Turkish Journal of Clinical Research

Turk J Clin Res. 2025;1(3):150-155
https://doi.org/10.63909/1453025

RESEARCH ARTICLE

Assessment of comorbidities in patients with psoriasis

Psöriyazisli hastaların komorbiditelerinin değerlendirilmesi

Aybala CEBECIK[1], Habibullah AKTAS[2]

[1]Karabük University, Faculty of Medicine, Department of Family Medicine, Karabük, Türkiye
[2]Çağsu Hospital, Dermatology Clinic, Bolu, Türkiye

Abstract

Aim: Psoriasis is a chronic skin disease that can occur at any age and generally persists in perpetuity. Recent studies have shown that psoriasis not only affects the skin but also leads to significant comorbidities. The purpose of this study was to assess the chronic illnesses that accompany psoriasis.

Methods: A cross-sectional, retrospective study of 841 psoriasis patients who attended dermatology clinics at Karabuk University Education and Research Hospital between 2017 and 2019.

Results: Of a total of 841 patients, 56.4% (n=474) were female, patients' average age was 43.40±17.91 years. The three most frequent comorbidities observed in adult patients were high blood pressure (18.8%), hyperlipidemia (18.2%), and diabetes (10.4%). Statistically significant differences were observed between male and female patients. The results of abdominal ultrasonography performed on adult patients revealed a statistically significant and higher prevalence of hepatosteatosis among female patients than among male patients.

Conclusions: Significant comorbidity was observed in psoriasis patients. The most common comorbidities were hyperlipidemia, high blood pressure, and diabetes, which are components of metabolic syndrome. A significantly higher rate of comorbidity was observed in female psoriasis patients compared to male patients.

Keywords: Psoriasis, comorbidity, hepatosteatosis.

Özet

Amaç: Psöriyazis, her yaşta ortaya çıkabilen ve genellikle kalıcı olan kronik bir cilt hastalığıdır. Son çalışmalar, psöriyazisin yalnızca cildi etkilemekle kalmayıp aynı zamanda önemli komorbiditelere de yol açtığını göstermiştir. Bu çalışmanın amacı, psöriyazise eşlik eden kronik hastalıkları değerlendirmektir.

Yöntemler: 2017-2019 yılları arasında Karabük Üniversitesi Eğitim ve Araştırma Hastanesi dermatoloji polikliniklerine başvuran 841 psöriyazis hastası üzerinde yapılan kesitsel, retrospektif bir çalışmadır.

Bulgular: Toplam 841 hastanın %56,4'ü (n=474) kadın olup, hastaların yaş ortalaması 43,40±17,91 yıldı. Yetişkin hastalarda en sık görülen üç komorbidite yüksek tansiyon (%18,8), hiperlipidemi (%18,2) ve diyabet (%10,4) idi. Erkek ve kadın hastalar arasında istatistiksel olarak anlamlı farklılıklar gözlendi. Erişkin hastalarda yapılan abdominal ultrasonografi sonuçları, kadın hastalarda hepatosteatoz prevalansının erkek hastalara göre istatistiksel olarak anlamlı ve daha yüksek olduğunu ortaya koymuştur.

Sonuç: Psöriyazis hastalarında anlamlı komorbidite gözlenmiştir. En sık görülen komorbiditeler, metabolik sendromun bileşenleri olan hiperlipidemi, yüksek tansiyon ve diyabettir. Kadın sedef hastalarında erkek hastalara kıyasla anlamlı derecede daha yüksek komorbidite oranı gözlenmiştir.

Anahtar Kelimeler: Psöriyazis, komorbidite, hepatosteatoz.

INTRODUCTION

Psoriasis is a chronic inflammatory dermatosis with a course of remissions and relapses and sharp bordered erythema characterized by white squams. Its etiology is not well understood, and it affects 2-4% of the world's population (1). Proinflammatory molecules released during chronic inflammation cause psoriasis to be accompanied by one or more diseases. Several studies have identified a relationship between psoriasis and comorbid cardiometabolic disease, gastrointestinal disease, kidney disease, malignancies, infections, psychiatric anomalies (2). The pathogenesis of comorbid diseases in psoriasis patients remains unclear; however, we assume that universal risk factors-common inflammatory pathways, cellular mediums, and genetic susceptibility-are contributors (3). We can no longer classify psoriasis (known commonly as "sedef" in Türkiye) solely as a skin disease, and the latest studies indicate that psoriasis is, in fact, the visible outcome of an immune system disorder. Although we do not know what stimulates this immune system disorder, we know

Corresponding Author: Aybala CEBECIK aybalacebecik@outlook.com
Cite as: Cebecik A, Aktas H. Assessment of comorbidities in patients with psoriasis. Turk J Clin Res. 2025;1(3):150-155

Content of this journal is licensed under a Creative Commons Attribution-NonCommercial-NonDerivatives 4.0 International License

Received: 18 September 2025 | **Accepted:** 30 November 2025 | **Published:** 31 December 2025

Turk J Clin Res. 2025;1(3):150-155
https://doi.org/10.63909/1453025

that the condition leads to others, including arthritis, uveitis, Crohn's disease, coronary heart disease, and hepatic lipidosis, which means that receiving a psoriasis diagnosis has numerous implications for patients beyond skin concerns. In light of these recent observations, we aimed to conduct a systematic evaluation of patients with psoriasis in accordance with the holistic approach of family medicine, with a particular focus on examining the comorbidities that frequently accompany psoriasis.

MATERIALS AND METHODS

In this retrospective cross-sectional study, we analyzed data from psoriasis patients who attended dermatology clinics at the Karabuk University Education and Research Hospital between January 1, 2017, and August 31, 2029. The main source of data is the records of 841 patients from all age groups who were diagnosed according to the following International Classification of Disease (ICD-10) psoriasis diagnosis codes: L40.0–1, L40.3–4, and L40.8–9. No exclusion criteria were applied. Selected patient demographic data included age and gender. Identified comorbidities include the following ICD-10 diagnoses: diabetes mellitus (E11.0–9), coronary artery disease (CAD;125.0-.9), hyperlipidemia (E78.5), psoriatic arthritis (L40.5), depression (F32.0–9), anxiety (F41.1–9), hyporthyroid (E03.8–9), rheumatoid arthritis (M05.8–9, M06.8–9) and cancer (C00-09.9). Patients who had been diagnosed with psoriasis and who had undergone abdomen ultrasonography within the year of diagnosis or later, assessed for hepatic steatosis were considered. The treatment status of each psoriasis patient, as recorded in the hospital database, was also evaluated.

The data were analyzed using the IBM Statistical Package for the Social Sciences (SPSS v. 24). Qualitative variables are represented as numbers and percentages, while continuous variables are represented as median±standard deviation. The Kolmogorov–Smirnov test was used to determine the normal distribution of continuous variables. When comparing between-group (binary) comparisons, independent sample tests were used to compare normal range data, and the Mann–Whitney U-test was used to compare abnormal range data. Ki-Kare and Fisher's exact tests were used to analyze categorical variables. The study was conducted with the approval of the Medical Faculty of Karabuk University's Ethical Committee for Noninvasive Clinical Research (Approval No. 11691, obtained March 5, 2020).

RESULTS

Out of 841 patients, 56.4% (n=474) were women, 43.6% (n=367) were men, and 91.6% (n=771) were adults. The patients were aged between 2 and 88 years old (43.40±17.91 years), with the median age of female patients being 43.48±17.56 years and that of male patients being 43.31±13.39 years. We observed no discrepancy between sex and median age (p=0.888). When patients were groups as children and adults, we found that of 71 child patients, only one demonstrated comorbidity (Grade 1 hepatosteatosis), while 44.5% (n = 343) of 770 adult patients demonstrated the presence of one or more comorbid diseases. The most commonly observed comorbidity was hypertension (Table 1).

Table 1. Distribution of comorbidity frequencies in adult psoriasis patients

Comorbidities	n	(%)
Hypertension (High Blood Pressure)	145	(18.8)
Hyperlipidemia	140	(18.2)
Diabetes	80	(10.4)
Depression	40	(5.2)
Hypothyroidism	40	(5.2)
Coronary Heart Disease	37	(4.8)
Anxiety	32	(4.2)
Psoriatic Arthritis	15	(1.9)
Cancer	9	(1.2)

A between-group comparison of gender among the adult patients revealed that 47.8% (n=210) of female and 40.1% (n=133) of male patients had comorbid diseases, which was statistically significant (p=0.031). There were no gender differences in hypertension, diabetes, hyperlipidemia, psoriatic arthritis, depression, anxiety, or cancer; however, CHD was more prevalent among male patients, and hypothyroidism was significantly higher in female patients (Table 2).

Hepatosteatosis was detected by abdomen ultrasonography in 52.3% (n=123) of 235 adult patients. Of these patients, 70.7% (n=87) had Grade 1, 28.5% (n=35) had Grade 2, and 0.8% had Grade 3 steatosis. The liver function tests (LFT) of 4% (n=4) of the hepatosteatosis patients showed defects. Regarding gender of the 235

Turk J Clin Res. 2025;1(3):150-155
https://doi.org/10.63909/1453025

Table 2. Gender differences for comorbid diseases in adult psoriasis patients

Comorbidities	Female n (%)	Male n (%)	Total n (%)	p
Hypertension	90 (20.5)	55 (16.6)	145 (18.8)	0.116
Diabetes	53 (12.1)	27 (8.1)	80 (10.4)	0.076
Coronary Heart Disease	15 (3.3)	22 (6.6)	37 (4.8)	0.025
Hypothyroidism	37 (8.4)	3 (0.9)	40 (5.2)	<0.001
Hyperlipidemia	80 (18.2)	60 (18.1)	140 (18.2)	0.957
Psoriatic Arthritis	10 (2.3)	5 (1.5)	15 (1.9)	0.442
Depression	29 (6.6)	15 (4.5)	40 (5.2)	0.216
Anxiety	17 (3.9)	11 (3.3)	32 (4.2)	0.681
Cancer	6 (2.3)	3 (0.9)	9 (1.2)	0.739

patients who underwent abdomen ultrasonography, 142 female (55.6%, n=79) and 93 male (47.3%, n=44) patients had hepatosteatosis. The frequency of hepatosteatosis was higher in female patients than in male patients to a statistically significant extent (p=0.039).

Regarding treatment types, when comparing the patients who had comorbid diseases and received topical (43.4%, n=271) or systemic (49.3%, n=72) treatments, the rate of comorbidity was found to be statistically insignificant. However, when we evaluated comorbid disease type, hyperlipidemia and psoriatic arthritis incidences were significantly higher in patients who received systemic treatment (p=0.001) than in those who received topical treatment (p=0.001; Table 3).

Table 3. Comorbidity frequencies according to treatment type

Comorbidities	Topical Treatment n (%)	Systemic Treatment n (%)	p
Hypertension	120 (17.3)	25 (17.1)	0.563
Hyperlipidemia	100 (14.3)	40 (27.4)	0.001
Diabetes	64 (9.2)	16 (11.0)	0,798
Coronary Heart Disease	30 (4.4)	6 (4.1)	0.722
Hypothyroidism	30 (4.4)	10 (6.8)	0.315
Psoriatic Arthritis	5 (0.7)	10 (6.8)	<0.001
Depression	30 (4.8)	10 (6.8)	0.315
Anxiety	25 (4.0)	7 (4.8)	0.665
Cancer	7 (1.1)	2 (1.4)	0.682

When we compared liver function test (LFT), lipid panel, and median HbA1c levels between patients with and without fatty liver, ALT, triglyceride, total cholesterol, and HbA1c levels were significantly higher in patients with fatty liver than in those without fatty liver (Table 4).

Table 4. Comparison of median levels of lipid panel, hba1c, and lft in patients with and without hepatosteatosis

Comorbidities	With Hepatosteatosis	Without Hepatosteatosis	p
Triglyceride (mg/dL)	194.30±102.63	147.47±81.88	0.001
LDL (mg/dL)	128.31±46.14	119.77+-39.83	0.223
HDL (mg/dL)	50.72±12.39	50.69±11.92	0.990
Total Cholesterol (mg/dL)	216.83±48.82	192.9±53.71	0.006
ALT (U/L)	24.37±11.14	20.55±8.90	0.015
HbA1C (%)	10.73±14.96	6.75±-0.61	0.007
AST (U/L)	23.19±7.99	22.20±6.49	0.665

The median fasting glycose level was 165.32±74.90 mg/dl and HbA1c was 7.89±1.64%. HbA1C levels were equal to or more than 9% in 20% and 7% in 39% in diabetic psoriasis patients. The results of a comparison of median HbA1c levels by sex were statistically insignificant (8.05±1.6 in female and 7.55±1.57 in male patients; p=0.241).

DISCUSSION

In the course of our study, we observed the presence of comorbidity in 44.5% (n=343) of adult patients. Among these patients, comorbidity was observed in 47.8% (n=210) of women and 40.1% (n=133) of men (p=0.031). Upon evaluation of each comorbidity in adults, it was found that 18.8% had hypertension (n=145), 18.2% (n=140) had hyperlipidaemia, 10.4% (n=80) had diabetes, 5.2% (n=40) had hypothyroidism, and 5.2% (n=40) had depression 4.2% (n=32) had anxiety, 4.8% (n=37) had CAD, 1.9% had PsA (n=9), 1.2% (n=9) had cancer. The prevalence of hepatosteatosis was 52.3% (n=123) among adult patients who underwent abdominal ultrasonography. Notably, women exhibited a significantly higher incidence of hepatosteatosis compared to men. Twenty percent of patients with diabetes exhibited HbA1C levels of 9% or greater, while 39 percent of patients with diabetes demonstrated HbA1C levels of 7% or less.

Turk J Clin Res. 2025;1(3):150-155
https://doi.org/10.63909/1453025

The latest studies indicate that patients with moderate and acute psoriasis have an increased mortality rate due to cardiovascular disease and, correspondingly, diabetes, hyperlipoidemia, and hypertension. Several studies have demonstrated that psoriasis is also associated with a high risk of depression (4). In this study, we determined that the most frequent comorbidities in patients with psoriasis, regardless of sex, are hypertension, hyperlipidemia, diabetes, depression, and CHD, while female psoriasis patients have higher rates of hepatosteatosis than male patients.

Metabolic syndrome (MetS) is the most frequent comorbidity in psoriasis (4). Moderate to severe psoriasis is often associated with metabolic disorders such as obesity, diabetes, dyslipidaemia, non-alcoholic hepatosteatosis and MetS (5). Although a causal relationship has not been fully established, genetic factors, inflammatory pathways and/or common environmental factors appear to underlie the development of psoriasis and metabolic comorbidities (4).

In their meta-analysis, Manolis et al. (6) reported that CHD and associated risk factors were higher in psoriasis patients than in a control group. In the same meta-analysis, which explored comorbid psoriasis and CHD in 18 cross-sectional controlled cases, the authors established that psoriasis patients have a higher risk of metabolic syndrome. A French study by Phan et al. (7), in which 2.210 psoriasis patients were assessed, determined that dyslipidemia, hypertension, obesity, and diabetes occurred in psoriasis patients at frequencies of 27.5%, 26%, 24.4%, and 10.9%, respectively. In Topal et al.'s (8) study of 742 psoriasis patients in Turkey, comorbidity frequencies were reported as 14.1% for hypertension,13.8% for diabetes, 7.7% for dyslipidemia, and1.7%for CHD. Our study observed frequencies of 18.8% hypertension,10.4% diabetes, and 18.2% hyperlipidemia. These diseases, which have a metabolic syndrome component—a significant risk factor for CHD-are less frequent than in studies in other regions. The difference between the results may be explained by the prevalence of disease variants in diverse populations; our cross-sectional retrospective study was conducted with monocenter data and involved a relatively small number of patients.

In Western countries, the most common chronic liver disease is nonalcoholic hepatosteatosis, which has a prevalence of 10%–25%. Frequently observed in obese persons, it is considered a hepatic symptom of metabolic syndrome. The correlation of metabolic syndrome with these two diseases may explain the findings of increased nonalcoholic hepatosteatosis frequency in psoriasis patients (9). In their study conducted in Italy, Ortolan et al. (10) observed the presence of nonalcoholic hepatosteatosis in 33% of patients with psoriasis. It was observed that the prevalence of nonalcoholic hepatosteatosis was higher in women with psoriasis than in men with psoriasis, although this difference was not statistically significant. A statistical analysis of the potential risk factors for nonalcoholic hepatosteatosis revealed that diabetes (p=0.002) were significantly associated with the condition. In Narayanasamy et al.'s (11) study of abdominal ultrasonography, the ratio of psoriasis patients with hepatosteatosis, when excluding a history of alcohol use and chronic hepatitis B and C infection, was 45.2%. The authors determined that, compared to the other study, male patients had a higher frequency of nonalcoholic hepatosteatosis than female patients. Mahajan et al. (12) evaluated the effect of liver fibrosis in psoriasis patients, and patients who had been exposed to cumulative methotrexate dosages showed no effect on liver fibrosis; however, female sex and metabolicsyndrome showed significant effects on liver fibrosis. Dogan et al. (13) evaluated 235 medium-severe psoriasis patients and established that 12% had a higher LFT and that 65%of those with a higher LFT had nonalcoholic hepatosteatosis. Karaman et al. (14) retrospective study found the frequency of hepatosteatosis to be 7.1%. In our study, of the 235 adult patients who underwent abdominal ultrasonography, 52.3% had hepatosteatosis. As the study was retrospective in nature, it was not possible to evaluate the alcohol use status of the patients. No patients exhibited evidence of chronic hepatitis B or C infection. Hepatosteatosis was significantly higher in female patients (64.2%) than in male patients.

The relationship between diabetes and psoriasis is clearly specified. The comorbidity of diabetes increases with the severe psoriasis. Patients with psoriasis tend to exhibit a higher requirement for insulin. (15). Onsun et al.'s (16) study in Türkiye indicated that 10.3% of female and 8.3% of male patients had diabetes. Shalomet al.'s

Turk J Clin Res. 2025;1(3):150-155
https://doi.org/10.63909/1453025

(17) study of 3,612 diabetic patients in Israel determined that 43.6% of the patients' HbA1c levels were higher than 7%. In their study examining the relationship between psoriasis and diabetes, Brazelli et al.(18) found that the mean HbA1c level of patients with both conditions was 7.41±1.36. This was significantly higher than the mean HbA1c level of patients in the other groups examined in the study. In the present study, the prevalence of patients with HbA1C values exceeding 7% was observed to be 61%, a figure that exceeds the rates reported in other studies. The target values for HbA1C vary according to the patient's comorbidities and age. However, given that the median age of the patients in our study was 45.0 years, it was observed that HbA1C levels were higher than anticipated, indicating that our patients had poorly controlled diabetes.

Many studies indicate that patients with psoriasis are depressed and inclined to suicide. A large-scale cohort study established that anxiety, depression, and increased inclination toward suicide were higher in severe psoriasis cases (19). McDonough et al.'s (20) study of psoriasis patients in the US established that 24% reported anxiety and 9.6% reported depression. Both conditions were significantly higher among female than male patients. Lamb et al.'s (21) study in the United Kingdom established that 59.9% of the patients had depression, and 13.1% had anxiety. In our study, both conditions were reported more frequently by female patients, although we established that, overall, 5.2% of our patients had depression and 4.2% had anxiety. When compared to studies abroad, our findings showed a lower overall frequency rate, but depression was reported more frequently than anxiety. Despite being statistically insignificant in our study, depression and anxiety rates of systemically treated patients were higher than those of topically treated patients. Given that systemic treatment is the preferred option for those with moderate-to-severe psoriasis, it can be posited that the frequency of both diseases increases in line with the severity of psoriasis.

Research in recent years demonstrates that cancer comorbidity inpatients with psoriasis was higher than that in patients without psoriasis. Chen-Yi Wu et al. (22) evaluated 110.729 psoriasis patients in Taiwan and found that 4.3% had cancer and that comorbidity was significantly higher in male patients than in female patients. In our study, the cancer comorbidity ratio was 1.1%, and it was higher in female patients than in male patients.

As our study is confined to hospital data, our most significant limitation is that we are unable to ascertain the comorbid diagnoses that patients received at other medical centres. Furthermore, the retrospective nature of the study and the relatively small number of patients included must be acknowledged as additional limitations.

This study demonstrates that patients with psoriasis may present with comorbidities that require attention. In particular, fatty liver disease should be considered as a potential comorbidity, with female patients exhibiting a higher prevalence of comorbidities. These findings highlight the importance of incorporating comorbid conditions into the planning of psoriasis treatment.

CONCLUSION

In conclusion, metabolic comorbidities such as hypertension, diabetes mellitus and hyperlipidaemia are frequently observed in people with psoriasis, highlighting the systemic nature of the condition. Although liver function test results are generally normal, the high prevalence of hepatic steatosis suggests that routine screening for fatty liver disease should be considered in this population. Furthermore, the observation that the majority of patients with psoriasis and diabetes exhibit suboptimal glycemic control highlights the necessity of comprehensive metabolic evaluation and targeted management strategies to enhance the overall health of patients with psoriasis. Therefore, patients with psoriasis should undergo comprehensive systemic evaluation.

Acknowledgement: None.

Ethical Approval: Ethical approval for this study was granted by the Non-Interventional Clinical Research Ethics Committee of Karabük University (Approval No: 11691, Date: March 5, 2020).

Author Contributions: Idea/Concept: A.C., H.A.; Design: A.C., H.A.; Supervision: A.C., H.A.; Resources: A.C.; Materials: A.C.; Data Collection and/or Processing: A.C.; Analysis and/or Interpretation: A.C., H.A.; Literature Review: A.C., H.A.; Written by: A.C.; Critical Review: H.A.

Turk J Clin Res. 2025;1(3):150-155
https://doi.org/10.63909/1453025

Conflict of Interest: The authors have no conflict of interest to declare.

Financial Disclosure: There is no financial support or funding for this study.

REFERENCES

1. Saraç G, Kapıcıoğlu Y. Derleme Psoriasisin Etyopatogenezi. Dermatoz. 2015;1:10–3.
2. Coban M, Tasli L, Turgut S, Özkan S, Ata MT, Akn F. Association of adipokines, insulin resistance, hypertension and dyslipidemia in patients with psoriasis vulgaris. Ann Dermatol. 2016;28(1):74–9.
3. Takeshita J, Grewal S, Langan SM, Mehta NN, Ogdie A, Van Voorhees AS, et al. Psoriasis and Comorbid Diseases Part I. Epidemiology Junko. J Am Acad Dermatol. 2017;76(3):377–90.
4. Wu JJ, Kavanaugh A, Lebwohl MG, Gniadecki R, Merola JF. Psoriasis and metabolic syndrome: implications for the management and treatment of psoriasis. J Eur Acad Dermatology Venereol. 2022;36(6):797–806.
5. Gisondi P, Fostini AC, Fossà I, Girolomoni G, Targher G. Psoriasis and the metabolic syndrome. Clin Dermatol. 2018;36(1):21–8.
6. Manolis AA, Manolis TA, Melita H, Manolis AS. Psoriasis and cardiovascular disease: the elusive link. Int Rev Immunol. 2019;38(1):33–54.
7. Phan C, Sigal ML, Lhafa M, Barthélémy H, Maccari F, Estève E, et al. Metabolic comorbidities and hypertension in psoriasis patients in France. Comparisons with French national databases. Ann Dermatol Venereol. 2016;143(4):264–74.
8. Topal İO, Değirmentepe E, Cüre K, Kızıltaç U, Bahçetepe Hökenek N, Kocatürk E. Retrospective Analysis of Clinical and Sociodemographic Features of Patients with Psoriasis. Med J Okmeydani Train Res Hosp. 2017;33(4):199–205.
9. Ganzetti G, Campanati A, Offidani A. Non-alcoholic fatty liver disease and psoriasis: So far, so near. World J Hepatol. 2015;7(3):315–26.
10. Ortolan A, Lorenzin M, Tadiotto G, Russo FP, Oliviero F, Felicetti M, et al. Metabolic syndrome, non-alcoholic fatty liver disease and liver stiffness in psoriatic arthritis and psoriasis patients. Clin Rheumatol. 2019;38(10):2843–50.
11. Narayanasamy K, Sanmarkan AD, Rajendran K, Annasamy C, Ramalingam S. Relationship between psoriasis and non-alcoholic fatty liver disease. Prz Gastroenterol. 2016;11(4):263–9.
12. Mahajan R, Dogra S, Handa S, Razmi TM, Narang T et. al. No Title. Indian J Dermatol Venereol Leprol. 2020;86:649–55.
13. Doğan S, Menteşoğlu D, Atakan N, Şimşek H. A cross-sectional study investigating association of liver diseases in moderate to severe psoriasis patients. Turkderm Turkish Arch Dermatology Venereol. 2019;53(1):15–8.
14. Fettahoglu Karaman, Bilge; Salkin Cinki, Irem Ayse; Aksungur VL. Multicomorbidity in Psoriasis Vulgaris : A Multicomorbidity in Psoriasis Vulgaris : A Retrospective Analysis. Clin Cosmet Investig Dermatol. 2024;7015(17):2437–43.
15. Kalkan G. Comorbidities in psoriasis: The recognition of psoriasis as a systemic disease and current management. Turkderm. 2017;71–7.
16. Onsun N, Su Ö, Erifl Z, Davuto M, Cebeci F. Psoriasisli Hastalarda Diyabet Görülme Sıklığına Karşılık Diyabetli Hastalarda Psoriasis Görülme Sıklığı. Turkderm - Arch Turk Dermatol Venerol. 2010;44:12–4.
17. Shalom G, Shapiro J, Dreiher J, Nathan A, Freud T, Comaneshter D, et al. Glycaemic control in patients with diabetes and concomitant psoriasis. Br J Dermatol. 2016;175(2):428–30.
18. Brazzelli V, Maffioli P, Bolcato V, Ciolfi C, Angelo AD, Tinelli C, et al. Psoriasis and Diabetes , a Dangerous Association : Evaluation of Insulin Resistance , Lipid Abnormalities , and Cardiovascular Risk Biomarkers. Front Med. 2021;8:1–7.
19. Strober B, Gooderham M, de Jong EMGJ, Kimball AB, Langley RG, Lakdawala N, et al. Depressive symptoms, depression, and the effect of biologic therapy among patients in Psoriasis Longitudinal Assessment and Registry (PSOLAR). J Am Acad Dermatol. 2018;78(1):70–80.
20. McDonough E, Ayearst R, Eder L, Chandran V, Rosen CF, Thavaneswaran A, et al. Depression and anxiety in psoriatic disease: Prevalence and associated factors. J Rheumatol. 2014;41(5):887–96.
21. Lamb RC, Matcham F, Turner MA, Rayner L, Simpson A, Hotopf M, et al. Screening for anxiety and depression in people with psoriasis: a cross-sectional study in a tertiary referral setting. Br J Dermatol. 2017;176(4):1028–34.
22. Wu CY, Hu HY, Li CP, Chou YJ, Chang YT. Comorbidity profiles of psoriasis in Taiwan: A latent class analysis. PLoS One. 2018;13(2):1–10.