Psoriasis Frequency in Antalya/Türkiye; An Approach to Assess the Psoriasis Occurrence Among Patient Relatives/Companions

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Abstract

Aim: Methodological variations, geographical factors, and ethnic differences contribute to the wide variability in the prevalence of psoriasis. There are limited studies on the prevalence of psoriasis in Türkiye, and no similar study has been conducted in our region. This study aimed to assess the frequency of psoriasis in Antalya.

Materials and Methods: This single-center, descriptive study included healthy adult volunteers over 18 years old accompanying patients at internal medicine outpatient clinics in Akdeniz University, Antalya, Türkiye. We aimed to recruit 1000 participants for this study by utilizing the quota sampling method.

Results: Of the 1075 participants, 980 (age range, 18-83; mean ± standard deviation, 45.90±14.00) agreed to participate in the study. Among the 27 suspected cases, 19 were confirmed to be psoriasis (12 females and 7 males). There were 9 new cases diagnosed. Psoriasis prevalence was 1.93 per 100 [confidence interval (1.2-2.9)]. Plaque psoriasis was present in the majority (94.7%) of diagnosed patients. The smoking rate was 42.1%. The body surface area was ≤ 10% in all patients. 94.7% of patients had the Psoriasis Area Severity Index values ≤ 10. 44.4% had a family history of psoriasis. Disease severity was lower than that in our center's previous registry survey.

Conclusion: The frequency observed in our study was found to be higher than that reported in both Turkish studies and global studies. Diagnosed patients had mild psoriasis. Quota sampling is appropriate for estimating rare dermatological conditions in patients' relatives or companions. This screening approach allows for the cost-effective collection of data in a shorter period, with a reduced workforce.

Keywords: Psoriasis, prevalence, cross-sectional survey

INTRODUCTION

Psoriasis is an immune-mediated, inflammatory skin disease affecting a significant proportion of the population. It typically presents as discrete, erythematous, pruritic plaques covered in silvery scales, giving the disease its name. The disease has a chronic course, with recurrent attacks. Both men and women are equally affected by the disease.[1] The age at which the disease onset occurs increases during two distinct periods. The first increase occurs between the ages of 20 and 30. The second and smaller increase occurs between the ages of 50 and 60.[2,3] The precise etiology of the disease remains uncertain. However, genetic predisposition has a significant impact on the development of the disease. The disease likely begins with the activation of the immune system in response to various environmental stimuli, particularly in individuals with a genetic predisposition.

The prevalence of psoriasis in Europe and America is estimated to be around 2-3%. Conversely, African and Asian countries report a lower prevalence rate of 0.5 to 1%.[4] Two

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studies have been conducted to examine the prevalence of psoriasis in Türkiye. Both studies were carried out in the northern region of Türkiye. The study conducted in Trabzon province and its districts found that the prevalence of psoriasis was 1.1% [95% confidence interval (CI) 0.9-1.3].[5] Another study conducted in Mudurnu district, Bolu province reported a psoriasis prevalence rate of 0.5%.[6] The region of Antalya, located in southern Türkiye, has not been the subject of a previous prevalence study on psoriasis.

This study aimed to establish the frequency of psoriasis in Antalya, Türkiye. The results of the investigation are intended to address the existing knowledge gap concerning the psoriasis frequency in Türkiye and to provide a foundation for more comprehensive approaches to the early diagnosis and treatment of patients. To achieve this objective, the quota sampling screening method was employed in the present study to ascertain the prevalence of rare dermatological diseases in the relatives or companions of the patients. This methodology was previously validated in a study conducted at our clinic on the prevalence of hidradenitis suppurativa.[7]

MATERIALS AND METHODS

This descriptive study was conducted between May and October 2023 at Akdeniz University in Antalya, Türkiye, among healthy adult volunteers over the age of 18 who were accompanying patients attending internal medicine outpatient clinics. The departments of dermatology, rheumatology, and the outpatient clinics of physical therapy and rehabilitation were excluded from the study to avoid the potential for significant bias. Participants who were under the age of 18, pregnant, or unable to provide consent (e.g., due to unconsciousness or psychiatric condition) were excluded from the study. We set out to reach 1000 participants in this study by employing the quota sampling method. Approval was granted by the Clinical Research Ethics Committee of Akdeniz University Faculty of Medicine (approval number: KAEK-138, date: 08.02.2023). A digital data collection form was used to data anonymously.

Data collection was conducted by trainee doctors (DS and SOI). After verbal consent was obtained, the researchers explained the purpose of the study to the potential participants and administered the questionnaire. An experienced dermatologist (EA) examined participants with suspected or previously diagnosed psoriasis during the screening phase to confirm the diagnosis. Data on the characteristics of patients diagnosed with psoriasis, including demographics and clinical factors, were recorded.

SPSS v23.0 was used for statistical analysis. Mean and standard deviation (SD) were used for continuous variables, and percentages were used for frequency distributions. The chi-square test was used to compare categorical variables; $P < 0.05$ was considered significant.

RESULTS

A total of 1,075 individuals were invited to participate in the study. Nine hundred eighty (mean age ± SD, 45.90±14.00) agreed to participate (Table 1). Among the 27 participants initially suspected of having psoriasis, a total of 19 individuals (12 women and 7 men) were ultimately diagnosed with the condition. There were nine cases determined to be first-time diagnoses. The study verified the diagnoses of ten participants who had previously been diagnosed with psoriasis. A dermatologist diagnosed all except for 2 of the 10 patients. One of them was diagnosed by a family physician and the other by a rheumatologist. The estimated frequency of psoriasis in the study participants was 1.93 [95% CI (1.2-2.9)] (Table 2). The frequency of psoriasis was calculated as 2.0% among women and 1.8% among men. The proportion of individuals with a family history of psoriasis was significantly higher in the group diagnosed with psoriasis (44.4%) compared to the group without psoriasis (16.8%) ($P = 0.002$).

Table 1. Demographic features of study participants

Variable	Participants	Psoriasis group
	980	19
n		
Sex (%)		
Male	370 (38.7)	7 (36.8)
Female	601 (61.3)	12 (63.2)
Age, median	45.9	44.5
Body mass index (%)		
Normal (18.5-24.9)	354 (36.1)	11 (57.9)
Overweight (25-29.9)	367 (37.5)	4 (21.1)
Obese (30-39.9)	236 (24.0)	4 (21.1)
Morbidly obese (> 40)	23 (2.4)	

Table 2. Clinical characteristics of patients diagnosed with psoriasis

Clinical features	Data
Mean age (± SD)	44.53±11.64
Number of diagnosed psoriasis cases	19 (12 females, 7 males)
Prevalence of psoriasis (overall)	1.93% (95% CI: 1.2-2.9)
Prevalence of psoriasis (females)	2.0% (12)
Prevalence of psoriasis (males)	1.8% (7)
Family history of psoriasis	44.4% (8)
Most common type of psoriasis	Plaque psoriasis (94.7%)
Patients with multiple comorbidities	47.4% (9)
Patients with BMI above normal	42.2% (8)
BSA, mean	1.6
PASI score, mean	2.1

BMI: Body mass index, BSA: Body surface area, SD: Standard Deviation, CI: Confidence interval, PASI: Psoriasis Area and Severity Index

The majority of the patients (94.7%) had plaque psoriasis, the most prevalent type of the disease. 47.4% of these had multiple comorbidities and 42.2% had a body mass index above normal. The active smoking rate among diagnosed patients was 42.1%.

The calculation of body surface area (BSA) and Psoriasis Area and Severity Index (PASI) scores was performed for every patient diagnosed with psoriasis. None of the diagnosed patients had BSA values higher than 10%. In addition, the PASI values of 94.7% of patients were ≤ 10. In the study, the mean PASI and BSA values of patients diagnosed with psoriasis were 2.1 and 1.6, respectively.

DISCUSSION

Our findings indicate that 1.93% of adults in the Antalya region have clinically confirmed psoriasis. The diagnosed patients in the study experienced a milder form of psoriasis. The frequency of psoriasis was higher (44.4%) among first- and second-degree relatives.

The frequency of psoriasis in a sample group of 980 individuals was found to be higher than that reported in previous studies conducted in Türkiye and many other countries worldwide. Two studies examined psoriasis prevalence in Türkiye. Serdaroğlu et al.[6] conducted the first study in Mudurnu district, of Bolu province, involving 8502 participants from all age groups. Psoriasis prevalence was 0.5% in this study. Smokers and alcohol users had a higher prevalence than non-users. In Trabzon province, Yaylı et al.[5] reported a 1.1% prevalence of psoriasis in adults. In a sample of 7,885 adults, women had a disease prevalence of 1.2%, while men had 1%.[5] Serdaroğlu et al.[6] found a lower prevalence than our study, possibly because of they included of all age groups and less frequent observation of the disease in pediatric patients. The reason for the higher frequency (1.1% versus 1.93%) we obtained compared to Yaylı et al.[5] study[6] could be linked to disparities in sample sizes, geographical variations, and methodological differences.

Serdaroğlu et al.[6] noted higher rates of smoking and alcohol consumption in individuals with psoriasis. In our study, the smoking rate among psoriasis patients was 42.1%. Smoking stimulates the production of interleukin-1beta (IL-1β) and increases pro-inflammatory cytokine production, including Tumor Necrosis Factor-alpha, IL-1, IL-6, and IL-12. These cytokines significantly influence the pathogenesis of psoriasis. Our study's results are in line with the literature.[8-10]

Yaylı et al.[5] study, revealed that 18.3% of psoriasis patients had a family history, which increased the disease risk by eight times. Individuals diagnosed with psoriasis in our study had a significantly higher proportion of family history of psoriasis (44.4%) compared to those without psoriasis (16.6%). The prevalence rate supports previous studies in highlighting the importance of family history in psoriasis development.

Our study, unlike the two previous ones in Türkiye, also assessed the clinical characteristics of the patients. All diagnosed patients had a BSA ≤ 10% and 94.7% had PASI values ≤ 10. Mean PASI and BSA values of 2.1 and 1.6, respectively, indicate mild psoriasis in most patients. We analyzed data from 142 patients in our psoriasis outpatient clinic and found that plaque psoriasis was the most common type, accounting for 92.2% of cases. The age range of the participants was 18 to 69 years, with a mean ± SD of 40.10±12.90. The patients'mean PASI and BSA scores were 3.6 and 5.6, respectively. Out of a total of 142 patients, the percentage of patients with PASI and BSA > 10 scores was 3.5% and 14%, respectively. The values were much higher than those in the prevalence study ($P < 0.05$). This may be because patients with more severe disease sought treatment at specialized healthcare facilities.

Psoriasis prevalence varies in different parts of the world. Geographical, genetic, and environmental factors may play a role in the observed results. Methodological differences, such as study design, sample sizes, or data collection methods, may also contribute to variations in psoriasis prevalence studies. Parisi et al.[4] meta-analysis showed psoriasis prevalence globally, varies from 0.11% to 1.58%. The region, including Australia and New Zealand, had the highest average prevalence (1.58%). Psoriasis prevalence in Western Europe was 1.52%. Australia had the highest prevalence (1.88%) and Taiwan had the lowest (0.05%). Our study revealed a 1.93% frequency of psoriasis in the Antalya population. This value is higher than the averages reported in both Turkish and global prevalence studies.

Türkiye has both public and private health services. The system is funded by a 5% surtax on employers. The public sector covers around 75.2% of health expenses. No referral is needed for patients to be admitted to any health facility, including primary, secondary, or tertiary, even on the same day. In comparison to other countries, tertiary health facilities provide care for patients with a diverse range of diseases, regardless of the severity. The structure of the Turkish health system allows to some extent, for the extrapolation of epidemiological data from tertiary healthcare facilities to the population at certain rates.

Study Limitations

Our study had some limitations. The participants were older compared to the Trabzon population-based study. Additionally,

there was a higher proportion of women in our study. This could be because women are more likely to accompany their spouses or children to the hospital. Selection bias may be another limitation of this study design.

Conclusion

Our study demonstrates the efficacy of the quota sampling screening method as a reliable tool for estimating the frequency of rare dermatological diseases in the relatives or companions of patients. This method, successfully employed in a previous study on hidradenitis suppurativa prevalence at our clinic, offers significant advantages. It provides a more cost-effective and time-efficient approach to data collection, requiring fewer staff members. Given the high cost and logistical challenges of conducting population-based prevalence surveys, the quota sampling method presents a viable alternative for future research.

Ethics

Ethics Committee Approval: Approval was granted by the Clinical Research Ethics Committee of Akdeniz University Faculty of Medicine (approval number: KAEK-138, date: 08.02.2023).

Informed Consent: After verbal consent was obtained, the researchers explained the purpose of the study to the potential participants and administered the questionnaire.

Footnotes

Authorship Contributions

Concept: E.A., M.E., Design: E.A., M.E., Data Collection or Processing: G.A.Ö., D.S., S.Ö.I., Analysis or Interpretation: E.A., M.E., C.V., G.A.Ö., Literature Search: E.A., M.E., C.V., G.A.Ö., Writing: E.A., M.E., C.V.

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