SJIF Impact Factor: 6.711

WORLD JOURNAL OF ADVANCE HEALTHCARE RESEARCH

ISSN: 2457-0400
Volume: 9.
Issue: 1
Page N. 174-179
Year: 2025

Original Article www.wjahr.com

# GUSELKUMAB İN THE MANAGEMENT OF HİDRADENİTİS SUPPURATİVA İN PATİENTS WİTH CONCOMİTANT PSORİASİS; A RETROSPECTİVE STUDY AND SYSTEMATİC REVİEW OF THE LİTERATURE

**[1*]Meltem Turkmen, [2]Sinan Dogan and [3]Begum Basak**

[1]Associate Professor, MD, University of Health Sciences, Izmir City Hospital, Izmir, Turkey.
[2]MD, Izmir Cıglı Training and Research Hospital, Dermatology Department, Izmir, Turkey.
[3]MD, University of Health Sciences, Izmir City Hospital, Izmir, Turkey.

**Article Received date:** 18 November 2024 **Article Revised date:** 08 December 2024 **Article Accepted date:** 28 December 2024

***Corresponding Author: Meltem Turkmen**

Associate Professor, MD, University of Health Sciences, Izmir City Hospital, Izmir, Turkey.

## ABSTRACT

**Background**: Hidradenitis suppurativa (HS) is a chronic, inflammatory skin disease whose pathogenesis is poorly understood. Adalimumab, is the only approved biological treatment for patients with HS, and some patients do not reach an optimal response, or experience a progressive response loss, needing therapeutic alternatives. Interleukin (IL)-23 is implicated in the pathogenesis of HS. Guselkumab is a monoclonal antibody targeting the p19 subunit of extracellular IL-23. Recently some authors have reported its effectiveness in patients with HS refractory to other systemic treatments. **Objectives**: The objective of this study is to evaluate the outcomes obtained with guselkumab treatment in ten patients with HS concomitantly with psoriasis. **Methods**: Ten patients with HS concomitantly with psoriasis who were receiving guselkumab monotherapy treatment for psoriasis at our dermatology unit were evaluated retrospectively. The primary efficacy end point was the proportion of the patients with a clinical response at week 24, defined according to the Hidradenitis Suppurativa Clinical Response (HiSCR). **Results:** Number of total nodules all the patients at the baseline and W24 were 10,6±2, 1; 43, 21±1, 2, respectively. Number of total abscesses at the baseline and W24 were 9, 4±3, 1; 2, 9±1, 3, respectively. Number of draining fistula at the baseline and W24 were 5, 3±2, 4; and 1, 82±1, 4, respectively. All patients reached Hidradenitis Suppurativa Clinical Response (HiSCR). **Conclusion:** Due to the promising results in these patients together with the observed good tolerability, we suggest that guselkumab may have a future role in the treatment of HS in the presence or absence of a concomitant psoriatic condition.

**KEYWORDS**: hidradenitis suppurativa, guselkumab, treatment.

## INTRODUCTİON

Hidradenitis suppurativa (HS) is a chronic skin disease characterized by auto-inflammation resulting in abscesses, nodules, fistula and scaring in apocrine gland-bearing areas.[1] Although its etiology and pathogenesis remain uncertain, defective follicular support may play a role.[2] It is known as one of the most life restricting diseases in dermatology with highly negative effects regarding the Dermatology Life Quality Index (DLQI).[3] Adalimumab is the only Food and Drug Administratione approved medication for moderate to severe HS but a primary or secondary loss of response has been observed in some patients.[2] Additionally, there is a need for new treatment, and effective therapy remains a serious challenge. Guselkumab is a monoclonal antibody targeting the p19 subunit of extracellular IL-23, and it is currently approved for the treatment of moderate to severe cutaneous psoriasis and psoriatic arthritis in adults.[3] Some authors have recently demonstrated off-label guselkumab effectiveness in patients with moderate to severe HS refractory to adalimumab and other systemic treatments, becoming a hope for some patients.[4-6]

The objective of this study is to evaluate the outcomes obtained with guselkumab treatment in patients with HS concomitantly with psoriasis and to assess all the published scientific research on its use on patients with HS.

## MATERİALS AND METHODS

Ten patients with HS concomitantly with psoriasis who were receiving guselkumab monotherapy treatment for psoriasis at our dermatology unit were evaluated

retrospectively. Data were collected from March 2022 to August 2023. The demographic and clinical characteristics of patients (age, gender, previous treatments for HS including systemic and biologic therapies, risk factors for HS and Hurley stages) were analyzed. All patients met the following criteria: (a) age older than 18 years, (b) had HS lesions in two distinct anatomic areas, (c) resistant to systemic conventional treatments, and (d) treated with guselkumab for at least 24 weeks.

Guselkumab 100 mg administered by subcutaneous injection at weeks 0 and 4, followed by a maintenance dose every 8 weeks as used in psoriasis treatment.

The primary efficacy end point was the proportion of the patients with a clinical response at week 24, defined according to the Hidradenitis Suppurativa Clinical Response (HiSCR). HiSCR is defined by the status of three types of lesions: abscesses, inflammatory nodules and draining fistulas. In patients, nodules, abscesses and fistulas were determined at the beginning (W0) as well as the week 12 (W12) and 24 (W24) of the guselkumab treatment.

The proposed definition of responders to treatment (HiSCR achievers) is: (i) at least a 50% reduction in total abscess and inflammatory-nodules, (ii) no increase in the number of abscesses, and (iii) no increase in the number of draining fistulas from baseline. Major secondary end points included change from baseline in Dermatology Life Quality Index (DLQI) and The Visual Analogue Scale (VAS) which measures pain intensity. The VAS consists of a 10 cm line, with two end points representing 0 ('no pain') and 10 ('pain as bad as it could possibly be'). The values of DLQI and VAS scores recorded at the beginning, weeks 12 and 24 of the treatment.

**Statistical analysis**

Statistical analysis was performed with IBM SPSS 20.0 software. Comparison of variables within the same group overtime was performed with the Friedman test followed by post hoc Dunn's multiple comparison test. Comparison of variables in two groups at the same time point was performed with the Mann Whitney U test. All tests were two-tailed and the level of significance was set at $p<0.05$. All values are showed as mean (SEM) unless otherwise stated.

## RESULTS

Ten patients were included in the study, 4 females (40%) and 6 males (60%) with a Hurley stage of II (20%) and III (80%). The median age of patients in the cohort was 38,3+/-8,7. Comorbidities and previous biological treatments were included in Table 1. Six patients (60 %) were smokers and five (50%) were obese. All patients concomitantly with psoriasis and also 5 patients had arthritis (50%) and 2 patients has crohn's disease (20%). Five patients (50%) had previously received two or more biological treatments before guselkumab administration, including adalimumab, other TNF alpha inhibitor as infliximab and interleukin (IL) 17-A inhibitör as secukinumab.

Number of total nodules all the patients at the baseline, W12 and W24 were 10,6±2,1; 4,81±3,2; 3,21±1,2, respectively. Number of total abscesses at the baseline, W12 and W24 were 9,4±3,1; 3,3±1,7; 2,9±1,3, respectively. Number of draining fistula at the baseline, W12 and W24 were 5,3±2,4; 2,09±1,3 and 1,82±1,4, respectively. (Figure 1) All patients reached Hidradenitis Suppurativa Clinical Response (HiSCR). Before the treatment, the mean life quality index score was 24,4 and after 24 weeks, the score decreased to 5,2 and there was a significant improvement in the quality of life of the patients. Pain scores of 6,7 before the treatment were reduced to 1,7 in the 24th week of treatment. The results obtained are shown in table 2. No side effects were observed during adalimumab treatment.

**Guselkumab treatment outcomes in a patient with different biologic therapy experience status**

A 42-year-old male, obese (BMI = 35.3)patient with psoriasis and arthritis was referred to our center in 2021. The patient also reported history of hidradenitis suppurativa from the age of 29 and he was cyclically in therapy with topical treatments, clindamycin, rifampicin and acitretin. In 2021, adalimumab was started until discontinuation in 2023 due to loss of efficacy in both psoriasis and HS symptoms. (Figure 2) In 2023 therapy with guselkumab was started. Patient response was excellent from the first 8 weeks of treatment (Figure 3), and subsequent complete disease remission. (Figure 4).

**Table 1: Characteristics of our patients with HS treated with guselkumab.**

| Case | sex | age | HS risk factors | Other inflammatory disorder | Previous treatments | Hurley |
|---|---|---|---|---|---|---|
| 1 | M | 36 | Smoker | Psoriasis Crohn's disease Arthritis | doxycycline, corticosteroids, rifampicin, clindamycine dapsone surgery, infliximab, adalimumab, secukinumab | III |
| 2 | M | 47 | DM | Psoriasis Arthritis | doxycycline, clindamycine, ciclosporin, isotretinoin, methotrexate, surgery, adalimumab, infliximab | II |
| 3 | M | 42 | Obesity Smoker | Psoriasis | doxycycline, clindamycine, asitretine isotretinoin, methotrexate, surgery, | III |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | adalimumab | |
| 4 | F | 35 | Obesity | Psoriasis Crohn's disease | spironolactone, isotretinoin, antibiotics, adalimumab | III |
| 5 | F | 34 | Smoker | Psoriasis Arthritis | topical treatments, clindamycin, rifampicin, adalimumab | III |
| 6 | F | 31 | Obesity Smoker | Psoriasis | topical treatments, clindamycin, rifampicin, adalimumab | III |
| 7 | M | 43 | Obesity | Psoriasis | doxycycline, adalimumab, infliximab, secukinumab | III |
| 8 | M | 37 | Smoker | Psoriasis Arthritis | doxycycline, clindamycin, adalimumab, infliximab, secukinumab | II |
| 9 | M | 42 | Obesity | Psoriasis Arthritis | topical treatments, clindamycin, rifampicin, acitretin adalimumab | III |
| 10 | F | 36 | Smoker | Psoriasis | topical treatments, clindamycin, rifampicin, adalimumab, secukinumab, | III |

**Table 2: Outcomes of our patients with HS treated with guselkumab.**

| | Baseline | W12 | W24 |
|---|---|---|---|
| Total nodules (n) | 10,6±2,1 | 4,81±3,2 | 3,21±1,2 |
| Total abscesses (n) | 9,4±3,1 | 3,3±1,7 | 2,9±1,3 |
| Draining fistula (n) | 5,3±2,4 | 2,09±1,3 | 1,82±1,4 |
| DLQI | 24,4±5,1 | 6,5±4,3 | 5,2±3,1 |
| VAS scores for pain | 6,7±2,3 | 1,8±1,1 | 1,7±1,3 |

**Table 3: Data in the literature exploring the use of guselkumab in HS treatment.**

| Authors | Study Design | Patient Enrolled | Efficacy |
|---|---|---|---|
| Kimball et al.[11] | Phase 2, multicenter, randomized, placebo-controlled, duble-blind study | 184 patients enrolled,<br>3 patient drop out.<br><br>The study was set up for 36 weeks of treatment and included 4 arms: guselkumab, intravenous guselkumab, guselkumab from weeks 12 to 36, and the placebo group. The primary endpoint was HiSCR 16, 40, and 4 weeks after the end of treatment. | Although guselkumab SC or IV resulted in numerically higher HiSCR than the placebo at week 16 statistical significance was not achieved. The results did not improve at week 40, and the authors concluded that the primary endpoint was not met; therefore, guselkumab did not appear to be effective. |
| Dudink et al.[12] | Phase 2a, open-label, multicenter study | 20 patients enrolled,<br>2 patients drop out<br><br>The study lasted 24 weeks divided into 16 weeks of treatment and 8 weeks of follow-up; the primary endpoint was achievement of HiSCR at week 16. | Almost 65% of patients achieved HiSCR and 35% achieved a 75% improvement in HiSCR. The authors conclude the study stating that IL-23 inhibition does not appear to be central to the pathophysiology of HS and that guselkumab has been shown to be effective only in certain subtypes of HS patients. |
| Casseres et al.[13] | Case series | 8 patients who had previously failed biological therapies | The authors reported an improvement in five (%63) patients after 4 months of therapy. |
| Vilchez et al.[15] | Case series | 4 patients who had previously failed biological therapies | The authors reported a moderate reduction in the Hidradenitis Suppurativa Severity Score System (IHS4), VAS for pain, and DLQI at week 12. |
| Kovac et al.[17] | Case series | 3 patients who had previously failed biological therapies | The authors reported a reduction in the DLQI and VAS scores at week 12 |

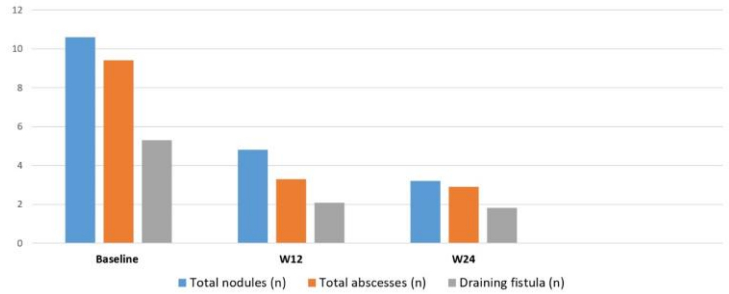


**Figure 1: Mean nodules, abscess and draining fistulas before the guselkumab treatment and at week 12 and 24.**

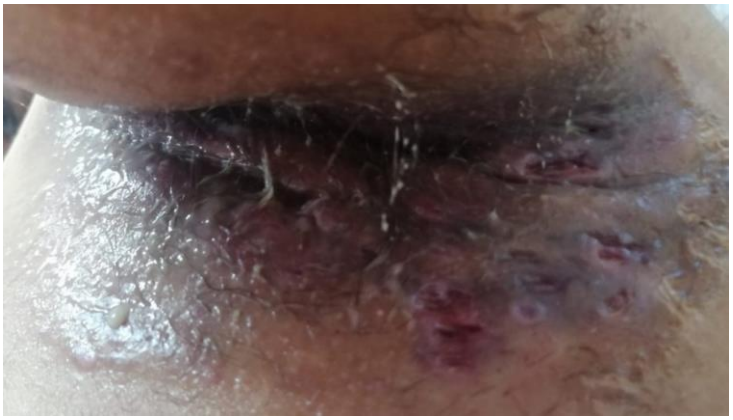

**Figure 2: Severe Hurley III-hidradenitis suppurativa characterized by sinus-tracts, draining fistulas at left axilla.**

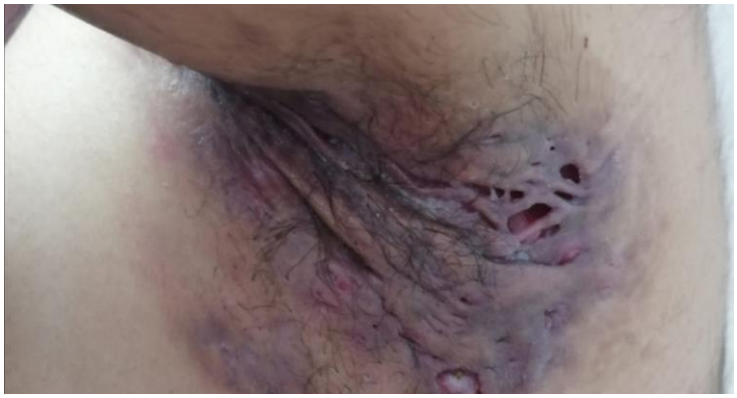

**Figure 3: After 8 weeks of guselkumab treatment.**

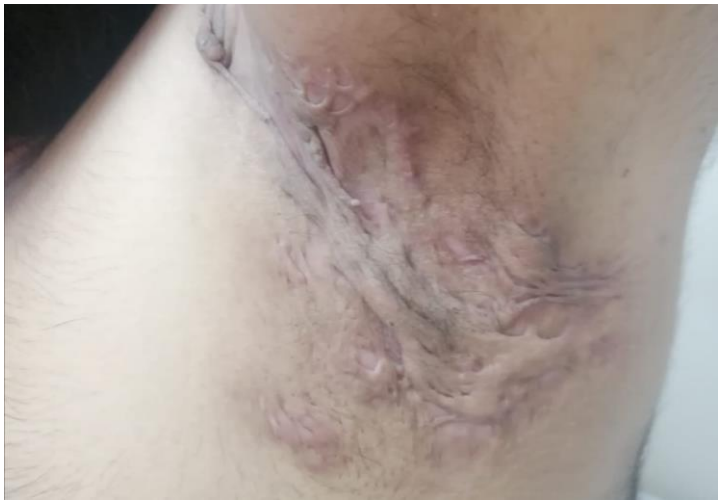

**Figure 4: Subsequent complete disease remission at week 24.**

## DİSCUSSİON

The pathogenesis of HS is still is highly complex and not completely understood, but a dysregulation of the immune system with increased levels of several proinflammatory cytokines in lesional skin has been proposed.[7] In addition to TNF alpha, other cytokines as IL-1 beta, IL-12, IL-17 and IL-23 are involved in the pathogenesis[7], so the blockade of this molecular pathways could contribute to the disease control. It has been reported IL-23 and T-helper (Th) 17 cells are increased in lesional skin of HS, and serum levels of IL-17A produced by Th17 cells correlate with the severity of inflammation in HS.[8] IL-23 is also involved in other inflammatory conditions which are commonly comorbid with HS, including psoriasis and inflammatory bowel disease (IBD) conditions frequently comorbid with HS.[7,8]

Guselkumab, a human monoclonal antibody, has proven effectiveness for treating psoriasis because it binds with high affinity to the p19 subunit of IL-23.[2] Guselkumab may therefore be a useful biologic agent for treating patients with HS who fail to respond to adalimumab.[2]

However, at this time, there are limited data in the literature exploring the use of guselkumab in HS treatment[9,10] In particular, there have been two recent phase 2 studies and several case reports and/or case series.(Table 3) Kimball et al.[11] recently conducted a phase 2, multicenter, randomized, placebo-controlled, double-blind study of 184 patients. The study was set up for 36 weeks of treatment and included these arms: subcutaneous (SC) guselkumab, intravenous (IV) guselkumab, and the placebo group. Although guselkumab SC or IV resulted in numerically higher HiSCR than the placebo at week 16 (50.8%, 45.0%, and 38.7%, respectively), statistical significance was not achieved. The authors concluded that the primary endpoint was not met; therefore, guselkumab did not appear to be effective.

Dudink et al.[12] recently conducted an open-label, multicentre, phase IIa trial, 20 patients were enrolled, and the study lasted 24 weeks divided into 16 weeks of treatment and 8 weeks of follow-up; the primary endpoint was achievement of HiSCR at week 16. Almost 65% of patients (n = 13/20) achieved HiSCR and 35% (n = 7/20) achieved a 75% improvement in HiSCR. The authors conclude the study stating that IL-23 inhibition does not appear to be central to the pathophysiology of HS and that guselkumab has been shown to be effective only in certain subtypes of HS patients. Casseres et al.[13] conducted a retrospective review of eight patients, who had previously failed therapies with adalimumab, secukinumab, ustekinumab, and ixekizumab. The authors reported an improvement in five patients (63%) after 4 months of therapy.

Jorgensen et al.[14] described the case of a young patient with HS and Crohn's disease who failed adalimumab and ustekinumab therapies. The authors reported a marked improvement after 7 months of therapy. Vilchez et al.[15] described a case series of four patients treated with guselkumab 100 mg every 4 weeks, and all patients had been previously treated with either adalimumab, secukinumab, or ustekinumab. The authors reported a moderate reduction in the Hidradenitis Suppurativa Severity Score System (IHS4), VAS for pain, and DLQI after 12 weeks of treatment.

Another case was described by Kearney et al.[16] the authors reported a case of a 28-year-old female patient with a history of latent tuberculosis who had been treated for HS. The authors did not report other treatments but reported that they started treatment with guselkumab, reporting a clear clinical and pain improvement after 12 weeks of therapy. Kovac et al.[17] reported a case series of three patients, of whom two had already failed adalimumab, while adalimumab was contraindicated for the third patient because of cardiovascular concerns. All the patients were assessed for DLQI, and VAS pain at week 12. The authors reported a reduction in the DLQI and VAS scores. Burzi et al.[18] reported a case of concomitant HS and paradoxical psoriasiform reaction to adalimumab that was successfully treated with guselkumab. The data from the case reports and case series were positive, while the phase 2 studies did not confirm this positive trend that had been described.

Limitations of this study are the small sample size and its retrospective nature. Due to the promising results in these patients together with the observed good tolerability, we suggest that guselkumab may have a future role in the treatment of HS in the presence or absence of a concomitant psoriatic condition. Larger, controlled clinical trials should be carried out to further elucidate if guselkumab could be a valid alternative to adalimumab in biological therapy for HS.

Due to the promising results in these patients together with the observed good tolerability, we suggest that guselkumab may have a future role in the treatment of HS in the presence or absence of a concomitant psoriatic condition.

## CONCLUSİONS

Hidradenitis suppurativa is known as one of the most life restricting diseases in dermatology with highly negative effects regarding the Dermatology Life Quality Index (DLQI). Adalimumab is the only Food and Drug Administratione approved medication for moderate to severe HS but a primary or secondary loss of response has been observed in some patients Guselkumab, a human monoclonal antibody, has proven effectiveness for treating psoriasis because it binds with high affinity to the p19 subunit of IL-23. Guselkumab may therefore be a useful biologic agent for treating patients with HS who fail to respond to adalimumab. However, at this time, there are limited data in the literature exploring the use of guselkumab in HS treatment, and only very little

is known about its use in HS concomitantly with psoriasis. Due to the promising results in these patients together with the observed good tolerability, we suggest that guselkumab may have a future role in the treatment of HS in the presence or absence of a concomitant psoriatic condition. Larger, controlled clinical trials should be carried out to further elucidate if guselkumab could be a valid alternative to adalimumab in biological therapy for HS.

**REFERENCES**


1 Zouboulis CC, Desai N, Emtestam L et al. European S1 guideline for the treatment of hidradenitis suppurativa/acne inversa. J Eur Acad Dermatol Venereol, 2015; 29: 619–644.
2 Zouboulis CC, Hansen H, Caposiena Caro RD, et al. (2020). Adalimumab Dose Intensification in Recalcitrant Hidradenitis Suppurativa/Acne Inversa. Dermatology, 2020; 236: 25-30.
3 Burzi L, Repetto F, Ramondetta A, Rozzo G, Licciardello M, Ribero S, et al. Guselkumab in the treatment of severe hidradenitis suppurativa, a promising role? Dermatol Ther., 2021; 34(3): 14930.
4 Kovacs M, Podda M. Guselkumab in the treatment of severe hidradenitis suppurativa. J Eur Acad Dermatol Venereol, 2019; 33(3): 140-141.
5 Montero-Vilchez T, Martinez-Lopez A, Salvador-Rodriguez L, Arias-Santiago S, Molina-Leyva A. The use of guselkumab 100 mg every 4 weeks on patients with hidradenitis suppurativa and a literature review. Dermatol Ther., 2020; 33(3): 13456.
6 Jørgensen AR, Holm JG, Thomsen SF. Guselkumab for hidradenitis suppurativa in a patient with concomitant Crohn's disease: Report and systematic literatüre review of effectiveness and safety. Clin Case Rep., 2020; 8(12): 2874-2877.
7 Jiménez-Gallo D, de la Varga-Martínez R, Ossorio-García L, Albarrán-Planelles C, Rodríguez C, Linares-Barrios M. The Clinical Significance of Increased Serum Proinflammatory Cytokines, C-Reactive Protein, and Erythrocyte Sedimentation Rate in Patients with Hidradenitis Suppurativa. Mediators Inflamm, 2017; 2017: 2450401.
8 Schlapbach C, Hänni T, Yawalkar N, Hunger RE. Expression of the IL-23/Th17 pathway in lesions of hidradenitis suppurativa. J Am Acad Dermatol, 2011; 65(4): 790-798.
9 Montero-Vilchez T, Martinez-Lopez A, Salvador-Rodriguez L, Arias-Santiago S, Molina-Leyva A. The use of guselkumab 100mg every 4weeks on patients with hidradenitis suppurativa and a literature review. Dermatol Ther., 2020; 33(3): 1–4.
10 Casseres RG, Kahn JS, Her MJ, Rosmarin D. Guselkumab in the treatment of hidradenitis suppurativa: A retrospective chart review. J Am Acad Dermatol, 2019; 81: 265-267.
11 Kimball AB, Podda M, Alavi A, et al. Guselkumab for the treatment of patients with moderate-to-severe hidradenitis suppurativa: a phase 2 randomized study. J Eur Acad Dermatol Venereol, 2023.
12 Dudink K, Bouwman K, Chen Y, et al. Guselkumab for hidradenitis suppurativa: a Phase II, open-label, mode-of-action study. Br J Dermatol, 2023; 188(5): 601–609.
13 Casseres RG, Kahn JS, Her MJ, Rosmarin D. Guselkumab in the treatment of hidradenitis suppurativa: a retrospective chart review. J Am Acad Dermatol, 2019; 81(1): 265–267
14 Jørgensen AR, Holm JG, Thomsen SF. Guselkumab for hidradenitis suppurativa in a patient with concomitant Crohn's disease: report and systematic literature review of effectiveness and safety. Clin Case Rep., 2020; 8(12): 2874–2877.
15 Montero-Vilchez T, Martinez-Lopez A, Salvador-Rodriguez L, Arias-Santiago S, Molina-Leyva A. The use of guselkumab 100 mg every 4 weeks on patients with hidradenitis suppurativa and a literature review. Dermatol Ther., 2020; 33(3): e13456.
16 Kearney N, Byrne N, Kirby B, Hughes R. Successful use of guselkumab in the treatment of severe hidradenitis suppurativa. Clin Exp Dermatol, 2020; 45(5): 618–619.
17 Kovacs M, Podda M. Guselkumab in the treatment of severe hidradenitis suppurativa. J Eur Acad Dermatol Venereol, 2019; 33(3): e140–e141.
18 Burzi L, Repetto F, Ramondetta A, et al. Guselkumab in the treatment of severe hidradenitis suppurativa, a promising role? Dermatol Ther., 2021; 34 (3): e14930.