Efficacy and safety of secukinumab over 52 weeks in Chinese psoriasis patients with concomitant psoriatic arthritis

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Psoriasis is a chronic, systemic inflammatory disease characterized by demarcated, scaly, erythematous skin plaques. Psoriatic arthritis (PsA) is the most common comorbidity, with roughly 25% to 30% of psoriasis patients developing PsA during their lifetime.[1] Although the prevalence of psoriasis is relatively low in China (0.6%) there is evidence of substantial disease severity among Chinese patients.[2,3] In a recently published Phase 3 clinical trial with a predominantly Chinese population, patients had higher disease severity at baseline, compared to patients in trials with predominantly Western populations.[3] A systematic review of observational and clinical studies showed that 14% of Asian psoriasis patients had concomitant PsA compared to 23% of European patients.[4] Currently, there is still a significant unmet need in Chinese psoriasis and PsA patients.

Interleukin (IL)-17A inhibitors are approved for the treatment of patients with moderate to severe psoriasis.[5] Secukinumab is a fully human monoclonal antibody that directly inhibits IL-17A, demonstrating rapid and sustained clinical efficacy, and safety in psoriasis patients.[5]

The CAIN457A2318 study (NCT03066609) was a 52-week, multicenter, randomized, double-blind, placebo-controlled, parallel-group, Phase 3 study of moderate to severe psoriasis patients, which predominantly included Chinese population (441/543 [81%]). The primary results of this study have previously been reported.[3] Here, we report the efficacy and safety of the subpopulation of Chinese psoriasis patients with concurrent PsA included in the CAIN457A2318 study. The study protocol was reviewed by the Ethics Committee of each center. The study was conducted according to the ethical principles of the *Declaration of Helsinki*. Informed consent was obtained from each patient in writing before randomization. Patients (≥18 years) with moderate to severe chronic plaque psoriasis for at least 6 months who were inadequately controlled by topical treatments, phototherapy, and/or previous systemic therapy were included. PsA diagnosis was based on fulfillment of the classification criteria for psoriatic arthritis and ≥3 tender and swollen joints at baseline. The treatment consisted of an induction (baseline – week 12), maintenance (week 13–52), and follow-up period (week 53–60). Eligible patients were randomized (2:1:1) to secukinumab 300 mg, secukinumab 150 mg, or placebo. At week 12, patients in the placebo group were reassigned based on their Psoriasis Area Severity Index (PASI) 75 response status; non-responders were reassigned to secukinumab 300 mg (referred here placebo–secukinumab switchers), while PASI 75 responders continued on placebo to week 52. PsA efficacy was assessed using the American College of Rheumatology (ACR) response. Psoriasis was assessed using PASI 75/90/100 and the Investigator's Global Assessment 0/1. Patient-reported outcomes were also assessed using the Dermatology Life Quality Index (DLQI) for psoriasis and the Health Assessment Questionnaire-Disability Index (HAQ-DI) for PsA.

A total of 24/441 (5.4%) of Chinese psoriasis patients had concurrent PsA (secukinumab 150 mg [$n = 6$], secukinumab 300 mg [$n = 14$], placebo [placebo-secukinumab switchers] [$n = 4$]). Demographics were comparable between treatment arms. The mean age and body mass index was 45 years and 24.0 kg/m^2 in the secukinumab 300 mg arm, 42 years and 24.7 kg/m^2 in the secukinumab 150 mg arm, and 40 years and 27.0 kg/m^2 in the placebo arm, respectively. At baseline, patients had comparable mean

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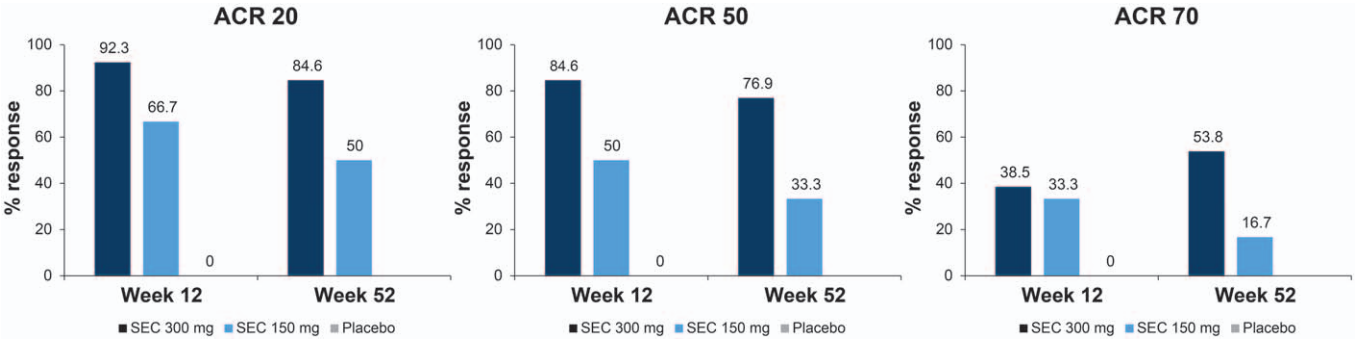

Figure 1: Proportion of patients with ACR 20/50/70 response at week 12 and week 52. ACR: American College of Rheumatology; SEC: Secukinumab.

PASI scores (secukinumab 300 mg: 29.3 [14.7–52.4; $n = 14$]; secukinumab 150 mg: 25.1 [15.6–36.6; $n = 6$]; placebo: 24.2 [19.2–35.5; $n = 4$]), and body surface area affected (secukinumab 300 mg: 45.1% [15.0%–82.0%]; secukinumab 150 mg: 41.8% [16.0%–71.0%]; placebo: 36.6% [28.0%–46.0%]). The mean PsA duration was 6.8, 6.9, and 2.3 years in the secukinumab 300, 150 mg, and placebo arms, respectively. A higher proportion of patients in the secukinumab 300 mg arm had severe disease (IGA score of 4) (secukinumab 300 mg: 8 [57.1%]; secukinumab 150 mg: 4 [66.7%]; placebo: 2 [50.0%]).

The proportion of psoriasis patients with PsA showing an ACR 20 response was high in patients treated with secukinumab at week 12 (secukinumab 300 mg: 12/13 [92.3%]; secukinumab 150 mg: 4/6 [66.7%]; placebo: 0/4 [0]) [Figure 1]. The majority of secukinumab patients sustained this response up to week 52 (11/13 [84.6%] and 3/6 [50.0%] with secukinumab 300 and 150 mg, respectively). Secukinumab-treated patients demonstrated a similar trend of sustained responses for ACR 50/70 at week 52 (ACR 50: 10/13 [76.9%] and 2/6 [33.3%]; ACR 70: 7/13 [53.8%] and 1/6 [16.7%] with secukinumab 300 and 150 mg, respectively) [Figure 1]. Most secukinumab-treated patients achieved PASI 75 responses at week 12 (secukinumab 300 mg, 92.9%; secukinumab 150 mg, 83.3%; placebo, 0) with sustained/improved responses up to week 52 (92.9% [300 mg] and 97.3% [150 mg]). Proportion of patients achieving PASI 90 (12/14 [85.7%] and 3/6 [56.0%] with secukinumab 300 and 150 mg, respectively), PASI 100 (7/14 [50.0%] and 1/6 [10.3%]), and IGA 0/1 (11/14 [78.6%] and 1/6 [23.7%]) were higher with the secukinumab 300 mg dose compared with 150 mg at week 52. A higher proportion of patients achieved DLQI 0/1 (indicating no effect on patient's life) at week 12 (secukinumab 300 mg, 21.4%; secukinumab 150 mg, 33.3%; placebo, 0) with further improvement at week 52 (secukinumab 300 mg, 50.0%; secukinumab 150 mg, 66.7%; placebo–secukinumab switchers, 25.0%). A 64.2% and 40.5% reduction in HAQ-DI score was noted with secukinumab 300 and 150 mg, respectively, from baseline to week 52. As the study had a small sample size, statistical comparison could not be performed between treatment groups. Radiographic evaluation was not carried out for this study. However, the previous FUTURE 5 study demonstrated evidence that secukinumab has low rates of radiographic progression in PsA patients over 52 weeks.[6]

All psoriasis patients with PsA experienced at least one treatment-emergent adverse event. Over 52 weeks, 41.7% (10/24) and 83.3% (20/24) of patients receiving any secukinumab dose experienced a gastrointestinal AE or non-serious infection, of which 29.2% (7/24) and 62.5% (15/24) were considered as possibly related to study treatment. This was compared with 50% (2/4; gastrointestinal AE) and 25% (1/4; non-serious infection) in patients receiving placebo, all of which were possibly related to study treatment. Hypersensitivity was also common in patients receiving any secukinumab dose (8/24 [33.3%]; 3/24 [12.5%] possibly related to study treatment), including eczema (3/24 [12.5%]; 1/24 [4.2%] possibly related to study treatment), urticaria (3/24 [12.5%]; 2/24 [8.3%] possibly related to study treatment), dermatitis (1/24 [4.2%]), and eyelid edema (1/24 [4.2%]) over 52 weeks. One patient experienced a serious adverse event (SAE; hemorrhoids) which was deemed unrelated to secukinumab treatment.

In summary, secukinumab demonstrated high efficacy outcomes in Chinese psoriasis patients with concomitant PsA at week 12 sustained to week 52. Secukinumab 300 mg dose showed a greater improvement for both skin lesions and arthritis with 93% achieving PASI 75, 79% IGA 0/1, and 85% ACR 20 responses over week 52. Quality of life was restored in over 50% of patients and previous disability due to PsA symptoms greatly improved (DLQI and HAQ-DI) over week 52. Safety was in line with the known safety profile for secukinumab, and no new safety signals were identified.

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Conflicts of interest

Lin Cai has participated in advisory boards and/or as an investigator and/or speaker and received grants and/or honoraria from Novartis, AbbVie, Pfizer Inc. Jian-Zhong Zhang has participated in advisory boards and/or as an investigator and/or speaker and received grants and/or honoraria from LEO Pharma China, Novartis, Sanofi, La Roche-Posay China, AbbVie, Bayer, Janssen-Cilag, Henlius, Kyowa Kirin, and Pfizer Inc. Min Zheng has participated in advisory boards and/or as an investigator and/or speaker and received grants and/or honoraria from AbbVie, Janssen-Cilag, Boehringer Ingelheim, LEO Pharma China, Xian-Janssen, Novartis, and Pfizer Inc. Shi-Fa Zhang has participated in advisory boards and/or as an investigator and/or speaker and received grants and/or honoraria from LEO Pharma China, Novartis, Janssen-Cilag, and Henlius. Manmath Patekar is an employee of Novartis.

References

1. Gottlieb AB, Merola JF. Axial psoriatic arthritis: an update for dermatologists. J Am Acad Dermatol 2021;84:92–101. doi: 10.1016/j.jaad.2020.05.089.
2. Ding X, Wang T, Shen Y, Wang X, Zhou C, Tian S, *et al*. Prevalence of psoriasis in China: a population-based study in six cities. Eur J Dermatol 2012;22:663–667. doi: 10.1684/ejd.2012.1802.
3. Cai L, Zhang JZ, Yao X, Gu J, Liu QZ, Zheng M, *et al*. Secukinumab demonstrates high efficacy and a favorable safety profile over 52 weeks in Chinese patients with moderate to severe plaque psoriasis. Chin Med J 2020;133:2665–2673. doi: 10.1097/CM9.0000000000001163.
4. Alinaghi F, Calov M, Kristensen LE, Gladman DD, Coates LC, Jullien D, *et al*. Prevalence of psoriatic arthritis in patients with psoriasis: a systematic review and meta-analysis of observational and clinical studies. J Am Acad Dermatol 2019;80:251e19–265e19. doi: 10.1016/j.jaad.2018.06.027.
5. Ly K, Smith MP, Thibodeaux Q, Reddy V, Liao W, Bhutani T. Anti IL-17 in psoriasis. Expert Rev Clin Immunol 2019;15:1185–1194. doi: 10.1080/1744666x.2020.1679625.
6. van der Heijde D, Mease PJ, Landewé RBM, Rahman P, Tahir H, Singhal A, *et al*. Secukinumab provides sustained low rates of radiographic progression in psoriatic arthritis: 52-week results from a phase 3 study, FUTURE 5. Rheumatology (Oxford) 2020;59:1325–1334. doi: 10.1093/rheumatology/kez420.

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