

Cost per responder for biologic drugs used in the treatment of moderate-to-severe plaque psoriasis in France and Germany

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Introduction and Objective

Plaque psoriasis is a chronic immune-mediated skin disease associated with reduced quality of life, pain, pruritus and bleeding of the affected areas (1-2). Advances in biologic drugs used to treat moderate-to-severe plaque psoriasis have in recent years greatly improved the outcomes for patients suffering from the disease (3-5).

With the recent approval of bimekizumab, the objective of this study was to estimate the cost per responder of anti-IL17 drugs (primary analysis) and other biologics (secondary analysis) used in the treatment of moderate-to-severe plaque psoriasis in France and Germany over a one-year time-horizon.

Materials and Methods

Cost per responder model

A cost per responder model of biologics used in psoriasis treatment was developed based on both induction and maintenance treatment periods. Anti-IL17s (brodalumab, bimekizumab, ixekizumab and secukinumab), anti-TNFs (adalimumab, etanercept), anti-IL12/23 (ustekinumab) and anti-IL23s (risankizumab and guselkumab) were included in the model.

Input data

Efficacy data were identified through a systematic literature review of network meta-analyses that informed on various long-term Psoriasis Area and Severity Index (PASI) measures. To align with the one-year time horizon, we used PASI100 long-term (48-56 weeks of treatment) response rates (6). The cost of drugs was based on dose recommendations (7) as well as the pharmacy list prices in France and manufacturer prices in Germany (8-9). When biosimilar substitution was possible, the cheapest alternative was used.

Results

Primary analysis

Among the anti-IL17s, brodalumab had the lowest cost per PASI100-responder in both France (€20,220) and Germany (€26,807) after the initial treatment year, followed by bimekizumab (€26,369) in France and ixekizumab (€38,027) in Germany. Figure 1 illustrates the results from the primary analysis.

Secondary analysis

Brodalumab remained the most cost-effective treatment when including all drug classes. Adalimumab had the lowest cost per PASI100-responder after the initial treatment year among the anti-TNFs in both France (€23,418) and Germany (€38,264). The cost per PASI100-responder for ustekinumab after the initial treatment year was €35,666 in France and €72,078 in Germany. Among the anti-IL23s, risankizumab had lowest cost per PASI100-responder after the initial treatment year in both France (€20,969) and Germany (€26,994). The results are presented in Figure 2.

Scenario analysis

To assess the robustness of the primary analysis, we conducted two scenario analyses using PASI75 and PASI90 as efficacy measure instead of PASI100. The less stringent definition of responders (PASI75 or PASI90) resulted in a lower cost per responder since more patients were classified as responders. However, this did not affect the order of cost-effectiveness in France or Germany. Table 1 presents the results from the scenario analyses where the alternative efficacy measures were used.

Conclusion

Over a one-year time-horizon, brodalumab was the most cost-effective biologic in France and Germany for the treatment of moderate-to-severe plaque psoriasis both within the anti-IL17 class, and when compared to all other biologics.

References

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Disclosures

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Figure 1. Cost per PASI100-responder after the initial treatment year with anti-IL17s

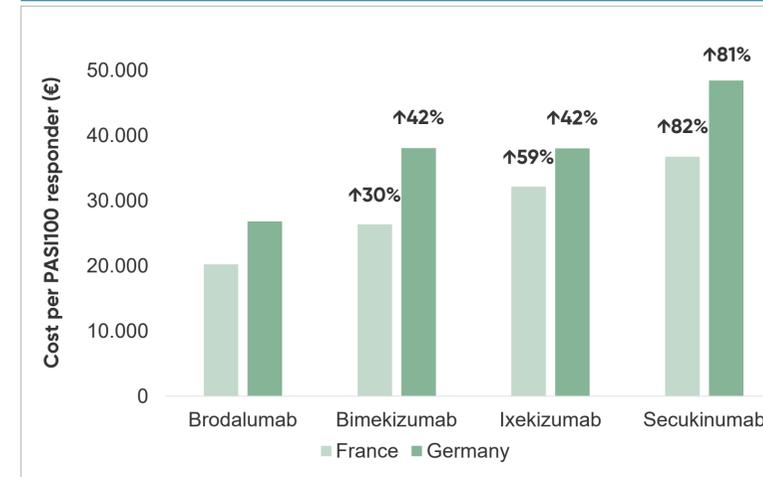


Figure note: Data labels show the difference (in percent) in cost per responder compared to the most cost-effective treatment (brodalumab).

Figure 2. Cost per PASI100-responder after the initial treatment year with anti-IL17s and other biologics

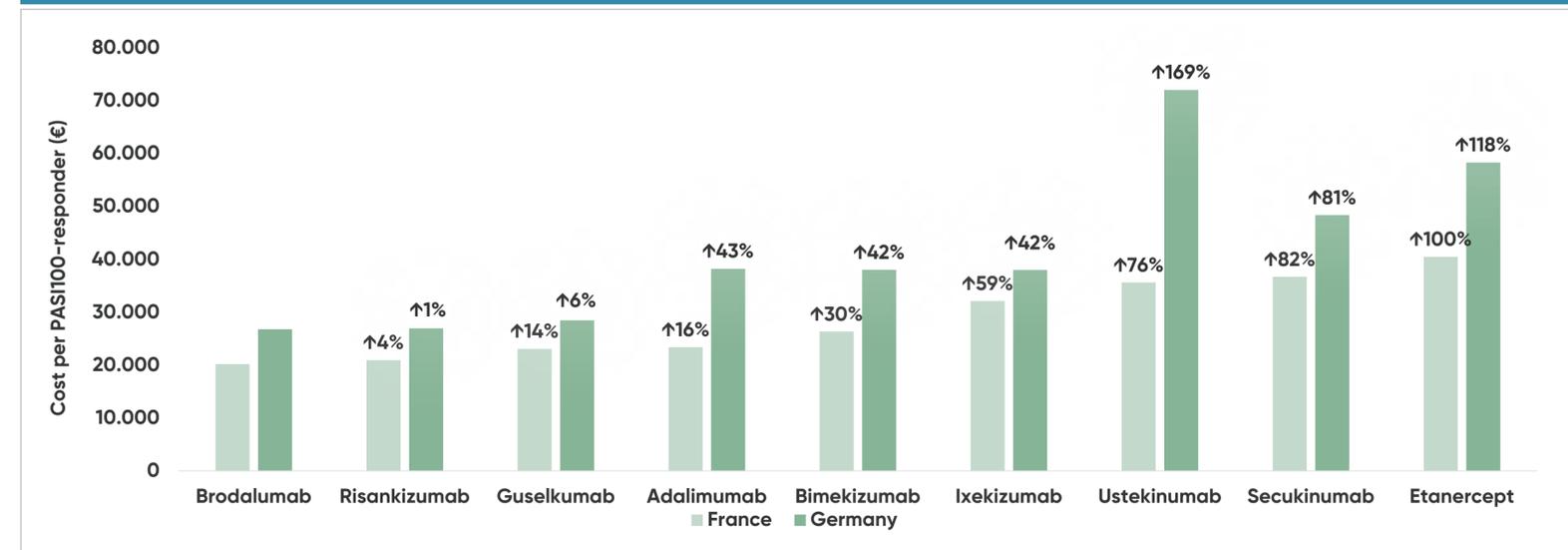


Figure note: Data labels show the difference (in percent) in cost per responder compared to the most cost-effective treatment (brodalumab).

Additional Remarks

Since submission of the abstract to ISPOR 2023, certain drug prices were updated in France (brodalumab) and Germany (risankizumab and guselkumab). We have updated the results presented in this poster using the newest available data. In France, this meant that the most cost-effective treatment overall was changed from risankizumab to brodalumab (previously ranked number 1 and 2, respectively). In Germany, this meant that the most cost-effective anti-IL23 was changed from risankizumab to guselkumab. In the present poster the cost of each treatment was based on the pharmacy list prices in France extracted on 1 February 2023 and the manufacturer prices in Germany extracted on 15 March 2023.