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Real World SB4 (Etanercept Biosimilar) Use in Patients With Psoriasis: Data from the British Association of Dermatologists Biologic Interventions Register (BADBIR)

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INTRODUCTION

Psoriasis is a chronic, systemic, inflammatory skin disease with a risk of comorbidities and a potential high impact on patients' quality of life. The introduction of biologic therapies has improved the management of psoriasis, but the high cost limits access to these medications. A biosimilar is a biological product that is highly similar to a reference product, for which there are no clinically meaningful differences from a reference product in terms of safety, purity and potency.[1,2] Although regulatory approval pathways for biosimilars is abbreviated, the development of biosimilars requires extensive scientific analyses and stringent manufacturing processes.[3] Biosimilars can lower treatment costs, thereby increasing patient access, which may lead to better overall outcomes.[4]

SB4 is an approved biosimilar of the reference etancercept in EU.[5] Compared to other indications, such as rheumatological disorders or inflammatory bowel disease, there are few published real world experiences with biosimilars in psoriasis, and most of them are limited to short-term data.[6,7] Here, we report clinical outcomes of SB4 in psoriasis patients enrolled in BADBIR, a prospective observational register of patients with psoriasis in the UK and Republic of Ireland.[8] There is a strong uptake of biosimilars in the UK and uptake of etanercept biosimilars is reaching up to 86%.[9] With the availability of biosimilars, clinical experience with biosimilar use may provide additional assurance that biosimilar is as effective and safe as the reference product.

MATERIALS AND METHODS

Data of patients recorded in BADBIR and treated with SB4 from Jan 01, 2016 were transferred. Data cut off date was Sep 01, 2018. Transferred data included patient demographics, disease characteristics at registry enrollment, change in therapy and measurement of effectiveness.

Discontinuation of therapy was defined as any gap in treatment for more than 90 days and patients had recorded as discontinuation during the follow-up were regarded as discontinued. The discontinuation data were assessed with Kaplan Meier analysis.

Baseline Psoriasis Area and Severity Index (PASI) and Dermatology Life Quality Index (DLQI) were based on the highest PASI and DLQI recorded within 183 days prior to a specific time point. PASI and DLQI at 6 months represents PASI and DLQI score recorded between 4--8 months (12--243 days). Efficacy assessment was conducted based on patients who had PASI and DLQI score both at baseline and at 6 months.

RESULTS

Clinical data on 189 patients who were newly registered to BADBIR were available for analysis. Baseline enrollment characteristics were: Mean age was 47.3±13.1 year, 56.1% were male, and mean body mass index (BMI) was 30.7±6.7 kg/m^2. 18.5% of patients had psoriatic arthritis. The mean disease duration was 22.6±13.5 years, and baseline PASI and DLQI were 11.6±7.3 and 13.1±8.9, respectively.

At the initation of SB4, 16 patients (8.5%) were previously exposed to biologic (13, reference etanercept; 3, adalimumab; 1, infliximab biosimilar; 1, secukinumab; 1, ustekinumab). Among these, 10 patients were transitioned from reference etanercept to SB4. The reasons for this transition were: financial consideration (8), inefficacy (1), and other (1).

Median treatment period for SB4 was 14.1 months (IQR, 7.6--20.1 months). There were 50 discontinuations out of 190 treatment sequences, 24.4% at 12 months and 29.3% at 24 months analyzed by Kaplan Meier method (Figure 1). Most discontinuation of SB4 occurred within 12 months and median time to discontinue SB4 from the start was 5.4 months (IQR, 3.5--9.1 months). Reasons for discontinuation included lack of effectiveness (30), adverse events (8), patient choice (3), patient non-compliance (2), contradiction (1), death (1), lack of effectiveness and adverse events (1), and others (4). Among the 10 patients who

FIGURE 1. Kaplan-Meier plot of discontinuation rate of SB4. One patient discontinued SB4 for more than 90 days and restarted SB4, which was regarded as two separate events.

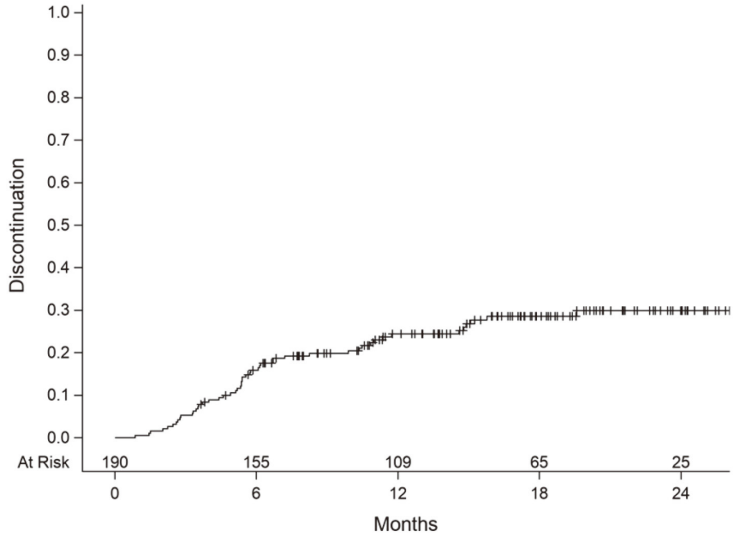
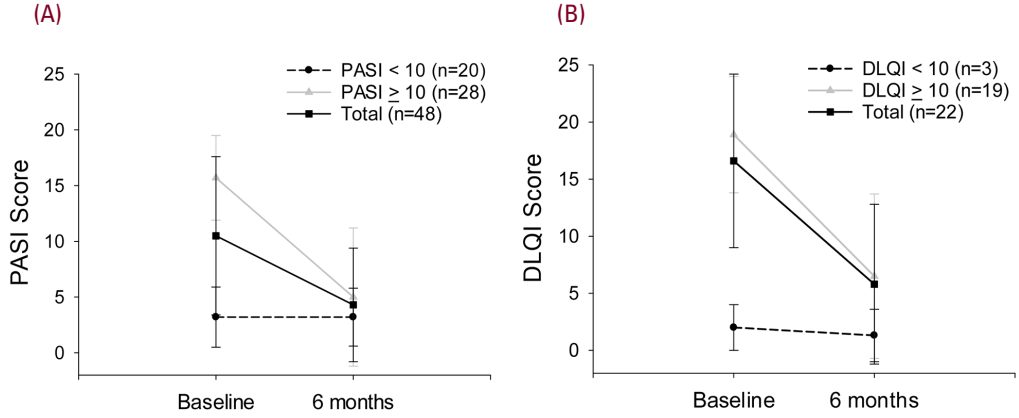


FIGURE 2. Assessment of effectiveness of SB4. (A) Mean PASI reduction at 6 months by baseline PASI after the initiation of SB4. (B) Mean DLQI reduction at 6 months by baseline DLQI after the initiation of SB4.



were switched from reference etanercept, two patients discontinued SB4 due to either lack of effectiveness or adverse events.

Effectiveness was assessed in patients who had PASI and DLQI both at baseline and at 6 months. 48 patients were categorized by their PASI score at baseline (<10 or ≥10; Figure 2A). For 20 patients with baseline PASI <10 (mean PASI, 3.2±2.7), disease activity was maintained at 6 months (mean PASI, 3.2±2.6), with mean PASI reduction of 0.0±2.3. For 28 patients with baseline PASI ≥10 (mean PASI, 15.7±3.8), mean PASI at 6 months was 5.0 ± 6.2 with mean PASI reduction of -10.7±6.6.

For 19 patients with baseline DLQI ≥10 (mean DLQI, 18.9±5.1), mean DLQI at 6 months was 6.5±7.2 with mean DLQI reduction of -12.4±7.1 (Figure 2B). For 3 patients with baseline DLQI <10 (mean DLQI, 2.0±2.0), mean DLQI at 6 months was 1.3±2.3 with mean DLQI reduction of -0.7±3.1.

DISCUSSION

SB4 was effective in patients with psoriasis in a real-life clinical setting. 16 out of 189 patients (8.5%) were previously exposed to biologic and among them, 10 patients were switch patients from reference etanercept. This transition was mainly non-medical switch. Reasons for discontinuation appeared similar to what would be expected for the reference etanercept.

Kaplan Meier analysis showed that the discontinuation rate of SB4 at 12 months was 24.4%. This is comparable to a previously reported discontinuation rate of reference etanercept in BADBIR, which was based on biologic naïve patients.[13] In our study, most patients were biologic naïve and the patient demographics are similar to the etanercept cohort except for baseline PASI. Baseline PASI at the iniation of SB4 was 11.6±7.3 while baseline PASI for etanercept cohort at BIADBIR was 15.4±7.9. The discon-

tinuation rate for reference etanercept at 1 year at BADBIR was reported to be 30%. The slight difference in discontinuation rate might come from the fact that in our study biologic experienced patients and patients with lower baseline PASI were included. Other studies also suggest no significant differences in risk of discontinuation between SB4 and reference etanercept, not only in psoriasis but also in RA.[6,7,14]

The 5 patients who stopped SB4 for patient choice or non-compliance may reflect nocebo effects associated with biosimilars. Nocebo effects, patients' negative anticipation of biosimilar treatment, are often observed in real world settings and result in suboptimal outcomes.[10] Such nocebo effect can be managed by obtaining informed consent prior to switching to biosimilars and by educating both HCP and patients to increase awareness on biosimilars.[11] Real world evidence on biosimilars can provide additional reassurance to reduce nocebo effect.[12]

Analysis on reduction in PASI and DLQI at 6 month from the patients with available data showed SB4 either maintained or improved disease activity. This is in line with other studies where similar levels of PASI reduction are observed with SB4 treatment.[7,15]

While a limitation of this study is that we did not have access to raw data on other biologics in the register for comparison, we were able to compare our findings to previously published BADBIR data on etanercept.

In conclusion, data from BADBIR show that the use of SB4 in clinical practice was effective in patients with psoriasis. As more long-term real world evidence on biosimilars accumulates, confidence in biosimilars will likely be increased, and nocebo effect with biosimilar use may be reduced, thereby helping to realize more fully the cost saving potiential of biosimilars.

DISCLOSURES

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The study was sponsored by Samsung Bioepis and Samsung Bioepis received raw data from BADBIR and performed analyses.

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