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RESEARCH ARTICLE

Long-term efficacy and safety of secukinumab in real life: a 240 weeks multicenter study from Southern Italy

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ABSTRACT

Background: Long-term real-life data on secukinumab use in psoriasis are limited.
Objectives: Determine the long-term effectiveness of secukinumab in moderate-to-severe psoriasis in real-life.
Methods: Multicenter retrospective study analyzing data from adult patients treated with secukinumab for at least 192 weeks and up to 240 weeks in Southern Italy, between 2016 and 2021. Clinical data, including concurrent comorbidities and prior treatments were collected. Effectiveness was assessed by Psoriasis Area and Severity Index (PASI), Body Surface Area (BSA), Dermatology Life Quality Index (DLQI) scores at the initiation of secukinumab and at weeks 4, 12, 24, 48, 96, 144, 192, and 240.
Results: Two hundred and seventy-five patients (174 males), mean age 50.80 ± 14.78 years, were included; 29.8% had an uncommon localization, 24.4% psoriatic arthritis, 71.6% comorbidities. PASI, BSA, and DLQI improved significantly from week 4 and continued to improve over time. Between weeks 24 and 240, PASI score was mild (≤10) in 97–100% of patients, 83–93% had mild affected BSA (BSA ≤ 3), and 62–90% reported no effect of psoriasis on their quality of life (DLQI 0–1). Only 2.6% of patients reported adverse events and no patient discontinued the treatment during the study period.
Conclusions: Secukinumab effectiveness in the long-term treatment of psoriasis is confirmed in real-world.

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Biologic drugs; long-term therapy; Psoriasis Area and Severity Index (PASI); real-world; secukinumab

Introduction

In recent decades, outstanding advances made in understanding the pathogenesis of psoriasis have clarified the importance of the T helper (Th)-17/interleukin (IL)-23 axis. This expansion in knowledge has provided the basis for the development of target therapies that have entirely revolutionized the disease treatment scenario (1). Secukinumab is a fully human immunoglobulin G1 kappa monoclonal antibody targeting IL-17A, and in 2015, was the first anti-IL-17 agent approved by the US Food and Drug Administration and the European Medicines Agency (EMA) for treating moderate-to-severe plaque psoriasis and psoriatic arthritis (PsA) in adult patients (2). A high efficacy and safety profile, including studies dedicated explicitly to difficult-to-treat areas, such as the nails and palmoplantar area, has already been shown for secukinumab in long-term psoriasis trials, up to five years of treatment (3–7). However, numerous factors usually separate clinical trials from studies in real-life settings (8). Real-world patients with psoriasis are likely not always represented by those enrolled in clinical trials. They frequently present with comorbidities, polypharmacy, and/or higher rates of previous biologic failure, which can strongly influence the choice of biological treatment, disease course, and outcomes (8).

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Certainly, psoriasis patients offer much more complicated challenges in the real-world setting. A recent multicenter French study showed that 78.4% of patients attending their dermatologic centers were not eligible for at least one randomized controlled trial for biologics (9), when the inclusion/exclusion criteria for such phase III trials as REVEAL (adalimumab) (10), PHOENIX 1 and 2 (ustekinumab) (11,12), AMAGINE 1, 2, and 3 (brodalumab) (13,14), and FIXTURE (secukinumab) (15) were applied. Clinical trials are often not reflective of real-life clinical practice and patients with concomitant conditions, such as non-plaque psoriasis, cardiovascular issues, liver disease, elevated liver enzymes, or exposure to prior therapy, for instance, other biologics, are likely to be excluded. Hence real-world data are desirable, especially in the long term, to verify the effectiveness and safety of biologics in clinical practice and to gain more data to aid the dermatologist in choosing the appropriate treatment for the individual patient, taking into consideration that eleven different biologic drugs are now available in Italy for the treatment of moderate-to-severe plaque psoriasis.

Several real-life studies are available in this context for secukinumab (16–22), although they report heterogenous results and not all show long-term outcomes. Notably, a recent real-world study conducted in Spain included 171 patients with moderate-to-severe plaque psoriasis (37.4% with concomitant PsA) treated with secukinumab for a maximum follow-up of 152 weeks (17).

To extend the long-term data on the effectiveness and safety of secukinumab in real life, we performed a multicenter retrospective study in Southern Italy to analyze secukinumab performances for up to 240 weeks in patients with moderate-to-severe psoriasis.

Table 1. Patient demographic and clinical characteristics.

Parameter	Patients ($n = 275$)
Gender, *n* (%)	
Female	101 (36.7)
Male	174 (63.3)
Age, years ± *SD*	50.80 ± 14.78
Weight, kg ± *SD*	77.01 ± 12.98
Height, cm ± *SD*	171.04 ± 8.21
Mean psoriasis duration, years ± *SD*	14.20 ± 10.59
Localization, *n* (%)	
Uncommon localizations	82 (29.8)
Palmo-plantar	14 (5.1)
Genital	18 (6.6)
Folds	21 (7.6)
Hair/face	15 (5.6)
Nails	30 (10.9)
Articular involvement, *n* (%)	67 (24.4)
Mean duration of articular involvement, years ± *SD*	3.45 ± 4.47
Comorbidities, *n* (%)	197 (71.6)
Obesity	36/269 (13.4)
Type 2 diabetes	36 (13.1)
Dyslipidemia	71 (25.8)
Hypertension	82 (29.8)
Cardiovascular diseases	23 (8.4)
Psychiatric conditions	21 (7.6)
Autoimmune diseases	18/272 (6.6)
Atopy/allergy	26 (9.5)
Thyroid disease	7 (2.5)
Arthrosis	4 (1.5)
Osteoporosis	4 (1.5)
Benign prostatic hypertrophy	5 (1.8)
Others	57 (20.7)
Concurrent treatment, *n* (%)	137 (49.8)
Infectious diseases, *n* (%)	20 (7.3)
HBV+	6 (2.2)
HCV+	9 (3.3)
TBC+	5 (1.8)
Previous treatments, *n* (%)	229 (83.3)
Acitretin	81 (29.5)
Adalimumab	63 (22.9)
Ciclosporin	164 (59.6)
Certolizumab Pegol	8 (2.9)
Etanercept	43 (15.6)
Phototherapy	72 (26.2)
Golimumab	7 (2.6)
Guselkumab	2 (0.7)
Infliximab	29 (10.6)
Ixekizumab	4 (1.5)
Methotrexate	91 (33.1)
Brodalumab	1 (0.4)
Ustekinumab	31 (11.3)

HBV: hepatitis B virus; HCV: hepatitis C virus; *SD*: standard deviation; TBC: tuberculosis.

Materials and methods

Design and patients

A multicenter observational retrospective real-life study was conducted between 2016 and 2021 at the following Italian centers: University of Campania Luigi Vanvitelli, Naples; University Magna Graecia of Catanzaro; AOU Policlinico Consorziale Bari; University of Bari; University of Messina; AO 'Pugliese Ciaccio', Catanzaro; Ospedale Distrettuale di Tinchi Pisticci, Azienda Sanitaria di Matera; AO 'Annunziata', Cosenza; University of Catania and University of Naples Federico II. A retrospective chart analysis was performed at each participating institution to identify patients (≥18 years) with moderate-to-severe psoriasis treated with secukinumab for at least 192 weeks. Secukinumab was administered at the standard dose for psoriasis in Italy, 300 mg at weeks 0, 1, 2, 3, and 4, then 300 mg every 4 weeks.

For each patient, data were collected through a computer-based database or electronic registries as follows: (1) personal and demographic data; (2) available data on psoriasis and PsA (clinical form, localization, and duration for psoriasis, duration for PsA if applicable); (3) comorbidities; (4) previous psoriasis systemic treatments; (5) duration of secukinumab therapy and reason for its discontinuation, where available; (6) Psoriasis Area and Severity Index (PASI), Body Surface Area (BSA), and Dermatology Life Quality Index (DLQI) scores at the start of secukinumab treatment (baseline) and at all available follow-up appointments (4, 12, 24, 48, 96, 144, and 192 weeks of treatment, also including week 240, where available).

In addition, the following items were assessed at each follow-up visit: safety, recorded as treatment-emergent adverse events (AEs), possible systemic co-medication, as well as any modification in the dosing of secukinumab. The study received institutional ethics approval from the local Ethics Committee or Institutional Review Board at each participating institution and was conducted in accordance with the principles of the 1975 Declaration of Helsinki and its amendments, the International Conference of Harmonization of Good Clinical Practice, and all applicable laws and regulations.

Statistical analysis

The Kolmogorov–Smirnov test and a visual inspection of histograms, Q–Q plots, and box plots were used to assess the normal distribution of each variable. Data were assumed to be normally distributed for *p*-values above 0.05. The non-parametric Wilcoxon Signed Ranks test was used to compare the data with the non-normal distribution measured at baseline and weeks 4, 12, 24, 48, 96, 144, 192, and 240. *p*-Values ≤0.05 were considered significant after correction for multiple comparisons using the Bonferroni method. Statistical analysis was performed using IBM Statistical Package for Social Sciences software (SPSS, version 26.0, Chicago, IL, USA) for Windows.

Results

Of the 275 patients included in the analysis, 174 were males (63.3%). Patient demographic and clinical characteristics are reported in Table 1. The mean age was 50.80 ± 14.78 years. The mean reported weight was 77.01 ± 12.98 kg, and the mean height was 171.04 ± 8.21 cm. An uncommon localization (areas not traditionally affected by plaque psoriasis) of plaques was reported in almost 30% of the patients. Nail, fold, and genital plaques were reported in 10.9, 7.6, and 6.6% of patients, respectively. Around 25% of patients had also PsA. More than 70% of patients reported at least one comorbidity, with hypertension and dyslipidemia being the most common.

Psoriasis scores

The severity of psoriasis was evaluated by the scores PASI, BSA, and DLQI, according to guidelines (23). PASI, BSA, and DLQI (24–27) scores resulted all improved with treatment, being evident from week 4 and continuing to improve over time. Responses were seen across all psoriasis phenotypes. Mean reductions from baseline in PASI score, affected BSA, and DLQI at week 240 were 96.0, 94, and 96.6%, respectively.

PASI

Secukinumab treatment led to a significant reduction in the mean PASI score in the entire group of patients from baseline, week 4, and week 12 to all other measures assessed (all $p < 0.0001$), and from week 24 to weeks 48, 96, 144, 192, and 240 ($p \leq 0.0001$ for all the assessments except for week 192, where $p = 0.024$), from week 96 to week 192 ($p = 0.018$), and from week 144 to week 192 ($p = 0.007$). All other results did not reach statistical significance.

Table 2 shows changes in PASI score over time in patients classified according to PASI score and disease severity into mild (PASI ≤ 10), moderate (10 ≤ PASI ≤ 20), and severe (PASI ≥ 20) psoriasis severity groups. At baseline, 56.4% of patients were included in the severe PASI group, 32.7% in the moderate PASI group, and 10.9% in the mild PASI group.

By week 4, only 3.3% of patients remained in the severe PASI group, whereas 42.2% were in the moderate PASI group and 54.5% were in the mild PASI group. PASI improvement continued over time, and by week 48, 99.6% of patients had a mild PASI score, and no patients remained in the severe PASI group (Table 2). At weeks 144 and 240, all patients for whom data were available were in the mild PASI group, confirming overall effectiveness and maintenance of efficacy over time. Seven patients (2.6%) were reported to be in the moderate PASI group at week 192.

Table 2. Change in Psoriasis Area and Severity Index (PASI) score and body surface area (BSA) over time.

	Parameter, *n*/*n* (%)		
PASI			
	Mild (PASI < 10)	Moderate (10 ≤ PASI < 20)	Severe (PASI ≥ 20)
Baseline (*n* = 275)	30 (10.9)	90 (32.7)	155 (56.4)
Week 4 (*n* = 244)	133 (54.5)	103 (42.2)	8 (3.3)
Week 12 (*n* = 275)	266 (96.7)	8 (2.9)	1 (0.4)
Week 24 (*n* = 265)	264 (99.6)	0 (0.0)	1 (0.4)
Week 48 (*n* = 264)	263 (99.6)	1 (0.4)	0 (0.0)
Week 96 (*n* = 264)	264 (100.0)	0 (0.0)	0 (0.0)
Week 144 (*n* = 265)	265 (100.0)	0 (0.0)	0 (0.0)
Week 192 (*n* = 265)	258 (97.4)	7 (2.6)	0 (0.0)
Week 240 (*n* = 222)	222 (100.0)	0 (0.0)	0 (0.0)
BSA			
	Mild (BSA ≤ 3)	Moderate (3 < BSA ≤ 10)	Severe (BSA > 10)
Baseline (*n* = 265)	0 (0)	25 (9.4)	240 (90.6)
Week 4 (*n* = 244)	36 (14.8)	153 (62.7)	55 (22.5)
Week 12 (*n* = 275)	164 (59.6)	97 (35.3)	14 (5.1)
Week 24 (*n* = 265)	220 (83.0)	41 (15.5)	4 (1.5)
Week 48 (*n* = 265)	236 (89.1)	26 (9.8)	3 (1.1)
Week 96 (*n* = 251)	233 (92.8)	18 (7.2)	0 (0.0)
Week 144 (*n* = 265)	248 (93.6)	15 (5.7)	2 (0.8)
Week 192 (*n* = 265)	222 (83.8)	31 (11.7)	12 (4.5)
Week 240 (*n* = 222)	201 (90.5)	10 (4.5)	11 (5.0)

Table 3. Change in Dermatology Life Quality Index (DLQI) over time.

	Effects on patients' lives, *n*/*n* (%)				
	No effect (DLQI 0–1)	Small (DLQI 2–5)	Moderate (DLQI 6–10)	Very large (DLQI 11–20)	Extremely large (DLQI 21–30)
Baseline (*n* = 264)	0 (0.0)	2 (0.8)	9 (3.4)	91 (34.5)	162 (61.4)
Week 4 (*n* = 238)	29 (12.2)	50 (21.0)	123 (51.7)	36 (15.1)	0 (0.0)
Week 12 (*n* = 275)	110 (40.0)	106 (38.5)	52 (18.9)	7 (2.5)	0 (0.0)
Week 24 (*n* = 263)	164 (62.4)	83 (31.6)	16 (6.1)	0 (0.0)	0 (0.0)
Week 48 (*n* = 264)	215 (81.4)	45 (17.0)	3 (1.1)	1 (0.4)	0 (0.0)
Week 96 (*n* = 264)	237 (89.8)	24 (9.1)	3 (1.1)	0 (0.0)	0 (0.0)
Week 144 (*n* = 265)	238 (89.8)	23 (8.7)	4 (1.5)	0 (0.0)	0 (0.0)
Week 192 (*n* = 265)	208 (78.5)	35 (13.2)	12 (4.5)	10 (3.8)	0 (0.0)
Week 240 (*n* = 222)	190 (85.6)	19 (8.6)	12 (5.4)	1 (0.4)	0 (0.0)

BSA

Secukinumab treatment led to a significant reduction in mean BSA score in the entire group of patients from baseline to week 4, week 12, and week 24 to all other measures assessed (all $p < 0.0001$), and from week 48 to weeks 96, 144, 240 ($p = 0.001$, $p = 0.0001$, and $p = 0.008$, respectively). All other results did not reach statistical significance.

Table 2 shows changes BSA over time in patients grouped according to affected surface area into mild (BSA ≤ 3), moderate (3 ≤ BSA ≤ 10), and severe (BSA ≥ 10) psoriasis BSA groups. At baseline, 90.6% of patients were in the severe BSA group and the remainder were in the moderate BSA group. No patient was in the mild BSA group.

By week 4, only 22.5% of patients remained in the severe BSA group, with the rest in the moderate (62.7%) or mild (14.8%) group. Improvements in affected BSA continued over time, and by week 24, only 1.5% of patients were in the severe BSA group (Table 2). The proportion of patients with severe BSA remained very low with continued secukinumab treatment, and between 83.0 and 93.6% of patients were in the mild BSA group from week 24.

DLQI

Secukinumab treatment led to relevant and sustained improvements in patients' quality of life. There was a significant reduction in the mean DLQI score in the entire group of patients from baseline, week 4 and week 12 to all other measures assessed (all $p < 0.0001$), from week 24 to weeks 48, 96, 144, 192, and 240 ($p \leq 0.0001$ for all the assessments except for week 192, where $p = 0.026$), from week 48 to week 96, 144, and 240 ($p = 0.0001$, $p = 0.0001$, and $p = 0.008$, respectively), from week 96 to week 192 ($p = 0.0001$) and from week 144 to week 192 ($p = 0.0001$), and week 240 ($p = 0.021$). All other results did not reach statistical significance.

Table 3 shows the influence of psoriasis over time when patients were divided according to DLQI measuring as no (DLQI 0–1), small, (DLQI 2–5), moderate (DLQI 6–10), very large (DLQI 11–20), and extremely large (DLQI 21–30) effects on the patients' life.

At baseline, 61.4% of patients were included in the extremely-large effects group, 34.5% in the very-large effect group, 3.4% in the moderate effect group, and only two patients (0.8%) were included in the small-effect group. From week 4 throughout the duration of secukinumab treatment, no patients remained in the extremely large (DLQI 21–30) group, and by week 12, only 2.5% of patients were in the very-large (DLQI 11–20) group, with psoriasis continuing to have a decreasing effect on the quality of life for most patients during ongoing treatment with secukinumab, with the majority of them reporting no or only a small effect from week 12.

Treatment persistence and concurrent therapies

No patient discontinued treatment during the study period. However, some patients reported the addition of other treatments during the follow-up. One patient added methotrexate at week 24; one added phototherapy and two used calcipotriol cream at week 48; at week 96 one patient added methotrexate and another a calcipotriol/betamethasone foam; one patient used the same foam from week 144; one patient added methotrexate, one a calcipotriol cream, and other three added a calcipotriol/betamethasone foam at week 192; five patients added a calcipotriol/betamethasone foam and two patients added a calcipotriol cream at week 240.

Overall, 83.3% of patients received a previous treatment and in 188 out of 596 cases (32%), the pretreatment occurred with a biological agent (Table 1).

Safety

There was a very low incidence of adverse events during secukinumab treatment. Only seven patients (2.55%) reported adverse events throughout the 240 weeks of the study. At week 4, one patient (0.36%) reported fainting, and there were two reports of headache at week 12 (0.73%). At week 192, one patient (0.36%) reported *Candida balanitis* infection and 2 (0.73%) neutrophilia. One patient (0.36%) reported high transaminases at week 240.

Discussion

Patients affected by severe plaque psoriasis will require long-term treatment with biological agents to manage their condition. While the short-term effects of these drugs are well documented, studies examining the long-term efficacy and safety of biologics are limited. This study is among the first reports to register a 5-year real-world experience with secukinumab in a multicenter patient cohort, confirming the satisfactory results previously obtained in clinical trials and the relative extension studies in other real-life settings (7,17,28–31). Secukinumab therapy resulted in a continuous and persistent improvement of the condition in terms of PASI, BSA, and DLQI up to 240 weeks. In particular, mean reductions from baseline in PASI score, affected BSA, and DLQI at week 240 were 96.0, 94, and 96.6%, respectively. These results in real-life use of secukinumab overcome those already reported in the SCULPTURE extension study (7), which reported a mean 90% PASI improvement after five years. More recent real-world evidence in literature is consistent with a significant reduction in PASI (50% of patients reaching PASI 100 and 89% reaching PASI 90) and DLQI, evaluated at 1 year follow-up (32). Our study presents a longer follow-up time, up to 240 weeks, with remarkable results in terms of effectiveness and safety.

Indeed, in our cohort, no patient discontinued the treatment over the long follow-up time. This is the lowest discontinuation rate registered, to our knowledge, in real-world analyses. Several real-world studies reported variable rates of discontinuation for secukinumab: 30% at 32 weeks (33), between 11 and 37% at 52 weeks (34–37), 9.5% at 84 weeks (16), and 71% at 2 years (38). These differences may depend on the characteristics of the population studied and interestingly, the retrospective analysis reporting data from a similar population, i.e., from Southern Italy (16), is the one with the lowest discontinuation rate. Further investigations should better address these differences, with specific attention to the intrinsic feature of the population.

The treatment persistence observed here is longer compared to what reported by a recent interim analysis of an ongoing observational study involving 1,756 patients, showing a treatment retention of 60.5% at 3 years (30). In a real-world analysis conducted in Portugal over a 5-year follow-up period, 28% of patients discontinued secukinumab treatment and the factors predicting for discontinuation were the timing of treatment initiation after diagnosis (<5 years), previous treatment with biologics and the involvement of difficult to treat areas (31). In our cohort 83.3% of patients received pretreatments, with 188 out of 596 (32%) pretreatments done with biologics, suggesting that previous exposure to this treatment may not be a major player in defining the persistence of secukinumab therapy.

In addition, in the real-world analysis by Ruiz-Villaverde et al. (17) where patients were followed up to 152 weeks, discontinuation rate was 14.1% in psoriasis patients with PsA and 12.1% in those without PsA, with a mean survival time of discontinuation of 63 and 65 weeks for patients with concomitant PsA and those without

PsA, respectively. The estimated mean drug survival time for secukinumab in PsA patients was 86% (mean 130 weeks) *vs.* 88% (mean 133 weeks) in patients without PsA. The absence of treatment discontinuation reported in our study is a striking indication of the efficacy of secukinumab despite the different patients' profile (age, comorbidities, concurrent and previous treatments).

The psoriatic patient is usually motivated to start systemic therapy, including the one with biologics, and despite it involves injections it is well tolerated by the patients in the short term (39). We believe this contributed to the good compliance observed in our cohort also in the long-term. Indeed, Bissonnette et al. showed secukinumab efficacy and safety in patients who have been on therapy for 5 years (7).

Flares can occur in psoriasis patients treated with biologics (40) and we observed episodes of flares in our cohort. Nevertheless, no disease exacerbation led to the interruption of the therapy: instead, all the flare-ups were treated with the use of topical corticosteroids with good control of these rapid deteriorations.

According to our study, the drug's safety profile was excellent, with a very low incidence of adverse events. This datum (only six cases, very low if compared to other available studies) (7) might be linked to the fact that minor side effects may not be reported in real-life setting. Overall, the good safety profile of the drug is confirmed also in the presence of concomitant infections, as reported in a previous study where only one patient out of a cohort of 60 experienced hepatitis B and C reactivation after secukinumab treatment (41).

This study has limitations, such as the retrospective nature and the low number of patients. In addition, the data collected did not allow us to quantify the effect of prior treatments on the final outcome. However, the results are consistent with, or better in some cases, than those reported for clinical trials, despite the more complicated patient profile of the real-world setting, i.e., pretreated patients with comorbidities and uncommon localizations. The excellent response regarding clinical improvement and impact on quality of life appeared to be independent of the clinical phenotype, thus applicable to all psoriasis subtypes.

Conclusions

High patient retention and treatment compliance highlight the favorable long-term tolerability and patient satisfaction with secukinumab treatment. Despite the limitations implicit in a retrospective study, our real-world findings suggest that secukinumab is an effective and safe drug in patients affected by psoriasis, specifically when used for extended periods with high treatment effectiveness and a low number of adverse events.

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Author contributions

All the authors conceptualized, designed, acquired, analyzed, and interpreted the data. All the authors drafted and revised the manuscript, and approved the current version for the submission.

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Data availability statement

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

References

1. Megna M, Balato A, Napolitano M, et al. Psoriatic disease treatment nowadays: unmet needs among the "jungle of biologic drugs and small molecules". Clin Rheumatol. 2018;37(7):1739–1741.
2. Sanford M, McKeage K. Secukinumab: first global approval. Drugs. 2015;75(3):329–338.
3. Bissonnette R, Luger T, Thaci D, et al. Secukinumab sustains good efficacy and favourable safety in moderate-to-severe psoriasis after up to 3 years of treatment: results from a double-blind extension study. Br J Dermatol. 2017;177(4):1033–1042.
4. Gottlieb AB, Kubanov A, van Doorn M, et al. Sustained efficacy of secukinumab in patients with moderate-to-severe palmoplantar psoriasis: 2.5-year results from GESTURE, a randomized, double-blind, placebo-controlled trial. Br J Dermatol. 2020;182(4):889–899.
5. Reich K, Sullivan J, Arenberger P, et al. Secukinumab shows high and sustained efficacy in nail psoriasis: 2.5-year results from the randomized placebo-controlled TRANSFIGURE study. Br J Dermatol. 2021;184(3):425–436.
6. Okubo Y, Ohtsuki M, Morita A, et al. Long-term efficacy and safety of secukinumab in japanese patients with moderate to severe plaque psoriasis: 3-year results of a double-blind extension study. J Dermatol. 2019;46(3):186–192.
7. Bissonnette R, Luger T, Thaci D, et al. Secukinumab demonstrates high sustained efficacy and a favourable safety profile in patients with moderate-to-severe psoriasis through 5 years of treatment (SCULPTURE extension study). J Eur Acad Dermatol Venereol. 2018;32(9):1507–1514.
8. Cinelli E, Fabbrocini G, Megna M. Real-world experience versus clinical trials: pros and cons in psoriasis therapy evaluation. Int J Dermatol. 2022;61(3):e107–e108.
9. Masson Regnault M, Castañeda-Sanabria J, Diep Tran MHT, et al. Users of biologics in clinical practice: would they be eligible for phase III clinical studies? Cohort study in the French Psoriasis Registry PSOBIOTEQ. J Eur Acad Dermatol Venereol. 2020;34(2):293–300.
10. Menter A, Tyring SK, Gordon K, et al. Adalimumab therapy for moderate to severe psoriasis: a randomized, controlled phase III trial. J Am Acad Dermatol. 2008;58(1):106–115.
11. Kimball AB, Papp KA, Wasfi Y, et al. Long-term efficacy of ustekinumab in patients with moderate-to-severe psoriasis treated for up to 5 years in the PHOENIX 1 study. J Eur Acad Dermatol Venereol. 2013;27(12):1535–1545.
12. Langley RG, Lebwohl M, Krueger GG, et al. Long-term efficacy and safety of ustekinumab, with and without dosing adjustment, in patients with moderate-to-severe psoriasis: results from the PHOENIX 2 study through 5 years of follow-up. Br J Dermatol. 2015;172(5):1371–1383.

13. Papp KA, Reich K, Paul C, et al. A prospective phase III, randomized, double-blind, placebo-controlled study of brodalumab in patients with moderate-to-severe plaque psoriasis. Br J Dermatol. 2016;175(2):273–286.
14. Lebwohl M, Strober B, Menter A, et al. Phase 3 studies comparing brodalumab with ustekinumab in psoriasis. N Engl J Med. 2015;373(14):1318–1328.
15. Langley RG, Elewski BE, Lebwohl M, et al. Secukinumab in plaque psoriasis–results of two phase 3 trials. N Engl J Med. 2014;371(4):326–338.
16. Megna M, Di Costanzo L, Argenziano G, et al. Effectiveness and safety of secukinumab in italian patients with psoriasis: an 84 week, multicenter, retrospective real-world study. Expert Opin Biol Ther. 2019;19(8):855–861.
17. Ruiz-Villaverde R, Rodriguez-Fernandez-Freire L, Galán-Gutierrez M, et al. Drug survival, discontinuation rates, and safety profile of secukinumab in real-world patients: a 152-week, multicenter, retrospective study. Int J Dermatol. 2020;59(5):633–639.
18. Megna M, Camela E, Cinelli E, et al. Real-life efficacy and safety of secukinumab in elderly patients with psoriasis over a 2-year period. Clin Exp Dermatol. 2020;45(7):848–852.
19. Galluzzo M, D'Adamio S, Silvaggio D, et al. In which patients the best efficacy of secukinumab? Update of a real-life analysis after 136 weeks of treatment with secukinumab in moderate-to-severe plaque psoriasis. Expert Opin Biol Ther. 2020;20(2):173–182.
20. Rompoti N, Sidiropoulou P, Panagakis P, et al. Real-world data from a single Greek Centre on the use of secukinumab in plaque psoriasis: effectiveness, safety, drug survival, and identification of patients that sustain optimal response. J Eur Acad Dermatol Venereol. 2020;34(6):1240–1247.
21. Chiricozzi A, Balato A, Conrad C, et al. Secukinumab demonstrates improvements in absolute and relative psoriasis area severity indices in moderate-to-severe plaque psoriasis: results from a european, multicentric, retrospective, real-world study. J Dermatolog Treat. 2020;31(5):476–483.
22. Rompoti N, Katsimbri P, Kokkalis G, et al. Real world data from the use of secukinumab in the treatment of moderate-to-severe psoriasis, including scalp and palmoplantar psoriasis: a 104-week clinical study. Dermatol Ther. 2019;32(5):e13006.
23. Finlay AY. Current severe psoriasis and the rule of tens. Br J Dermatol. 2005;152(5):861–867.
24. Basra MK, Fenech R, Gatt RM, et al. The Dermatology Life Quality Index 1994–2007: a comprehensive review of validation data and clinical results. Br J Dermatol. 2008;159(5):997–1035.
25. Belinchon Romero I, Dauden E, Ferrandiz Foraster C, et al. PASI 100 response rates in moderate to severe psoriasis: a systematic literature review and analysis of clinical practice guidelines. J Dermatolog Treat. 2022;33(3):1661–1669.
26. Mrowietz U, Kragballe K, Reich K, et al. Definition of treatment goals for moderate to severe psoriasis: a European consensus. Arch Dermatol Res. 2011;303(1):1–10.
27. Bożek A, Reich A. The reliability of three psoriasis assessment tools: psoriasis area and severity index, body surface area and physician global assessment. Adv Clin Exp Med. 2017;26(5):851–856.
28. Langley RG, Sofen H, Dei-Cas I, et al. Secukinumab long-term efficacy and safety in psoriasis through to year 5 of treatment: results of a randomized extension of the phase III ERASURE and FIXTURE trials. Br J Dermatol. 2023;188(2):198–207.
29. Gottlieb AB, Deodhar A, McInnes IB, et al. Long-term safety of secukinumab over five years in patients with moderate-to-severe plaque psoriasis, psoriatic arthritis and ankylosing spondylitis: update on integrated pooled clinical trial and post-marketing surveillance data. Acta Derm Venereol. 2022;102:adv00698.
30. Augustin M, Sator PG, von Kiedrowski R, et al. Secukinumab demonstrated sustained retention, effectiveness and safety in a real-world setting in patients with moderate-to-severe plaque psoriasis: long-term results from an interim analysis of the SERENA study. J Eur Acad Dermatol Venereol. 2022;36(10):1796–1804.
31. Mendes-Bastos P, Morais P, Ferreira P, et al. Persistence, effectiveness, and real-world outcomes in psoriasis patients treated with secukinumab in Portugal. Dermatol Ther. 2022;35(7):e15510.
32. Diotallevi F, Gambini D, Radi G, et al. Should we be concerned about gastrointestinal-related adverse events in patients with plaque psoriasis receiving secukinumab therapy? A retrospective, real-life study. Dermatol Ther. 2022;35(11):e15794.
33. Huang YYM, Ruth JS, Hsu S. Loss of efficacy of secukinumab for psoriasis at 24 to 32 weeks. J Am Acad Dermatol. 2016;75(4):e169.
34. Galluzzo M, Talamonti M, De Simone C, et al. Secukinumab in moderate-to-severe plaque psoriasis: a multi-center, retrospective, real-life study up to 52 weeks observation. Expert Opin Biol Ther. 2018;18(7):727–735.
35. Georgakopoulos JR, Ighani A, Phung M, et al. Drug survival of secukinumab in real-world plaque psoriasis patients: a 52-week, multicenter, retrospective study. J Am Acad Dermatol. 2018;78(5):1019–1020.
36. Notario J, Deza G, Vilarrasa E, et al. Treatment of patients with plaque psoriasis with secukinumab in a real-life setting: a 52-week, multicenter, retrospective study in Spain. J Dermatolog Treat. 2019;30(5):424–429.
37. Li Y, Lu JJ, Zhong XY, et al. Drug survival outcomes associated with the real-world use of ixekizumab, secukinumab, guselkumab, and adalimumab for the treatment of plaque psoriasis in China: a 52-week single-center retrospective study. Clin Cosmet Investig Dermatol. 2022;15:2245–2252.
38. Egeberg A, Ottosen MB, Gniadecki R, et al. Safety, efficacy and drug survival of biologics and biosimilars for moderate-to-severe plaque psoriasis. Br J Dermatol. 2018;178(2):509–519.
39. Mahil SK, Ezejimofor MC, Exton LS, et al. Comparing the efficacy and tolerability of biologic therapies in psoriasis: an updated network meta-analysis. Br J Dermatol. 2020;183(4):638–649.
40. Polivka L, Oubaya N, Bachelez H, et al. Trends in hospitalization rates for psoriasis flares since the introduction of biologics: a time series in France between 2005 and 2015. J Eur Acad Dermatol Venereol. 2018;32(11):1920–1929.
41. Megna M, Patruno C, Bongiorno MR, et al. Hepatitis virus reactivation in patients with psoriasis treated with secukinumab in a real-world setting of hepatitis B or hepatitis C infection. Clin Drug Investig. 2022;42(6):525–531.