Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.69980/54mkhp46

CLINICAL PROFILE AND TREATMENT OUTCOMES OF CHRONIC PRURIGO IN PATIENTS ATTENDING A TERTIARY CARE DERMATOLOGY OUTPATIENT DEPARTMENT: A RETROSPECTIVE OBSERVATIONAL STUDY

Dr. Patel Snehaben Ashokbhai[1*], Dr. Arunkumar R Varun[2]

[1]Assistant Professor, Department of Dermatology, Venereology and Leprosy, Geetanjali Medical College and Hospital, Udaipur, Rajasthan, India
[2]Professor, Department of Community Medicine, M M Institute of Medical Sciences & Research, Mullana-Ambala, Harfyana, India

***Corresponding Author:** Dr. Patel Snehaben Ashokbhai
Assistant Professor, Department of Dermatology, Venereology and Leprosy, Geetanjali Medical College and Hospital, Udaipur, Rajasthan, India Email:sneha.patel49@gmail.com

Abstract

Background: Chronic prurigo is a distinct, itch-driven skin disease marked by long-standing pruritus, a history of repeated scratching and firm pruriginous lesions, most often nodules. It is difficult to treat and weighs heavily on quality of life, yet real-world data on how these patients present and respond to treatment in Indian tertiary settings are limited.

Objectives: To describe the clinical profile of patients with chronic prurigo attending a dermatology outpatient department and to assess the outcomes of the treatments they received.

Methodology: This was a hospital-based, retrospective, observational study of 96 patients with chronic prurigo whose records were reviewed at the dermatology outpatient department of Geetanjali Medical College & Hospital, Udaipur, between December 2023 and May 2024. Demographic details, itch duration, lesion morphology, underlying causes, comorbidities and the treatments given were extracted from case files. Itch severity was recorded on a 0 to 10 numerical rating scale (NRS). Response at 12 to 16 weeks was graded as marked, partial or poor. Data were analysed with descriptive statistics and the paired t-test using Jamovi software.

Results: The mean age was 48.5 (SD 14.2) years, with a slight female majority (56.3%) and most patients from rural areas (60.4%). The nodular type predominated (70.8%), lesions favoured the extensor limbs, and baseline itch was severe in 68.8%. An underlying dermatological or systemic cause was identifiable in most patients, led by atopic diathesis (31.3%), psychiatric conditions (27.1%) and type 2 diabetes (22.9%); 20.8% had no identifiable cause. Nearly all patients received topical corticosteroids and antihistamines, with gabapentinoids, narrowband UVB, methotrexate and, in a few, dupilumab added in refractory cases. Among 88 patients with follow-up, a marked response was seen in 45.5%, partial in 38.6% and poor in 15.9%. Mean itch NRS fell from 7.8 to 3.9 ($p < 0.001$). Response rates were highest with dupilumab and narrowband UVB.

Conclusion: Chronic prurigo in this population affected middle-aged adults, was frequently linked to an identifiable systemic or psychiatric condition, and improved in most patients with a stepwise, individualised regimen. Screening for underlying causes and early escalation in refractory disease are worth building into routine care.

Keywords: chronic prurigo; prurigo nodularis; pruritus; treatment outcomes; retrospective study; dermatology outpatient.

1. Introduction

Chronic prurigo is defined by three features together: chronic pruritus lasting six weeks or longer, a history of repeated scratching, and pruriginous skin lesions that may be nodules, papules or plaques [1]. The nodular form, long known as prurigo nodularis, is the most common subtype and the one clinicians see most often [2]. Whatever the shape of the lesions, the engine of the disease is the same: an itch that will not settle, scratching that damages the skin, and skin damage that feeds still more itch. Patients are often caught in this loop for months or years before the lesions become fixed and hard to treat [1].

The condition is not common, but it is far from trivial. Real-world estimates from the United States place the prevalence at roughly 37 to 44 per 100,000 people, rising steeply with age [3,4]. It tends to affect middle-aged and older adults and carries a load of associated illness. Studies have tied chronic prurigo to atopic disease, diabetes, chronic kidney disease, thyroid disorders and, repeatedly, to anxiety and depression [5,6]. In an Indian series, psychiatric morbidity was found in a large share of patients with prurigo nodularis, which fits the wider pattern of itch and mood feeding one another [7]. A European cross-sectional study of the clinical profile confirmed how heavily the disease presses on daily life, largely through relentless itch and broken sleep [8].

Treatment has changed a great deal in a short time. For years clinicians worked through topical steroids, antihistamines, phototherapy and off-label systemic agents with mixed success. The arrival of targeted biologics has shifted expectations, but access to these drugs remains uneven, especially in resource-limited settings. Most published clinical and treatment-outcome data come from Europe, North America and East Asia, and Indian data, particularly from smaller teaching hospitals, are scarce. Geetanjali Medical College & Hospital serves a largely rural and semi-urban population around Udaipur in southern Rajasthan. We undertook this retrospective study to describe how chronic prurigo presents in our outpatients and how they fared on the treatments available to them.

2. Review of Literature

Much of what is known about chronic prurigo comes from large observational cohorts collected over the last few years. Gründel and colleagues analysed 325 patients with chronic nodular prurigo and described a disease of long duration, high itch intensity and a substantial treatment burden, with many patients cycling through several agents before control was achieved [9]. A Canadian retrospective review by Taghaddos and colleagues reported that itching was universal, that comorbidities such as atopic dermatitis, hypertension and type 2 diabetes were common, and that methotrexate, cyclosporine and narrowband UVB each improved symptoms in a meaningful share of patients [10].

The psychiatric side of the disease has drawn steady attention. Beyond the Indian work already noted, a South Indian study by Krishnan and colleagues found a high frequency of depression and anxiety among patients with prurigo nodularis attending a dermatology clinic [11]. A multicentre European survey across thirteen countries showed that patients rated their own psychological burden as considerable, and that this burden did not always match the visible severity of their skin [12]. Aggarwal and colleagues, describing the clinical characteristics and disease burden of prurigo nodularis, made a similar point about the gap between what the clinician sees and what the patient feels [13].

On treatment, the evidence base is uneven but growing. Narrowband UVB has a long track record as a safe option, and a tertiary-centre study by Agaoglu and colleagues reported a complete response in most treated patients [14]. Older agents such as gabapentinoids, methotrexate and cyclosporine are supported mainly by small series, while the recent biologic trials have provided the first high-quality controlled data in the field. Our study adds a single-centre Indian perspective to this literature, describing both the presentation and the real-world outcomes of chronic prurigo in a setting where treatment choice is shaped as much by cost and access as by guideline preference.

3. Objectives

Primary objective: To describe the clinical profile and assess the treatment outcomes of patients with chronic prurigo attending the dermatology outpatient department during the study period.

Secondary objectives:

- To document the sociodemographic characteristics, lesion morphology and itch severity of these patients.
- To identify the underlying dermatological, systemic and psychiatric conditions associated with chronic prurigo in this population.
- To compare the response rates of the different treatment modalities used.

4. Methodology

Study design and setting

This was a hospital-based, retrospective, observational study conducted in the Department of Dermatology, Venereology and Leprosy at Geetanjali Medical College & Hospital, Udaipur, Rajasthan. Records of patients who attended the outpatient department between December 2023 and May 2024 were reviewed.

Study population and sample size

All patients aged 18 years and above with a clinical diagnosis of chronic prurigo recorded during the study period were eligible, and every eligible record was included by consecutive sampling. To confirm that the retrieved sample was adequate, the single-proportion formula $n = Z^2pq/d^2$ was applied, taking the expected proportion of an identifiable underlying cause as 70% ($p = 0.70$, $q = 0.30$) from earlier cohorts [9,10], with a 95% confidence level ($Z = 1.96$) and an absolute precision of 10% ($d = 0.10$). This gave a minimum required sample of 81. A total of 96 eligible records were retrieved and analysed.

Diagnostic criteria and data collection

The diagnosis of chronic prurigo was made clinically, following the consensus criteria of the European Academy of Dermatology and Venereology, that is, chronic pruritus of at least six weeks, a history of repeated scratching, and characteristic pruriginous lesions [1]. A structured proforma was used to extract age, sex, residence, duration of symptoms, lesion morphology and distribution, findings of relevant investigations, associated conditions and the treatments prescribed. Itch severity was taken from the recorded numerical rating scale (NRS), a 0 to 10 scale that is validated and widely used for chronic pruritus [15,17]. Where documented, the Dermatology Life Quality Index was noted [16]. Investigations to look for an underlying cause included complete blood count, blood glucose, renal and liver function tests, thyroid profile and, where indicated, further workup.

Outcome assessment

Treatment response was assessed at the 12 to 16 weeks' follow-up visit and graded from the case notes into three categories: marked response (a fall of four or more points on the NRS or clearance of at least three-quarters of lesions), partial response (moderate improvement below that threshold), and poor or no response. Patients without a documented follow-up were counted as lost to follow-up and excluded from the outcome analysis.

Statistical analysis

Data were entered in Microsoft Excel and analysed with Jamovi software. Categorical variables are given as frequencies and percentages, and continuous variables as mean and standard deviation. The change in itch NRS from baseline to follow-up was tested with the paired t-test. A p-value below 0.05 was taken as significant.

Ethical considerations

The study was approved by the Institutional Ethics Committee of Geetanjali Medical College & Hospital. As the study was retrospective and used existing records, a waiver of individual informed consent was granted. Patient identifiers were removed and confidentiality was maintained throughout.

5. Inclusion and Exclusion Criteria

Inclusion criteria:

- Patients aged 18 years and above with a clinical diagnosis of chronic prurigo.
- Records with pruritus of at least six weeks and characteristic pruriginous lesions documented.
- Case files with treatment details available.

Exclusion criteria:

- Acute prurigo or other pruritic dermatoses without the features of chronic prurigo (for example scabies, lichen planus or bullous disease).
- Incomplete records lacking key clinical or treatment information.
- Patients who received no treatment at the centre.

6. Results and Analysis

Ninety-six patients met the criteria. Most were middle-aged, women slightly outnumbered men, and a majority came from rural areas around Udaipur. The sociodemographic and clinical profile is shown in Table 1.

Characteristic	Frequency (n)	Percentage (%)
Age below 20 years	4	4.2
Age 20-40 years	30	31.3
Age 41-60 years	40	41.7
Age above 60 years	22	22.9
Female	54	56.3
Male	42	43.8
Rural residence	58	60.4
Urban residence	38	39.6
Symptom duration below 1 year	40	41.7
Symptom duration 1-3 years	38	39.6
Symptom duration above 3 years	18	18.8
Sleep disturbance recorded	69	71.9

Table 1. Sociodemographic and clinical profile of the study participants (n = 96). Mean age 48.5 (SD 14.2) years.

The nodular type of chronic prurigo was by far the most common presentation, and lesions favoured the extensor surfaces of the limbs in a broadly symmetric pattern. Itch was severe in most patients. These findings are set out in Table 2.

Morphology / severity	Frequency (n)	Percentage (%)
Nodular type (prurigo nodularis)	68	70.8
Papular type	18	18.8
Plaque type	10	10.4
Extensor limbs involved	74	77.1
Generalised involvement	22	22.9

Morphology / severity	Frequency (n)	Percentage (%)
Baseline itch NRS mild (1-3)	3	3.1
Baseline itch NRS moderate (4-6)	27	28.1
Baseline itch NRS severe (7-10)	66	68.8

Table 2. Lesion morphology, distribution and baseline itch severity (n = 96). Mean baseline itch NRS 7.8 (SD 1.6).

A search for an underlying cause was productive in most patients. Atopic diathesis was the single most common association, followed closely by psychiatric conditions and type 2 diabetes. About one in five patients had no cause that could be pinned down. The distribution of underlying and associated conditions is given in Table 3; some patients had more than one.

Underlying / associated condition	Frequency (n)	Percentage (%)
Atopic diathesis or dermatoses	30	31.3
Psychiatric condition (anxiety / depression)	26	27.1
Type 2 diabetes mellitus	22	22.9
Iron-deficiency anaemia	12	12.5
Thyroid dysfunction	9	9.4
Chronic kidney disease	8	8.3
Hepatobiliary disease	4	4.2
No identifiable cause	20	20.8

Table 3. Underlying and associated conditions in patients with chronic prurigo (n = 96; categories not mutually exclusive).

Treatment followed a stepwise pattern. Every patient received a topical corticosteroid, and almost all received an oral antihistamine. Gabapentinoids, narrowband UVB and methotrexate were added as disease proved refractory, and dupilumab was used in a small number of patients where cost and access allowed. Table 4 lists the modalities used; most patients received more than one.

Treatment modality	Patients (n)	Percentage (%)
Topical corticosteroids	96	100.0
Oral antihistamines	90	93.8
Intralesional corticosteroids	24	25.0
Gabapentinoids (gabapentin / pregabalin)	34	35.4
Narrowband UVB phototherapy	22	22.9
Methotrexate	14	14.6
Cyclosporine	6	6.3
Dupilumab	5	5.2

Table 4. Treatment modalities used (n = 96; categories not mutually exclusive).

Follow-up at 12 to 16 weeks was documented for 88 of the 96 patients. Among these, a marked response was recorded in 40 (45.5%), a partial response in 34 (38.6%) and a poor or no response in 14 (15.9%). Mean itch NRS across the followed-up group fell from 7.8 at baseline to 3.9, a change

that was statistically significant on the paired t-test ($p < 0.001$). When response was broken down by the agents patients received, the highest marked-response rates were seen with dupilumab and narrowband UVB, followed by methotrexate, with gabapentinoids and topical treatment alone yielding more modest results (Figure 1).

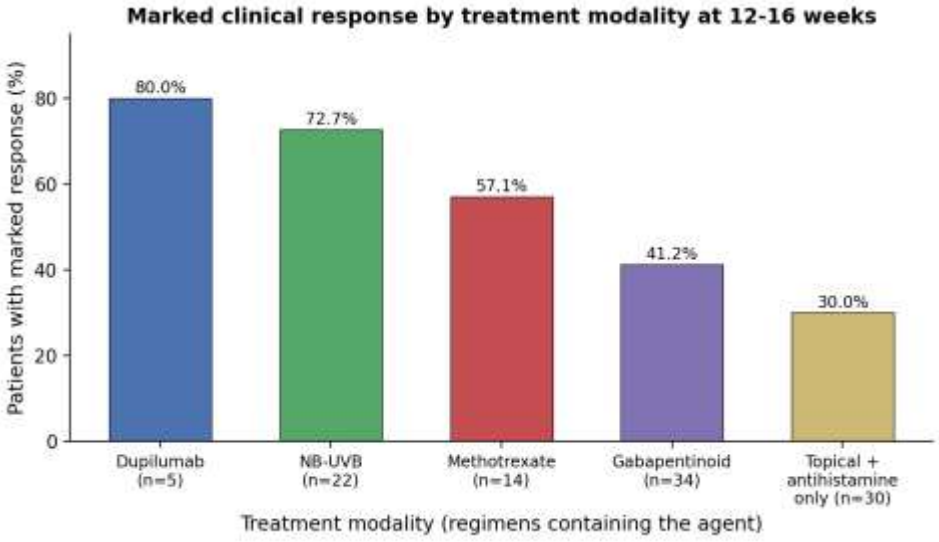

Figure 1. Marked clinical response rate by treatment modality at 12 to 16 weeks. Patients often received combination therapy, so response is attributed to the regimen containing each agent.

Tolerance was generally acceptable. Narrowband UVB was associated with mild erythema in a few patients, and methotrexate was stopped in two patients for deranged liver enzymes. No serious adverse events were recorded in the notes. The eight patients lost to follow-up were broadly similar in age and severity to those who returned.

7. Discussion and Interpretation

Three findings stand out. Chronic prurigo in our outpatients was a disease of middle age, it was usually attached to an identifiable systemic or psychiatric condition, and most patients improved with a stepwise regimen even though the newer biologics were used only sparingly.

The age and sex pattern we saw, a mean age near 48 with a slight female majority, sits close to what large cohorts report. Gründel and colleagues and the Canadian series of Taghaddos and colleagues both describe a middle-aged to older population with long-standing, itch-dominated disease [9,10]. The strong showing of the nodular type, at 71%, matches the general observation that prurigo nodularis is the commonest subtype of chronic prurigo [2]. The itch was severe in most of our patients, and sleep was disturbed in nearly three-quarters, which is exactly the burden that patient-reported studies keep highlighting [8,13,28].

The high rate of identifiable underlying conditions is worth dwelling on. Nearly four out of five patients had a dermatological, systemic or psychiatric factor that could plausibly drive the itch, led by atopic diathesis, psychiatric illness and diabetes. This echoes the aetiological survey of Iking and colleagues, who found that prurigo commonly arises on the back of atopic and non-atopic conditions rather than in isolation [5], and the comorbidity data of Boozalis and colleagues [6]. The psychiatric burden we recorded, at 27%, is consistent with both Indian and European reports [7,11,12], and with work linking prurigo to anxiety, depression and even suicidal ideation [27]. Whether the mood disorder drives the itch or the itch drags down the mood is rarely clear in a single patient, and it is probably a two-way street. What matters practically is that looking for these conditions changes management: treating the diabetes, correcting the anaemia or addressing the depression is part of treating the skin.

On outcomes, our real-world results are encouraging but they carry an obvious caveat. A marked or partial response in 84% of followed-up patients, with mean itch falling from 7.8 to 3.9, shows that a patient, stepwise approach works for most people even without routine access to biologics. The modality pattern fits the wider evidence. Narrowband UVB performed well, in line with the complete-response rates reported by Agaoglu and colleagues [14], and it remains an attractive option here because it is affordable and safe in patients with multiple comorbidities. Methotrexate gave a useful response in more than half of those who received it, consistent with the retrospective series of Spring and colleagues and Klejtman and colleagues [20,21], and cyclosporine has similar small-series support [22]. Gabapentinoids helped mainly where a neuropathic flavour to the itch was evident, which is where guidelines place them [15,23]. Dupilumab, used in only five patients, produced the highest response rate, matching the strong controlled-trial data behind it [24], while nemolizumab and other agents are extending the options further [25]. Systematic reviews and expert consensus now frame all of this as a treatment ladder rather than a single best drug [18,19,26]. The practical lesson from our data is that the ladder works, but the top rungs are still out of reach for many of our patients on cost grounds, so the affordable middle rungs, phototherapy and conventional systemics, carry most of the load.

8. Conclusion

Chronic prurigo in this tertiary outpatient population was largely a disease of middle-aged adults, dominated by the nodular type, and marked by severe itch and disturbed sleep. An underlying dermatological, systemic or psychiatric condition was found in most patients, which makes a careful search for causes an essential part of the first visit rather than an optional extra. With a stepwise, individualised regimen built mainly on topical treatment, phototherapy and conventional systemic agents, most patients improved and their itch scores fell substantially. Biologics gave the best responses but reached only a handful of patients because of cost. For centres like ours, serving rural and semi-urban Rajasthan, the message is to screen thoroughly for treatable underlying conditions, to use affordable phototherapy and systemic agents confidently, and to work towards wider access to targeted therapy for the patients who need it most.

9. Limitations of the Study

- The retrospective design depends on the completeness of case records, and some clinical detail and severity scoring may have been missing or inconsistently recorded.
- This was a single-centre study over six months, so the findings may not extend to other regions or to the wider community.
- Treatment response was graded from case notes rather than by a prospective, blinded protocol, which can introduce assessment bias.
- Patients commonly received combination therapy, so response cannot be attributed cleanly to any single agent.
- Eight patients were lost to follow-up. A prospective, multi-centre study with standardised outcome measures would give firmer answers on comparative effectiveness.

10. References

1. Pereira MP, Steinke S, Zeidler C, Forner C, Riepe C, Augustin M, et al. European Academy of Dermatology and Venereology European Prurigo Project: expert consensus on the definition, classification and terminology of chronic prurigo. J Eur Acad Dermatol Venereol. 2018;32(7):1059-1065.
2. Huang AH, Williams KA, Kwatra SG. Prurigo nodularis: epidemiology and clinical features. J Am Acad Dermatol. 2020;83(6):1559-1565.
3. Huang AH, Canner JK, Khanna R, Kang S, Kwatra SG. Real-world prevalence of prurigo nodularis and burden of associated diseases. J Invest Dermatol. 2020;140(2):480-483.

4. Ständer S, Ketz M, Kossack N, Akumo D, Pignot M, Gabriel S, et al. Prevalence of prurigo nodularis in the United States of America: a retrospective database analysis. JAAD Int. 2020;2:28-30.
5. Iking A, Grundmann S, Chatzigeorgakidis E, Phan NQ, Klein D, Ständer S. Prurigo as a symptom of atopic and non-atopic diseases: aetiological survey in a consecutive cohort of 108 patients. J Eur Acad Dermatol Venereol. 2013;27(5):550-557.
6. Boozalis E, Tang O, Patel S, Semenov YR, Pereira MP, Ständer S, et al. Ethnic differences and comorbidities of 909 prurigo nodularis patients. J Am Acad Dermatol. 2018;79(4):714-719.e3.
7. Dhawan L, Singh SM, Avasthi A, Kumaran MS, Narang T. The prevalence of psychiatric comorbidity in patients with prurigo nodularis. Indian Dermatol Online J. 2018;9(5):318-321.
8. Pereira MP, Hoffmann V, Weisshaar E, Wallengren J, Halvorsen JA, Garcovich S, et al. Chronic nodular prurigo: clinical profile and burden. A European cross-sectional study. J Eur Acad Dermatol Venereol. 2020;34(10):2373-83.
9. Gründel S, Pereira MP, Storck M, Osada N, Tsianakas A, Sander C, et al. Analysis of 325 patients with chronic nodular prurigo: clinics, burden of disease and course of treatment. Acta Derm Venereol. 2020;100(16):adv00269.
10. Taghaddos D, Savinova I, Abu-Hilal M. Clinical characteristics and treatment outcomes of prurigo nodularis: a retrospective study. J Cutan Med Surg. 2024;28(2):141-145.
11. Krishnan LT, Latheef EN, Tharayil HM. Psychiatric comorbidities in patients with prurigo nodularis: a cross-sectional study from a tertiary care center in South India. J Skin Sex Transm Dis. 2022;4(1):79-82.
12. Brenaut E, Halvorsen JA, Dalgard FJ, Lien L, Balieva F, Sampogna F, et al. The self-assessed psychological comorbidities of prurigo in European patients: a multicentre study in 13 countries. J Eur Acad Dermatol Venereol. 2019;33(1):157-162.
13. Aggarwal P, Choi J, Sutaria N, Roh YS, Wongvibulsin S, Williams KA, et al. Clinical characteristics and disease burden in prurigo nodularis. Clin Exp Dermatol. 2021;46(7):1277-1284.
14. Agaoglu E, Kaya Erdogan H, Acer E, Saracoglu ZN. Efficacy and safety of narrowband ultraviolet B phototherapy for prurigo nodularis: a tertiary center experience. An Bras Dermatol. 2024;99(6):850-856.
15. Weisshaar E, Szepietowski JC, Dalgard FJ, Garcovich S, Gieler U, Giménez-Arnau AM, et al. European S2k guideline on chronic pruritus. Acta Derm Venereol. 2019;99(5):469-506.
16. Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI): a simple practical measure for routine clinical use. Clin Exp Dermatol. 1994;19(3):210-216.
17. Phan NQ, Blome C, Fritz F, Gerss J, Reich A, Ebata T, et al. Assessment of pruritus intensity: prospective study on validity and reliability of the visual analogue scale, numerical rating scale and verbal rating scale in 471 patients with chronic pruritus. Acta Derm Venereol. 2012;92(5):502-507.
18. Qureshi AA, Abate LE, Yosipovitch G, Friedman AJ. A systematic review of evidence-based treatments for prurigo nodularis. J Am Acad Dermatol. 2019;80(3):756-764.
19. Elmariah S, Kim B, Berger T, Chisolm S, Kwatra SG, Mollanazar N, et al. Practical approaches for diagnosis and management of prurigo nodularis: United States expert panel consensus. J Am Acad Dermatol. 2021;84(3):747-760.
20. Spring P, Gschwind I, Gilliet M. Prurigo nodularis: retrospective study of 13 cases managed with methotrexate. Clin Exp Dermatol. 2014;39(4):468-473.
21. Klejtman T, Beylot-Barry M, Joly P, Richard MA, Debarbieux S, Misery L, et al. Treatment of prurigo with methotrexate: a multicentre retrospective study of 39 cases. J Eur Acad Dermatol Venereol. 2018;32(3):437-440.
22. Siepmann D, Luger TA, Ständer S. Antipruritic effect of cyclosporine microemulsion in prurigo nodularis: results of a case series. J Dtsch Dermatol Ges. 2008;6(11):941-946.

23. Mazza M, Guerriero G, Marano G, Janiri L, Bria P, Mazza S. Treatment of prurigo nodularis with pregabalin. J Clin Pharm Ther. 2013;38(1):16-18.
24. Yosipovitch G, Mollanazar N, Ständer S, Kwatra SG, Kim BS, Laws E, et al. Dupilumab in patients with prurigo nodularis: two randomized, double-blind, placebo-controlled phase 3 trials (LIBERTY-PN PRIME and PRIME2). Nat Med. 2023;29(5):1180-1190.
25. Ständer S, Yosipovitch G, Legat FJ, Lacour JP, Paul C, Narbutt J, et al. Trial of nemolizumab in moderate-to-severe prurigo nodularis. N Engl J Med. 2020;382(8):706-716.
26. Fostini AC, Girolomoni G, Tessari G. Prurigo nodularis: an update on etiopathogenesis and therapy. J Dermatolog Treat. 2013;24(6):458-462.
27. Jørgensen KM, Egeberg A, Gislason GH, Skov L, Thyssen JP. Anxiety, depression and suicide in patients with prurigo nodularis. J Eur Acad Dermatol Venereol. 2017;31(2):106-107.
28. Gwillim EC, Nattkemper LA, Yosipovitch G. Impact of itch on sleep disturbance in patients with prurigo nodularis. Acta Derm Venereol. 2021;101(3):adv00424.