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ORIGINAL ARTICLE

EVALUATION OF DERMATOLOGY CONSULTATIONS IN GERIATRIC POPULATION IN A TERTIARY CARE UNIVERSITY HOSPITAL: A RECORD-BASED CROSS-SECTIONAL STUDY

Abstract

Introduction: The aging population is increasing globally, with older adults experiencing distinct skin changes due to aging, comorbidities, and polypharmacy. This study aimed to identify dermatological problems in hospitalized elderly patients to guide healthcare strategies.

Materials and Method: A cross-sectional study analyzed dermatology consultations for hospitalized adults at a university hospital between 2018 and 2022. Patients were categorized as geriatric ≥ 65 years or young adult < 65 years. Data on demographics, consultation departments, and dermatological diagnoses were extracted from electronic medical records and categorized into 24 groups. Statistical analyses were performed.

Results: Of 7,430 consultations, 45.2% were for geriatric patients 55.7% women). Dermatology consultations were more frequent in geriatric patients (30.6%) than in young adults (11%). Fungal (19.6%) and bacterial (14.0%) infections were most common in geriatric patients, followed by eczematous dermatoses (10.6%) and ichthyosis (6.0%). Viral infections were significantly more frequent in young adults (13.3%). Sex differences were observed: fungal infections were more common in geriatric women (21.2%), while viral infections were more frequent in geriatric men (9.3%). Malignant and premalignant lesions (3.0%) and pruritus (4.9%) were also significantly higher in geriatric patients. Conditions such as ecchymosis and decubitus ulcers were more prevalent in elderly patients, whereas viral infections, drug eruptions, and urticaria were more frequent in young adults.

Conclusion: Dermatological conditions, particularly infections, pruritus, and ichthyosis, were more common in elderly hospitalized patients. Hospitalization provides an opportunity for comprehensive dermatological evaluation. A holistic approach is essential to address neglected dermatological problems in the growing aging population.

Keywords: Aged; Dermatology; Geriatrics; Skin Diseases.

INTRODUCTION

The global population is aging rapidly due to declining birth and death rates (1). In Turkey, 10.2% of the population consists of individuals aged 65 and over (2), and projections indicate that it will exceed 25% by 2080 (3). Advances in healthcare have further extended life expectancy, contributing to this demographic shift.

Aging induces structural and functional changes in the skin, including reduced epidermal regeneration, decreased lipid synthesis, impaired barrier function, and increased dryness (xerosis). These changes predispose older adults to various dermatological conditions (4). Studies show that 80% of individuals over 70 years of age have at least one skin condition requiring medical attention (5).

Evaluating dermatological problems in elderly patients can be challenging in outpatient settings due to communication difficulties, physical limitations, and lack of social or financial support (6). Hospitalization provides a unique opportunity for a comprehensive dermatological assessment, as older adults often experience comorbidities and polypharmacy, increasing their risk of dermatological conditions.

This study aims to analyze dermatology consultations conducted in a tertiary care center to determine the epidemiological distribution of dermatological problems in the geriatric age group and to evaluate differences compared to other age groups. Identifying the specific needs and conditions of this population will contribute to optimizing healthcare strategies and improving patient outcomes.

MATERIALS AND METHOD

Study design

This registry-based cross-sectional study was conducted at a university hospital. According to its bulletin, the hospital provides healthcare to 14 provinces in Northeastern Anatolia, the Eastern and Central Black Sea, as well as parts of Georgia, Iran, and Azerbaijan.

Study Population

The study population consisted of all hospitalized patients aged 18 years and older who were referred to the Department of Dermatology for consultation between January 1, 2018, and December 31, 2022. To enable comprehensive analysis of the data and evaluation of rare dermatological conditions, all patients meeting the inclusion criteria and not fulfilling any of the exclusion criteria were included in the study.

Inclusion Criteria:

1. Being aged 18 years or older,
2. Having been hospitalized and referred to the Department of Dermatology for consultation between January 1, 2018, and December 31, 2022,
3. Having electronic medical records with sufficient data (clinical presentation, diagnosis, and prescribed treatment).

Exclusion Criteria:

1. Repeated consultations for the same patient and the same complaint (only the first recorded consultation was included),
2. Missing or low-quality data in the electronic medical records (e.g., missing clinical or diagnostic information),
3. Patients under 18 years of age.

During this period, 167,641 individuals ≥ 65 years of age were admitted to hospital, of whom 10,992 (6.6%) were hospitalized, while 670,592 individuals < 65 years of age were admitted, and 37,125 (5.5%) were hospitalized. Patients were divided into two groups: geriatric (≥ 65 years of age) and young adults (< 65 years of age). There were

9511 dermatology consultations for hospitalized adult patients during the period specified. After excluding 2053 duplicate consultations (21.6%) and 28 files with low data quality, 7430 patients were ultimately included in the study.

Data collection

Dermatological evaluations were performed by a rotating dermatology resident under the supervision of an attending dermatologist who determined the definitive dermatological diagnosis. Data regarding demographics (age and sex), hospitalization department, and final dermatological diagnoses were extracted from patient electronic medical records. Dermatological diagnoses were categorized into 24 groups based on common characteristics.

Ethics approval

The present study was approved by the Ethics Committee of the authors' university (February 21, 2024; B.30.2.ATA.0.01.00/253).

Statistical analysis

Statistical analysis was performed using SPSS version 20.0 (IBM Corp., Armonk, NY, USA). Frequency and percentage were used as descriptive measures, and chi-squared analyses were used for pairwise comparisons. Differences with $p < 0.05$ were considered to be statistically significant.

RESULTS

In this study, 45.2% of consultations were performed among patients in the geriatric group, of whom more than one-half (55.7%) were women. Dermatological consultation was requested by 30.6% of geriatric patients and 11% of young adults.

Among patients ≥ 65 years of age, consultations were most frequently requested, in descending order, from endocrine diseases (10.9%), cardiology (10.3%), infectious diseases (9.3%), oncology (8.6%), and pulmonology (6.4%), while among those < 65 years of age, the order was infectious diseases (9.6%), endocrine diseases (9.5%), hematology (6.8%), oncology (5.8%), and nephrology (5.6%).

Among the young adult patients, the most common dermatological diagnoses were viral (13.3%), fungal (13.1%), and bacterial (9.6%) infections, and eczematous dermatoses (9.8%), followed by neutrophilic dermatoses (6.8%) and urticaria-angioedema (5.1%). Among geriatric patients, dermatology was consulted for fungal (19.6%) and bacterial (14.0%) infections, eczematous dermatoses (10.6%), and viral infections (7.3%), followed by ichthyosis (6.0%) and pruritus (4.9%). The distribution of dermatological diagnoses according to age group are summarized in Tables 1A and 1B. There were statistical differences between viral ($p = 0.001$), bacterial ($p = 0.001$), and fungal ($p = 0.001$) infections between the age groups (Table 1A). Viral infections were more common among young adults (13.3%), whereas bacterial (14.0%) and fungal (19.2%) infections were more common among the geriatric group. In addition, there were statistically significant differences between drug eruptions ($p = 0.040$), urticaria angioedema ($p = 0.017$), neutrophilic dermatosis ($p = 0.001$), and ecchymosis purpura ($p = 0.001$). Ecchymosis was more prevalent among geriatric patients (2.5%), whereas other diseases were more prevalent among younger patients (Table 1A).

Benign tumors (1.2% [$p = 0.046$]), malignant-premalignant lesions (3.0% [$p = 0.005$]), pruritus (4.9% [$p = 0.046$]), vascular disorders (1.9% [$p = 0.005$]), 001), decubitus ulcers (2.9% [$p = 0.001$]), ichthyosis- keratoderma (6.1% [$p = 0.001$]), pigmentation disorders (3.0% [$p = 0.005$]) were more common among geriatric patients (Table 1B). Papulosquamous diseases (2.7% [$p = 0.001$]), diseases of the oral mucosa (1.8% [$p = 0.045$]), diseases of the subcutaneous tissue (0.6% [$p= 0.001$]) and systemic rheumatological diseases (0.1%

Table 1A. Distribution of dermatological diagnoses according to age groups

Dermatological diagnoses N (%)*		Under 65 years old	65 years and older	Total	X^2	p
		N (%)*	N (%)*	N (%)*		
Viral infections	absent	3527 (86.7)	3117 (92.7)	6644 (89.4)	70.322	0.001
	present	541 (13.3)	245 (7.3)	786 (10.6)		
Bacterial infections	absent	3677(90.4)	2892(86.0)	6569(88.4)	34.282	0.001
	present	391(9.6)	470 (14.0)	861(11.6)		
Fungal infections	absent	3534(86.9)	2715(80.8)	6249(84.1)	51.532	0.001
	present	534(13.1)	647 (19.2)	1181(15.9)		
Parasitic infestations	absent	3993(98.2)	3285(97.7)	7278(98.0)	1.832	0.176
	present	75(1.8)	77(2.3)	152(2.0)		
Mycobacterial infections	absent	4056(99.7)	3358(99.9)	7414(99.8)	2.654	0.103
	present	12(0.3)	4(0.1)	16(0.2)		
Sexually transmitted diseases	absent	4057(99.7)	3351(99.7)	7408(99.7)	0.201	0.654
	present	11(0.3)	11(0.3)	22(0.3)		
Drug eruptions	absent	3864 (95.0)	3227 (96.0)	7091 (95.4)	4.221	0.040
	present	204 (5.0)	135 (4.0)	339 (4.6)		
Urticaria&angioedema	absent	3861 (94.9)	3230 (96.1)	7091 (95.4)	5.710	0.017
	present	207 (5.1)	132 (3.9)	339 (4.6)		
Neutrophilic dermatoses	absent	3791 (93.2)	3326 (98.9)	7117 (95.8)	150.216	0.001
	present	277 (6.8)	36 (1.1)	313 (4.2)		
Vasculitis	absent	4009 (98.5)	3312 (98.5)	7321 (98.5)	0.017	0.895
	present	59 (1.5)	50 (1.5)	109 (1.5)		
Ecchymosis&Purpura	absent	4017(98.7)	3278(97.5)	7295 (98.2)	15.989	0.001
	present	51 (1.3)	84 (2.5)	135 (1.8)		
Figurate Erythema	absent	4062(99.9)	3361(100.0)	7423(99.3)	2.711	0.100
	present	6(0.1)	1(0.0)	7(0.1)		
Erythema multiforme	absent	4067(100.0)	3358(99.9)	7425(99.9)	2.439	0.118
	present	1(0.0)	4(0.1)	5(0.1)		
Total (%)*		4668 (100.0)	3362 (100.0)	7430 (100.0)		

* percentage of column

Table 1B. Distribution of dermatological diagnoses according to age groups

Dermatological diagnoses N (%)*		Under 65 years old	65 years and older	Total	X^2	p
		N (%)*	N (%)*	N (%)*		
Eczematous dermatosis	absent	3668(90.2)	3006 (89.4)	6674(89.8)	1.151	0.283
	present	400(9.8)	356(10.6)	756(10.2)		
Papulosquamous diseases	absent	3957 (97.3)	3310 (98.5)	7267 (97.8)	11.984	0.001
	present	111 (2.7)	52(1.5)	163(2.2)		
Diseases of oral mucosa	absent	3995(98.2)	3321 (98.8)	7316(98.5)	4.028	0.045
	present	73(1.8)	41(1.2)	114(1.5)		
Diseases of hair	absent	4044(99.4)	3359(99.9)	7403(99.6)	12.747	0.001
	present	24(0.6)	3(0.1)	27(0.4)		
Nail disorders	absent	4054(99.7)	3339(99.6)	7403(99.6)	0.092	0.762
	present	14(0.3)	13(0.4)	27(0.4)		
Vesiculobullous diseases	absent	3985(98.0)	3245(96.5)	7230(97.3)	14.567	0.001
	present	83(2.0)	117(3.5)	200(2.7)		
Adnexal Diseases	absent	3904(96.0)	3326(98.9)	7230(97.3)	61.600	0.001
	present	164(4.0)	36(1.1)	200(2.7)		
Benign tumoral lesions	absent	4036(99.2)	3320(98.8)	7356(99.0)	3.995	0.046
	present	32(0.8)	42(1.2)	74(1.0)		
Malignant-premalignant lesions	absent	3988(98.0)	3262(97.0)	7250(97.6)	7.910	0.005
	present	80(2.0)	100(3.0)	180(2.4)		
Pruritus	absent	3908(96.1)	3196(95.1)	7104(95.6)	4.427	0.035
	present	160(3.9)	166(4.9)	326(4.4)		
Psychocutaneous disease s	absent	4043(99.4)	3349(99.6)	7392(99.5)	1.879	0.170
	present	25(0.6)	13(0.4)	38(0.5)		
Vascular disorders	absent	4029(99.0)	3298(98.1)	7327(98.6)	12.023	0.001
	present	39(1.0)	64(1.9)	103(1.4)		
Decubitus Ulcer	absent	4018(98.8)	3263(97.1)	7281(98.0)	27.568	0.001
	present	50(1.2)	99(2.9)	149(2.0)		
Diabetic Ulcer	absent	4019(98.8)	3317(98.7)	7336(98.7)	0.264	0.607
	present	49(1.2)	45(1.3)	94(1.3)		
Disorders due to physical agents	absent	4023(98.9)	3331(99.1)	7354(99.0)	0.616	0.432
	present	45(1.1)	31(0.9)	76(1.0)		
Burn	absent	4062(99.9)	3357(99.9)	7419(99.9)	0.000	0.989
	present	6(0.1)	5(0.1)	11(0.1)		

Table 1B. Continued...

Drug extravasation	absent	4063(99.9)	3345(99.5)	7408(99.7)	9.134	0.003
	present	5(0.1)	17(0.5)	22(0.3)		
Ichthyoses&Keratoderma	absent	4026(99.0)	3348(99.6)	7374(99.2)	10.833	0.001
	present	180 (4.4)	206 (6.1)	386(5.2)		
Diseases of subcutaneous adipose tissue	absent	4043(99.4)	3359(99.9)	7402(99.6)	13.530	0.001
	present	25 (0.6)	3(0.1)	28(0.4)		
Pigmentation disorders	absent	3988(98.0)	3262(97.0)	7250 (97.6)	7.910	0.005
	present	80 (2.0)	100 (3.0)	180 (2.4)		
Systemic Rheumatologic Diseases	absent	4029(99.0)	3351(99.7)	7380(99.3)	10.983	0.001
	present	39 (1.0)	11(0.3)	50 (0.7)		
Atrophies Dermal connective tissue diseases	absent	4044(99.4)	3345(99.5)	7389(99.4)	0.238	0.625
	present	24(0.6)	17(0.5)	41(0.6)		
Diseases related to metabolic and systemic diseases	absent	4056(99.7)	3353(99.7)	7409(99.7)	0.049	0.825
	present	12(0.3)	9(0.3)	21(0.3)		
Langerhans and Macrophage-associated diseases	absent	4067(100.0)	3360(99.9)	7427(100)	0.556	0.456
	present	1(0.0)	2(0.1)	3 (0.0)		
Total (%)*		4068 (100.0)	3362 (100.0)	7430 (100.0)		

*percentage of column

[p = 0.001]) were more common among young adult patients.

When geriatric patients were analyzed according to sex, there was a statistically significant difference in viral and fungal infections between males and females (p = 0.001 and p = 0.001, respectively). Males exhibited a higher rate of viral infections (9.3%) and females had a higher rate of fungal infections (21.2%) (Table 2A). As shown in Table 2B, there was a statistically significant difference between males and females with regard to oral mucosal (p = 0.038) and vesiculobullous (p = 0.003) diseases. Both diseases occurred more frequently among males than in females (1.7% and 4.6%, respectively).

DISCUSSION

There are limited data in the literature regarding dermatological problems experienced by hospitalized patients, especially those with advanced age. Age differences are rarely noted in dermatology consultations; instead, dermatological

Table 2A. Distribution of dermatological diagnoses by gender in patients aged 65 and over

Dermatological Diagnoses N (%)*		Male	Female	Total	X^2	p
		N (%)*	N (%)*	N (%)*		
Viral infections	Absent	1193(90.7)	1924(94.0)	3117(92.7)	13.571	0.001
	Present	123(9.3)	122(6.0)	245(7.3)		
Fungal infections	Absent	1103(83.8)	1612(78.8)	2715(80.8)	13.021	0.001
	Present	213(16.2)	434(21.2)	647(19.2)		
Bacterial infections	Absent	1126(85.6)	1766(86.3)	2892(86.0)	0.377	0.539
	Present	190(14.4)	280(13.7)	470(14.0)		
Parasitic infestations	Absent	1285(97.6)	2000(97.8)	3285(97.7)	0.041	0.839
	Present	31(2.4)	46(2.2)	77(2.3)		
Mycobacterial infections	Absent	1313(99.8)	2045(100.0)	3358(99.9)	2.161	0.142
	Present	3(0.2)	1(0.0)	4(0.1)		
Sexually transmitted diseases	Absent	1315(99.9)	2036(99.5)	3351(99.7)	3.014	0.083
	Present	1(0.1)	10(0.5)	11(0.3)		
Drug eruptions	Absent	1266(96.2)	1961(95.8)	3227(96.0)	0.262	0.609
	Present	50(3.8)	85(4.2)	135(4.0)		
Urticaria&angioedema	Absent	1265(96.1)	1965(96.0)	3230(96.1)	0.015	0.903
	Present	51(3.9)	81(4.0)	132(3.9)		
Neutrophilic dermatoses	Absent	1298(98.6)	2028(99.1)	3326(98.9)	1.369	0.242
	Present	18(1.4)	18(0.9)	36(1.1)		
Vasculitis	Absent	1300(98.8)	2012(98.3)	3312(98.5)	0.804	0.370
	Present	16(1.2)	34(1.7)	50(1.5)		
Ecchymosis&Purpura	Absent	1288(97.9)	1990(97.3)	3278(97.5)	1.221	0.269
	Present	28(2.1)	56(2.7)	84(2.5)		
Figurate erythema	Absent	1316(100.0)	2045(100.0)	3361(100.0)	0.001	1.00
	Present	0(0.0)	1(0.0)	1(0.0)		
Erythema multiforme	Absent	1315(99.9)	2043(99.9)	3358(99.9)	0.005	0.946
	Present	1(0.1)	3(0.1)	4(0.1)		
Total (%)*		1316 (100.0)	2046(100.0)	3362 (100.0)		

*percentage of column

Table 2B. Distribution of dermatological diagnoses by gender in patients aged 65 and over

Dermatological diagnoses N (%)*		Male N (%)*	Female N (%)*	Total N(%)*	X^2	p
Eczematous dermatoses	Absent	1188(90.3)	1818(88.9)	3006(89.4)	1.699	0.192
	Present	128(9.7)	228(11.1)	356(10.6)		
Papulosquamous diseases	Absent	1301 (98.9)	2009(98.2)	3310(98.5)	1.932	0.164
	Present	15(1.1)	37(1.8)	52(1.5)		
Diseases of oral mucosa	Absent	1293(98.3)	2028(99.1)	3321(98.8)	4.314	0.038
	Present	23(1.7)	18(0.9)	41(1.2)		
Diseases of Hair	Absent	1314(99.8)	2045(100.0)	3359(99.9)	0.149	0.700
	Present	2(0.2)	1(0.0)	3(0.1)		
Nail disorders	Absent	1309(99.5)	2040(99.7)	3349(99.6)	0.646	0.422
	Present	7(0.5)	6(0.3)	13(0.4)		
Vesiculo-bullous diseases	Absent	1255(95.4)	1990(97.3)	3245(96.5)	8.591	0.003
	Present	61(4.6)	56(2.7)	117(3.5)		
Adnexal Diseases	Absent	1297(98.6)	2029(99.2)	3326(98.9)	2.291	0.130
	Present	19(1.4)	17(0.8)	36(1.1)		
Benign tumoral lesions	Absent	1303(99.0)	2017(98.6)	3320(98.8)	0.875	0.350
	Present	13(1.0)	29(1.4)	42(1.2)		
Malignant-premalignant lesions	Absent	1285(97.6)	1977(96.6)	3262(97.0)	2.869	0.090
	Present	31(2.4)	69(3.4)	100(3.0)		
Pruritus	Absent	1239(94.1)	1957(95.7)	3196(95.1)	3.532	0.060
	Present	77(5.9)	89(4.3)	166(4.9)		
Psychocutaneous diseases	Absent	1310(99.5)	2039(99.7)	3349(99.6)	0.055	0.815
	Present	6(0.5)	7(0.3)	13(0.4)		
Vascular disorders	Absent	1291(98.1)	2007(98.1)	3298(98.1)	0.001	0.989
	Present	25(1.9)	39(1.9)	64(1.9)		
Decubitus Ulcer	Absent	1274(96.8)	1989(97.2)	3263(97.1)	0.461	0.497
	Present	42(3.2)	57(2.8)	99(2.9)		
Diabetic ulcer	Absent	1305(99.2)	2012(98.3)	3317(98.7)	3.535	0.060
	Present	11(0.8)	34(1.7)	45(1.3)		
Disorders due to physical agents	Absent	1302(98.9)	2029(99.2)	3331(99.1)	0.255	0.614
	Present	14(1.1)	17(0.8)	31(0.9)		
Burn	Absent	1312(99.7)	2045(100.0)	3357(99.9)	2.001	0.157
	Present	4(0.3)	1(0.0)	5(0.1)		
Drug extravasation	Absent	1309(99.5)	2036(99.5)	3345(99.5)	0.001	1.000
	Present	7(0.5)	10(0.5)	17(0.5)		

Table 2B. Continued...

Ichthyoses & Keratoderma	Absent					
	Present					
Subcutaneous Adipose Tissue Diseases	Absent	1314(99.8)	2045(100.0)	3359(99.9)	0.149	0.700
	Present	2(0.2)	1(0.0)	3(0.1)		
Pigmentation disorders	Absent	1285(97.6)	1977(96.6)	3262(97.0)	2.528	0.112
	Present	31(2.4)	69(3.4)	100(3.0)		
Systemic Rheumatologic Diseases	Absent	1311(99.6)	2040(99.7)	3351(99.7)	0.014	0.904
	Present	5(0.4)	6(0.3)	11(0.3)		
Atrophies Dermal connective tissue diseases	Absent	1308(99.4)	2037(99.6)	3345(99.5)	0.177	0.674
	Present	8(0.6)	9(0.4)	17(0.5)		
Diseases related to metabolic and systemic diseases	Absent	1312(99.7)	2041(99.8)	3353(99.7)	0.001	1.000
	Present	4(0.3)	5(0.2)	9(0.3)		
Langerhans and Macrophage-associated diseases	Absent	1315(99.9)	2045(100.0)	3360(99.9)	0.001	1.000
	Present	1(0.1)	1(0.0)	2(0.1)		
Total (%)*		1316 (100.0)	2046(100.0)	3362 (100.0)		

*percentage of column

problems among older patients are usually assessed during outpatient visits. As in our study, there are studies with a higher proportion of females (7) and studies with a majority of males (4,8), but the sex ratio is generally similar.

In a study from Portugal (9) that evaluated dermatology consultations in all age groups, 45.2% of requested consults were for patients > 65 years of age, while approximately 35% were for those < 65 years. In our study, dermatologists were consulted in 30.6% of inpatients ≥ 65 years of age and 11% of patients < 65 years. Previously, Nahass et al. (10) recommended skin examinations for all newly admitted patients and found skin conditions in 83 of 231 patients (35.9%), of whom 13.4% were directly related to systemic disease(s) or the reason for hospitalization. The increased likelihood of disease- and treatment-related dermatological problems in geriatric patients during hospitalization due to comorbid conditions and polypharmacy may have resulted in increased dermatology consultations in this age group. In addition, a previous population-based study reported that approximately 80% of adults > 70 years of age had ≥ 1 skin condition(s) requiring treatment or follow-up (5). Considering the difficulties that older patients experience in presenting to and being assessed in the outpatient clinic (6), it is reasonable to assume that neglected dermatological problems also occupy an important place in these consultations.

In our study, consultations for all adults were most frequently requested by internal medicine departments, similar to the findings of previous studies (11,12,13). This could be related to the longer length of stay of patients in the internal medicine wards, treatment-related diseases, or a more careful examination of all systems in these departments.

In earlier studies, infection(s), eczema, and drug eruptions were the most common dermatological

consultations in all adult age groups (9,12). According to a study by Ferreira et al. (13), dermatitis was the most frequently diagnosed condition in consultations for all age groups, followed by herpesvirus infection. Makrantonaki et al. studied hospitalized geriatric patients and found that infectious diseases (viral, bacterial, and fungal) were the most common skin problems (14). Pruritus, eczematous dermatitis, and fungal infections were the most common conditions reported in studies examining elderly patients attending outpatient clinics (8,15). In our study, the most frequently consulted conditions were infections and eczematous eruptions, followed by neutrophilic dermatoses and urticaria-angioedema in young adults, and ichthyosis and pruritus in the elderly.

Aged skin is more prone to infection due to intrinsic degenerative and metabolic changes, smoking, and exposure to ultraviolet radiation over time, among other environmental factors. In addition, comorbidities, such as stasis dermatitis, which becomes more common with advancing age, various dermatoses, diabetes, and peripheral vascular diseases, provide a gateway for microorganisms. The development of infection is facilitated in older skin (16). Opportunistic fungal infections have also been reported in healthy elderly patients without immune deficiency (17). This suggests that elderly patients, such as immunosuppressed patients, are at risk for opportunistic infections. In the present study, fungal and bacterial infections were significantly more common among the elderly (i.e., geriatric) group. In contrast, viral diseases were observed more frequently in patients < 65 years of age. In support of our data, Ferreira et al. (13) reported that herpes virus infections were among the 5 most common diagnoses in patients ≤ 55 years of age, whereas superficial mycoses and candidiasis were among the 5 most common diagnoses in those >85 years of age, in contrast with the other age groups combined. In a study by Etgü et al (15), the frequency of mycoses decreased with advancing age > 65 years. When older patients were analyzed according to sex, viral infections were more common among men and mycotic infections were more common among women (15). Similar to our study, viral infections were more common among men, and both bacterial and mycotic infections were more common among women in the study by Etgü et al. (15). In contrast, Yalçın et al. (8) found that fungal, bacterial, and viral infections were more common among male patients. In general, it is common for infectious diseases to increase with age; however, the differences between the sexes vary, although the reason for this is not clearly understood.

In our study, patients ≥ 65 years of age exhibited higher rates of ecchymosis and purpura. A study involving a geriatric patient group reported the presence of purpura in 12% of patients (18). The development of senile purpura, a common cutaneous manifestation among older patients, may be associated with dyslipidemia or medications including anticoagulants, history of dermatological disease(s), and lack of exercise (19).

Drug-related eruptions can occur in 2%–3% of hospitalized patients (20). In our hospital, it was observed in 4.6% of all age groups. We assumed that this was more common among older age groups due to polypharmacy; however, in our patient series, a higher rate of drug-related eruption was recorded in young adults. Acute urticaria is most commonly caused by medications, and infections and can occur in all age groups and sexes. Fifteen to 20% of the population will experience an acute urticaria/angioedema episode once in their lifetime. In contrast, chronic urticaria mainly affects women 20–40 years of age (21). Patients with urticaria/angioedema consulted during hospitalization had mostly drug- and infection-induced acute presentations; however, as with chronic urticaria, they were mostly young adults.

Skin cancer is the most prevalent cancer worldwide. Despite affecting individuals of all ages, its frequency increases with advancing age (22).

Approximately 30% of older adults have malignant or premalignant lesions, according to a screening study by Sinikumpu et al. (5). In a study by Ferreira et al. (13), the most prevalent diagnosis made during consultations with patients > 85 years of age was malignant skin neoplasms (17.6%). However, in our hospital, benign, premalignant, or malignant dermatological tumor lesions accounted for only 4.2% of the consultations in patients > 65 years of age. Given that cancers are more common among individuals > 65 years of age, it is imperative that hospitalized patients undergo a thorough dermatological examination. However, the fact that there were fewer consultations than expected suggests that physicians may have overlooked these asymptomatic conditions.

In addition to malignant diseases, long-term sun exposure also plays an important role in the development of pigmentation disorders. Due to damage from ultraviolet radiation, trauma, and intrinsic factors, elderly individuals are susceptible to many pigmentary disorders that do not occur in younger patient populations (19). The rate of seeking dermatological consultation for these disorders, which have a more benign prognosis, was much lower among elderly inpatients than among older patients (14). Nevertheless, it is more common among older patients.

In our study, pruritus and ichthyosis were among the most common reasons for consultation among elderly patients. While the number of diseases that can cause pruritus may increase in elderly patients, senile pruritus is also regraded as chronic pruritus of unknown origin (23). The incidence of xerosis and associated pruritus also increases as the skin barrier is compromised, and sebaceous and sweat gland activities decrease in the elderly. Fifty-four percent of patients > 65 years of age have xerosis. It has been linked to liver and autoimmune diseases, atherosclerosis of the lower limbs, and chronic renal failure (18). Ichthyosis (especially acquired ichthyosis), which is common among patients of advanced age, may also be associated with increased inflammatory, endocrinological, and neoplastic processes (24).

Vesiculobullous disease was also observed more frequently among older patients. The incidence of bullous pemphigoid, a rare autoimmune bullous disease that commonly affects the elderly, has increased in recent years. This increase is believed to be due to the aging population, the associated increase in neurological conditions, increasing use of medications that may trigger the disease, and the ability to diagnose pemphigoid variants more frequently (25). Vesiculobullous disease(s) were found more frequently among men in both our investigation and the study by Yalçın et al (8).

Among consultations for adults, connective tissue disease has been found in 2.1% (12) and psoriasis, the most common papulosquamous disease, in 4% (9). Both disease groups, however, were encountered less frequently in our study than in the literature, but were significantly less common among older patients.

The main limitation of our study was that when evaluating the consultation notes, additional diagnoses identified by the consultant during the examination that were unrelated to the reason for consultation were not included in the study. Therefore, asymptomatic and neglected dermatological problems may be much more common than previously reported. More population-based screenings are required to detect all dermatological problems in elderly patients.

In summary, elderly patients exhibited more dermatological problems than their younger counterparts when hospitalized for various medical reasons, and a dermatologist's opinion can be sought. These differences should be considered when assessing older patients. In addition, a holistic approach can diagnose neglected dermatological problems in these patient groups during their hospital stay. As the population of older adults continues to increase, there is a need to better characterize the health problems of this patient

population and increase physicians' knowledge regarding treatment and management strategies.

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