Cost-per-responder Analysis of Bimekizumab (IL-17A/F inhibitor) against IL-17A, IL-12/23 and IL-23 inhibitors for the Treatment of Psoriatic Arthritis in Finland

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Objective

To assess the cost-per-responder of bimekizumab, a humanized monoclonal IgG1 and a selective inhibitor of interleukin (IL)-17F in addition to IL-17A, by prior biologic exposure, against other approved IL-17A, IL-12/23 or IL-23 inhibitors for psoriatic arthritis (PsA) in Finland.

Introduction

- Current Finnish treatment guidelines (Psoriaasi Käypä Hoito-suositus)[1] for PsA include cost-per-responder to achieve American College of Rheumatology (ACR) 50, but lack most recently approved treatments, bimekizumab and risankizumab.
- BE OPTIMAL (NCT03895203)[2] and BE COMPLETE (NCT03896581)[3] demonstrated the efficacy and safety of treatment with subcutaneous bimekizumab 160 mg every 4 weeks (Q4W) in patients with PsA who were naïve to biologic disease-modifying anti-rheumatic drugs (biologic-naïve) or had prior inadequate response or intolerance to one or two previous tumor necrosis factor inhibitors (TNFi-exp), respectively.

Materials and Methods

A cost-per-responder model was developed based on the patient populations in the BE OPTIMAL and BE COMPLETE trials.

- Treatments included were bimekizumab 160mg Q4W, secukinumab 150mg/300mg Q4W, ixekizumab 80mg Q4W, ustekinumab 45mg/90mg Q12W (every 12 weeks), guselkumab 100mg Q4W/Q8W (every 8 weeks), and risankizumab 150mg Q12W.
- Efficacy outcomes assessed were ACR50, Psoriasis Area and Severity Index (PASI) 100 (complete response) and Minimal Disease Activity (MDA) at 16 weeks.
- Drug acquisition costs (pharmacy retail prices) were obtained from HILA's price database[4] (April 2024) and used to calculate the total drug cost per patient over the first 16 weeks as per label.
- Response rates derived from a network meta-analysis[5] were used to calculate the number needed-to-treat, multiplied by cost-per-patient for each intervention to obtain the cost-per-responder. Some data were not captured for certain drugs and populations in the NMA.

Results

ACR50:

- For ACR50, bimekizumab had the lowest cost-per-responder (9.667€ for biologic-naïve and 8.826€ for TNFi-exp) whereas the highest cost-per-responder was guselkumab 100mg Q4W for biologic-naïve (32.499€) and ustekinumab 45 mg for TNFi-exp (30.709€) (**Figure 1**).

PASI100:

- For PASI100, bimekizumab had the lowest cost for both subgroups (8.639€ and 7.000€), whereas the highest cost was secukinumab 300mg for biologic-naïve (29.192€) and ixekizumab for TNFi-exp (28.947€) (**Figure 2**).

MDA:

- For MDA, bimekizumab had the lowest cost (10.411€ and 9.023€ respectively), whereas the highest cost was guselkumab 100mg Q4W for biologic-naïve (35.325€) and secukinumab 300mg for TNFi-exp (29.192€) (**Figure 3**).

Conclusions

Based on published network meta-analysis response rates and drug acquisition costs, bimekizumab demonstrated the lowest cost-per-responder outcomes among approved IL-17A, IL-12/23 or IL-23 inhibitors for patients with PsA in Finland.

Summary of Cost-Per-Responder Results

As per the analysis, **bimekizumab demonstrated the lowest cost of treatment**:

Biologic-naïve			
ACR50	Amongst 9 treatments	**PASI 100**	Amongst 6 treatments
MDA	Amongst 7 treatments		

TNFi-exp			
ACR50	Amongst 8 treatments	**PASI 100**	Amongst 4 treatments
MDA	Amongst 6 treatments		

Limitations

- Where data was not captured for certain drugs and population subgroups in the NMA, cost-per-responder results could not be calculated.
- There are limited numbers of head-to-head randomized control clinical trials that exist for IL-17A, IL-23/12 or IL-23 inhibitor therapies.

Figure 1 Cost-per-responder (€), ACR50 results (biologic-naïve and TNFi-exp)

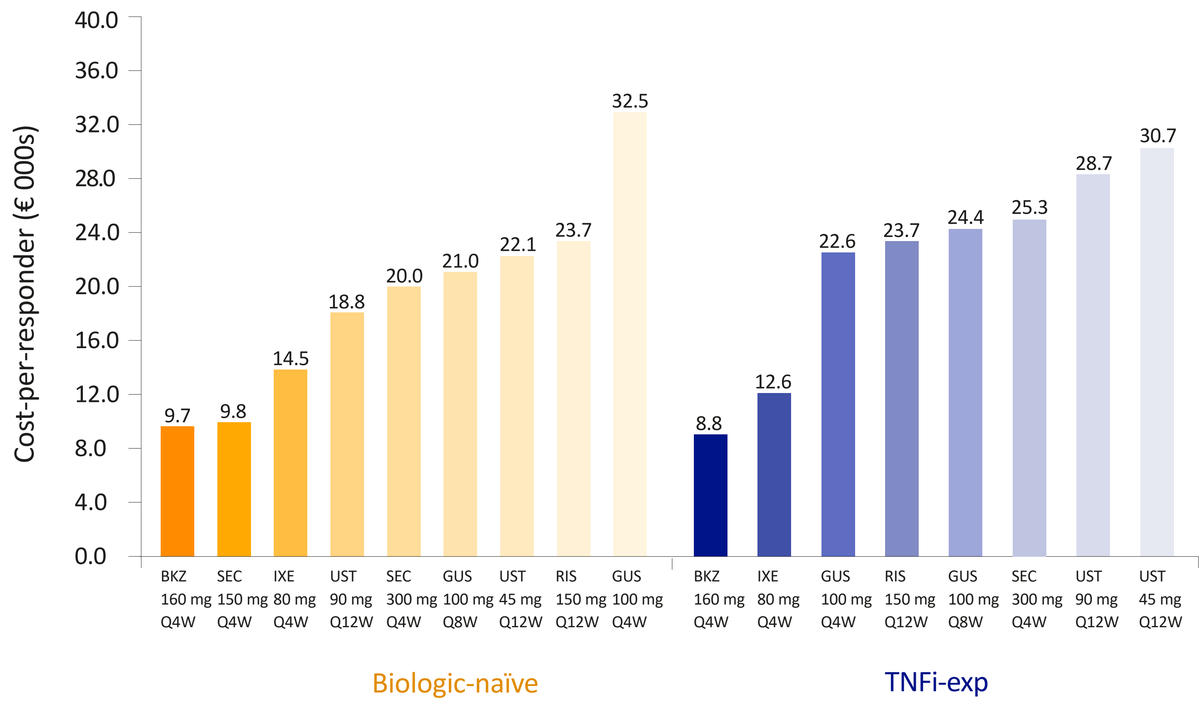
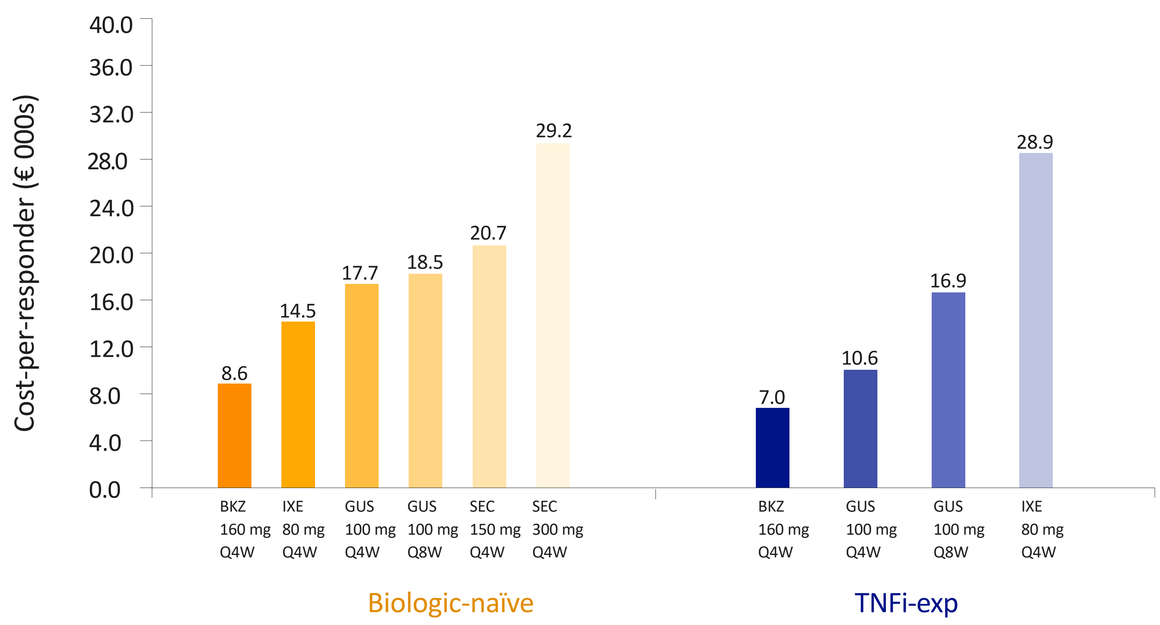
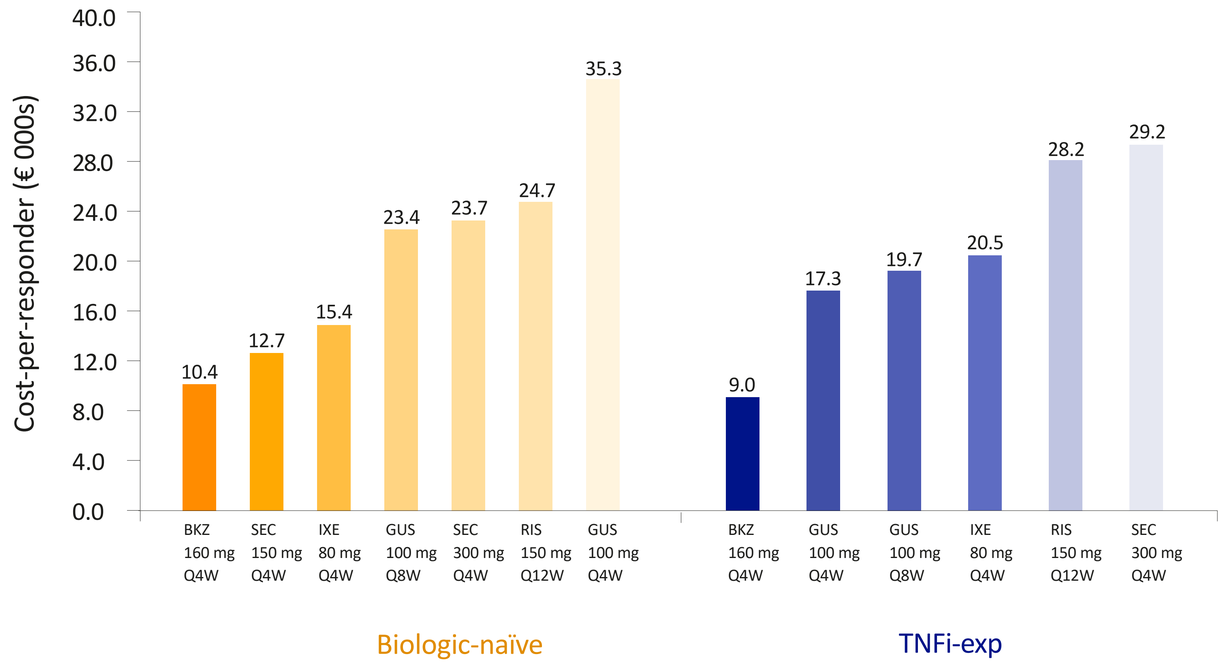


Figure 2 Cost-per-responder (€), PASI100 results (biologic-naïve and TNFi-exp)*



*PASI100 efficacy data for RIS 150 mg Q12W, UST 45 mg Q12W and UST 90 mg Q12W was not available for biologic-naive and TNFi-exp patients. PASI100 efficacy data for SEC 300 mg Q4W was not available for TNFi-exp patients.

Figure 3 Cost-per-responder (€), MDA results (biologic-naïve and TNFi-exp)*



*MDA efficacy data for UST 45 mg Q12W and UST 90 mg Q12W was not available.

ACR50: American College of Rheumatology (≥50% improvement from baseline in ACR criteria); **BKZ**: bimekizumab; **EUR**: Euro; **GUS**: guselkumab; **IL**: interleukin; **IXE**: ixekizumab; **HILA**: Lääkkeiden hintalautakunta; **MDA**: Minimal Disease Activity; **PsA**: psoriatic arthritis; **PASI100**: Psoriasis Area and Severity Index (100% improvement from baseline); **Q4W**: every four weeks; **Q8W**: every eight weeks; **Q12W**: every twelve weeks; **RIS**: risankizumab; **SEC**: secukinumab; **TNFi-exp**: tumor necrosis factor inhibitor experienced; **UST**: ustekinumab.

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References: [1]Psoriaasi (iho ja nivelet). Käypä hoito -suositus. Working group by Finnish Medical Society Duodecim and Finnish Dermatological Society. Accessed April 2024. Available from www.kaypahoito.fi; [2]McInnes IB. Lancet 2023;401:25-37; [3]Merola JF. Lancet 2023;401:38-48; [4]HILA. Reimbursable authorized medicinal products and their prices. Accessed April 2024. Available from: https://www.hila.fi/en/notices/reimbursable-authorized-medicinal-products-and-their-prices/; [5]Mease PJ. Rheumatology (Oxford) 2024;63:1779-1789. **Author disclosures**: **LV**: Employee of UCB; **NL**: Employee and shareholder of UCB; **PE**: Employee of UCB; **AF**: Employee of Quantify Research; **DW**: Employee and shareholder of UCB. **Acknowledgements**: We would like to thank the patients and their caregivers in addition to all the investigators and their teams who contributed to this study. The authors acknowledge Heather Edens PhD, UCB, Smyrna, Georgia, USA for publication coordination, Charlotte Evans, BSc, Costello Medical, Bristol, UK for editorial assistance, and the Costello Medical Creative team for design support. This study was funded by UCB. All costs associated with development of this presentation were funded by UCB.