commonly seen dermatoses and their prevalence were: contact dermatitis, xerosis, pruritus, seborrhoeic keratosis, onychomycosis, seborrhoeic dermatitis, tinea pedis, corn and callus, urticaria, actinic keratosis, and pyoderma, respectively.

Duo to epidermal barrier dysfunction elderly population has elevated sensitivity to the allergens and irritants. So contact dermatitis is an important problem in elderly.[3] In our study, the most commonly seen diseases group was eczematous dermatitis (26.5%) and moreover the most frequent type of eczematous dermatitis was contact dermatitis (15.2%). In the previous studies, the frequency of dermatitis was detected from 16.3% to 58.7%.[2,3,5–8] The percentage of dermatitis is 16.3% in Adam's study,[8] and 32.7% Bilgili's study,[3] and 30.1% in Polat's study[5] and 58.7% in Liao's study.[7] This result corresponds with findings of some similar previous studies in elderly population.

In our study, contact dermatitis was more common in Group I than Group II and Group III. Contact dermatitis was relatively low in Group II and Group III. It can be explained by decreased ability to mount a delayed-type hypersensitivity reaction due to an abnormal immune response in the form of reduced Langerhans' cells.[9]

In the elder patients, prurigo can be caused by a variety of dermatological and systemic condition, but the most frequent cause is xerosis.[10] Dry skin is common skin problem in the elderly population. It may lead asteotic eczema, prurigo, and secondary infections. In our study, xerosis (13.8%) and prurigo (11.2%) were very common. In the previous studies, the prevalence of prurigo were found with a rate of 19.6% by Polat et al.,[6] 21.2% in the study by Polat et al.,[5] 8.8% by Bilgili et al.[3] in Turkey, 49.6% by Durai et al.[11] in India, 22% by Darjani et al.[10]

in Iran, and also Liao et al. 14.2%[7] in Taiwan. Xerosis also shown as 58.3% in Taiwan,[7] 11.6% in Iran,[10] 18.3% in Hong Kong,[12] 29.5% in Avustralia,[13] 5.4%,[3] and 38.8% in Turkey.[5] The frequency of prurigo and xerosis in our study were compatible with these findings.

Fungal and bacterial infections are common in elder patients. Several factors such as decreased blood flow, impaired immune function, thinning of skin and dryness, associated systemic diseases, epidermal damage to secondary to itching, and decreased personal care, leads to delay in the healing process.[3,6,9] In our study, the frequency of dermatophytosis and bacterial infections were 15.3% and 5.9%, respectively.

In the previous studies, the prevalence of fungal infection were found with a rate of 5.6% by Mponda et al.[14] in Tanzania, 8.2% by Darjani et al.[10] in Iran, 10.4% by Bilgili et al.[3] in Turkey, 11.9% in the study by Polat et al.[5] in Turkey, 16.4% by Chan[12] in Hong Kong, 16.7% by Polat et al.[6] in Turkey, 16.9% by Souissi et al.[15] in Tunisia, and 38% by Liao et al. in Taiwan,[7] respectively. Fungal infections constituted the most commonly observed infectious skin diseases, similar to our study.

Bacterial infection also shown as 3.5% by Mponda et al.[14] in Tanzania, 5.6% by Polat et al.[5] in Turkey, 7% by Bilgili et al.[3] in Turkey, 7.1% by Polat et al.[6] in Turkey, and 8.7% by Souissi et al.[15] in Tunisia, respectively. Our result was not different from these results.

Viral infections, especially herpes zoster, appear commonly in elder patients secondary to impaired immune function. Not surprisingly, the most frequent viral infection (6.0%) was herpes zoster (2.8%) in our study. Varicella zoster virus becomes latent in dorsal root ganglion after recovery from chicken pox at a young age. After decline in immunity, varicella zoster virus is reactivated.[9] In the previous studies, the prevalence of viral infection were found with a rate of 1.5% by Chan[12] in Hong Kong, 2.1% by Mponda et al.[14] in Tanzania, 2.8% by Bilgili et al.[3] in Turkey, 4.6% by Polat et al.[6] in Turkey, 6.8% by Souissi et al.[15] in Tunisia, respectively.

Dominant among malignant and premalignant dermatoses was actinic keratosis with a prevalence of 3.0% in our study. In the previous studies, actinic keratosis has a high prevalence in most studies, ranging from 1.9% to 25%. The prevalence of actinic keratosis were found with a rate of 1.9% in the study by Polat et al.[5] in Turkey, with a rate of 7.5% in the study of Polat et al.[6] in Turkey, with a rate of 22.4% in the study of Liao et al. in Taiwan,[7] with a rate of 24.3% in the study of Darjani et al.[10] in Iran, with a rate of 22.3% in the study of Cvitanovi´c H et al.[16] in Croatia, with a rate of 25% in the study of Smith et al. in Australia,[13] respectively. There were 11 patients with basal cell carcinoma, 3 patients with squamous cell carcinoma, and 1 patient with melanoma. Actinic keratosis is a precursor lesion to squamous cell carcinoma, and lifetime sun exposure is an important risk factor for it.[10] Management of the condition requires sunlight avoidance and use of sunscreens.[9]

There are some limitations in our study. We analyzed electronic database of a secondary referral medical center, and not the general population. Another limitation of our study is the reliance on clinical records and not direct diagnosis.

In conclusion, most of these geriatric skin diseases are preventable or treatable. Raising the general level of awareness is important about these common geriatric dermatoses. Further epidemiological studies are needed in order to reveal the prevalence of geriatric skin diseases

Ethics Committee Approval

This was a retrospective study therefore no ethics committee approval was taken.

Informed Consent

Retrospective study.

Peer-review

Internally peer-reviewed.

Authorship Contributions

Concept: H.Y.; Design: H.Y.; Data collection &/or processing: H.Y.; Analysis and/or interpretation: H.Y.; Literature search: H.Y.; Writing: H.Y.; Critical review: H.Y.

Conflict of Interest

None declared.

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Eskişehir (Türkiye)'deki Dermatoloji Polikliniğine Başvuran Yaşlı Hastaların Geriatrik Deri Hastalıklarının Prevalansı

Amaç: Bu çalışmanın amacı Eskişehir'deki geriatrik hastaların deri hastalıkları prevalansını ortaya koymaktır.

Gereç ve Yöntem: Bu araştırma retrospektif ve kesitsel çalışmadır. Dermatoloji Polikliniği'ne başvuran hastaların kayıtları otomasyon dosya sisteminden retrospektif olarak analiz edildi. Ocak 2017 ile Aralık 2017 tarihleri arasında dermatoloji polikliniğine başvuran 65 ve üzeri yaştaki geriatrik hastalar çalışmaya dâhil edildi.

Bulgular: Çalışmamıza 3.666'sı (%47.5) erkek, 4.056'i (%52.5) kadın olmak üzere toplam 7.722 hasta dâhil edildi. En sık rastlanan on hastalık ve prevalansı sırasıyla şu şekildeydi: kontakt dermatit (%15.2), kserosis (%13.8), prurigo (%11.2), seboreik keratosis (%5.8), onikomikoz (%5.3), seboreik dermatit (%5.2), tinea pedis (%5.2), nasır (%4.6), ürtiker (%4.0), aktinik keratoz (%3.0) ve piyoderma (%3.0) idi.

Sonuç: Yaşlılarda saptanan bu hastalıklar sıklıkla tedavi edilebilir ve önlenebilir hastalıklardır. Bu hastalıklara karşı genel farkındalık düzeyinin artırılması önemlidir. Deri hastalıkları prevalansını ortaya koymak için daha fazla epidemiyolojik çalışmalara ihtiyaç vardır.

Anahtar Sözcükler: Deri hastalıkları; epidemiyoloji; geriatrik dermatoloji; yaşlı.