Secukinumab Is Associated With Improvements in Real-World Effectiveness Outcomes Through 12 Months of Follow-Up in Patients With Plaque Psoriasis: Analysis of US Dermatology Electronic Medical Records

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SYNOPSIS

- Psoriasis is a chronic, systemic, immune-mediated disease of the skin that affects > 7.4 million people in the United States, with an estimated prevalence of 2% to 4%[1]
- Secukinumab is a fully human monoclonal antibody that selectively neutralizes interleukin (IL)-17A and has shown long-lasting efficacy and safety in the treatment of the complete spectrum of psoriasis manifestations, including nail, scalp, and palmoplantar psoriasis and psoriatic arthritis[2-8]
- There remains limited information on the effectiveness of secukinumab treatment in patients with plaque psoriasis in US real-world settings

OBJECTIVE

- To describe real-world effectiveness outcomes in US patients with plaque psoriasis who initiated secukinumab in clinical practice, using clinical data obtained from the Modernizing Medicine Data Services (MMDS) electronic medical records (EMRs) dermatology panel

METHODS

Study Design and Patient Population

- All data were collected from Modernizing Medicine's Electronic Medical Assistant (EMA) system
  - EMA delivers structured, real-world data captured from > 500,000 unique patients with psoriasis
  - Data from EMRs for patients in the United States with a clinical diagnosis of psoriasis were deidentified in accordance with HIPAA (Health Insurance Portability and Accountability Act) for research use
- Eligible patients in the MMDS database had a diagnosis of plaque psoriasis during the study period of July 1, 2014, to March 31, 2018, had ≥ 1 prescription order for secukinumab within the index period (January 1, 2015, to September 30, 2017), and were aged ≥ 18 years at the time of secukinumab initiation (index date)
- Patients had ≥ 1 clinical visit for any reason during the 6-month pre-index (baseline) period and ≥ 1 clinical visit for any reason within each of the first and second 6 months following secukinumab initiation

Study Variables and Data Analysis

- Outcomes were assessed in two cohorts: patients who had ≥ 6 months of follow-up and those who had ≥ 12 months of follow-up
- Demographic characteristics (age, sex, race, body weight, US region), treatment history (during 6-month pre-index period only), and clinical characteristics (comorbidities, psoriasis subtype, body surface area [BSA], and Physician Global Assessment [PGA]) were assessed by dermatology providers during the 6-month baseline period
- Mean (SD) and categorical BSA and Physician Global Assessment (PGA) scores were evaluated during the 6-month baseline period and at 6-month (window, 5-7 months) and 12-month (window, 11-13 months) follow-up visits among patients with scores reported at baseline and follow-up
- Categorical changes from baseline to 6- and 12-month follow-up visits were calculated among patients with both baseline and follow-up BSA and PGA measurements available

RESULTS

Patient Demographics

- Among all patients who initiated secukinumab with 6 months (N = 6568) and 12 months of follow-up (N = 4996), the mean (SD) age was 51.1 (13.9) and 51.6 (13.7) years, respectively, 50.6% and 50.5% were male, and all US geographic regions were represented (**Table 1**)
- The most common comorbidities were hypertension, psoriatic arthritis, and diabetes (**Table 1**)
- Overall, in both groups, approximately 40% of patients received prior biologic treatment during the 6-month baseline period (**Table 1**)

Table 1. Demographics, Clinical Characteristics, and Treatment History of Patients With Psoriasis Who Initiated Secukinumab and Had 6 Months or 12 Months of Follow-Up

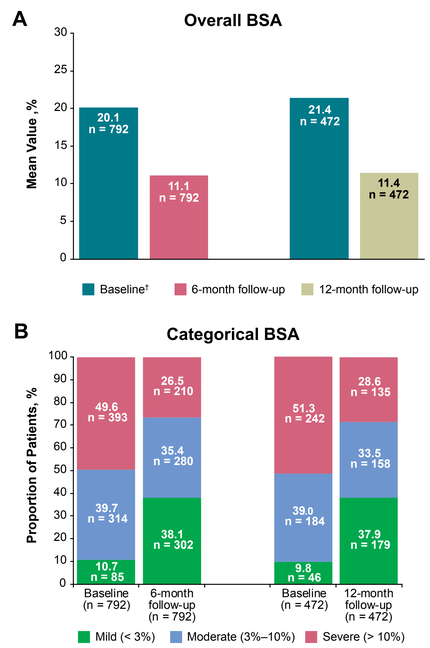
Characteristic	Patients With 6-Month Follow-Up (N = 6568)	Patients With 12-Month Follow-Up (N = 4996)
Age, mean (SD), years	51.1 (13.9)	51.6 (13.7)
Male, n (%)	3326 (50.6)	2524 (50.5)
US region, n (%)		
South	2734 (41.6)	2070 (41.4)
West	1428 (21.7)	1080 (21.6)
Midwest	1355 (20.6)	1036 (20.7)
Northeast	1040 (15.8)	802 (16.1)
Unknown	1828 (27.8)	8 (0.2)
Race		
White	4270 (65.0)	3317 (66.4)
Black	187 (2.9)	141 (2.8)
Asian	163 (2.5)	129 (2.6)
Hispanic	120 (1.8)	92 (1.8)
Other/unknown	1828 (27.8)	1317 (26.4)
Comorbidities, n (%)		
Hypertension	1926 (29.3)	1487 (29.8)
Psoriatic arthritis	1443 (22.0)	1110 (22.2)
Diabetes	1122 (17.1)	877 (17.6)
Hyperlipidemia	953 (14.5)	751 (15.0)
Malignancies	782 (11.9)	633 (12.7)
Coronary heart disease	169 (2.6)	125 (2.5)
Cerebrovascular disease*	80 (1.2)	70 (1.4)
Obesity	65 (1.0)	55 (1.1)
Rheumatoid arthritis	26 (0.4)	24 (0.5)
Treatment history		
Prior biologic treatment preceding secukinumab claim, n (%)		
Tumor necrosis factor inhibitors†	1469 (54.6)	1148 (54.1)
Ustekinumab	1250 (46.5)	1011 (47.6)
IL-17A inhibitors‡	103 (3.8)	69 (3.3)

IL, interleukin.
* Cerebrovascular disease included hemorrhagic stroke and transient ischemic attack.
† Tumor necrosis factor inhibitors included adalimumab, certolizumab pegol, etanercept, golimumab, and infliximab.
‡ IL-17 inhibitors included brodalumab and ixekizumab.

Change in Clinical Effectiveness Outcomes From Secukinumab Initiation

- Among patients with plaque psoriasis in the MMDS database who initiated secukinumab and had baseline BSA and PGA values, 792 and 472 patients, respectively, had BSA measurements, and 741 and 441 patients, respectively, had PGA scores at 6 and 12 months
- The mean BSA decreased from 20.1% at baseline to 11.1% at 6 months and from 21.4% at baseline to 11.4% at 12 months (**Figure 1A**)
  - The proportion of patients who had mild disease (BSA < 3%) increased from 10.7% (85 of 792 patients) at baseline to 38.1% (302 of 792) at 6 months and from 9.8% (46 of 472 patients) to 37.9% (179 of 472) at 12 months (**Figure 1B**)
  - The proportion of patients with severe disease (BSA > 10%) decreased from 49.6% (393 of 792 patients) at baseline to 26.5% (210 of 792) and from 51.3% (242 of 472 patients) to 28.6% (135 of 472) at 12 months

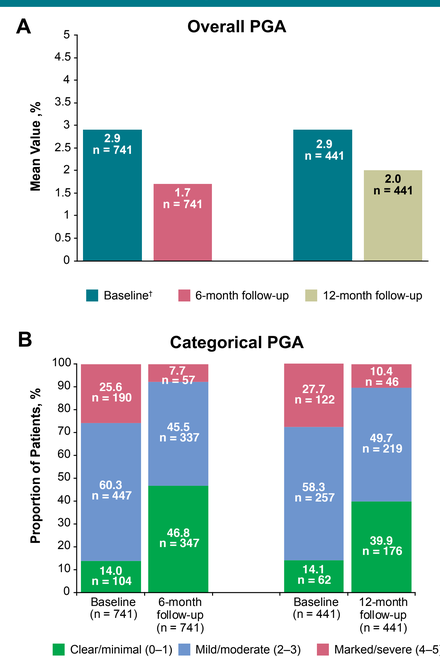
Figure 1. (A) Mean and (B) Categorical BSA* Change in Patients Who Initiated Secukinumab and Had 6 Months and 12 Months of Follow-Up



BSA, affected body surface area.
* Available effectiveness records for BSA were reported based on the index visit or the visit closest to the index with such values during the 6-month baseline period.
† Baseline data were from the patients who enrolled and had 6- or 12-month follow-up periods, respectively.

- The mean PGA score decreased from 2.9 to 1.7 at 6 months and from 2.9 to 2.0 at 12 months (**Figure 2A**)
- The proportion of patients who achieved a PGA score of 0/1 (clear/minimal disease) increased from 14.0% (104 of 741 patients) at baseline to 46.8% (347 of 741) at 6 months and from 14.1% (62 of 441 patients) to 39.9% (176 of 441) at 12 months (**Figure 2B**)

Figure 2. (A) Mean and (B) Categorical PGA* Change in Patients Who Initiated Secukinumab and Had 6 Months and 12 Months of Follow-Up



PGA, Physician Global Assessment.
* Available effectiveness records for PGA scores were reported based on the index visit or the visit closest to the index with such values during the 6-month baseline period.
† Baseline data were from the patients who enrolled and had 6- or 12-month follow-up periods, respectively.

LIMITATIONS

- The MMDS database included data captured only from physicians contributing to the EMR network (that was then de-identified), and results may not be generalizable to all patients with psoriasis
- No continuous health plan enrollment information was captured in the EMR database
- Patients with comorbid psoriatic arthritis or ankylosing spondylitis initiating secukinumab were not excluded from the study population, leading to potential confounding variables
- This study was retrospective in nature and relied on coding to make associations between secukinumab exposure and effectiveness outcomes

CONCLUSION

- In this analysis of real-world data among patients with plaque psoriasis, secukinumab treatment increased the proportion of patients who achieved BSA < 3% and PGA scores of 0-1 by 3- to 4-fold after 6 months, with similar improvements shown through 12 months
- These findings highlight the real-worldeffectiveness of secukinumab in improving skin clearance in patients with mostly moderate-to-severe disease and are consistent with previous real-world studies

REFERENCES

1. Rachakonda TD, et al. *J Am Acad Dermatol.* 2014;70(3):512-6.
2. Langley RG, et al. *N Engl J Med.* 2014;371(4):326-38.
3. Blauvelt A, et al. *Br J Dermatol.* 2015;172(2):484-93.
4. Paul C, et al. *J Eur Acad Dermatol Venereol.* 2015;29(6):1082-90.
5. Thaci D, et al. *J Am Acad Dermatol.* 2015;73(3):400-9.
6. Armstrong AW, et al. *J Clin Aesthet Dermatol.* 2016;9(6 suppl 1):S12-6.
7. Mease P, et al. *Ann Rheum Dis.* 2018;77(6):890-7.
8. Bagel J, et al. Poster presented at: 27th European Academy of Dermatology and Venereology Congress; September 12, 2018; Paris, France [ePoster P1850].

DISCLOSURES

P. S. Yamauchi has served as an investigator for Amgen, Celgene, Dermira, Galderma, Janssen, LEO Pharma, Eli Lilly, MedImmune, Novartis, Pfizer, Regeneron, and Sandoz and has served as an advisor and/or speaker for AbbVie, Amgen, Baxter, Celgene, Dermira, Galderma, Janssen, LEO Pharma, Eli Lilly, Novartis, Pfizer, and Regeneron. C.-C. Chen and Y. Ding are employees of IQVIA who received consulting fees to conduct this research. R. Germino is an employee of Novartis Pharmaceuticals Corporation.

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