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Cost-Per-Responder Analysis of Bimekizumab (IL-17A/F inhibitor) against IL-17A and IL-12/23 Targeted Therapies for Psoriatic Arthritis in Spain, based on Matching-Adjusted Indirect Comparisons

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Objectives

Bimekizumab is a monoclonal IgG1 antibody that selectively inhibits interleukin (IL)-17F in addition to IL-17A, recently approved to treat patients with active psoriatic arthritis (PsA) in the European Union.[1] This study compares the cost-per-responder (CPR) of bimekizumab with IL-17A and IL-12/23 targeted therapies (secukinumab and ustekinumab) for the treatment of patients with PsA in Spain.

Methods

The CPR was calculated by dividing the average annual drug cost per patient (**Table 1**) by the response rates (**Table 2**).

- Spanish list prices were considered, including the Royal Decree Law 8/2010 discount.[2,3]
- Dosing regimens were informed by each treatment's Summary of Product Characteristics (bimekizumab 160 mg - Q4W, secukinumab 150 mg - Q4W (biologic disease-modifying antirheumatic [bDMARD]-naïve patients), secukinumab 300 mg - Q4W and ustekinumab 45 mg - Q12W).[4]
- Minimal disease activity (MDA), American College of Rheumatology (ACR) 50 and ACR70 response rates at week 52 in patients who are bDMARD-naïve or who experienced inadequate response or intolerance to tumour necrosis factor inhibitors (TNFi-IR) from two published Matching-Adjusted Indirect Comparisons (MAIC) were used.[5,6]

Results

BDMARD - naïve patients:

- The CPR for bimekizumab (€31,091 for ACR50 and €41,022 for ACR70) was lower compared to ustekinumab (€42,639 and €74,307, respectively) **(Figure 1A)**, ranging between -27.1% (for ACR50) and -44.8% (for ACR70) **(Figure 2)**.
- The CPR for bimekizumab (€33,061 for MDA, €31,033 for ACR50 and €39,009 for ACR70) compared to secukinumab 300 mg (€39,652, €30,384 and €58,962, respectively) **(Figure 1A)** was also lower, except for that calculated for ACR50 (2.1% higher) **(Figure 2)**.
- Compared to secukinumab 150 mg, CPR for bimekizumab was higher for all three efficacy measures, ranging between (17.1% for ACR70 to 92.5% for ACR50) **(Figure 2)**.

TNFi - IR patients:

- The CPR for bimekizumab (€41,224 for MDA, €34,928 for ACR50 and €52,835 for ACR70) was lower compared to secukinumab 300 mg (€83,919, €58,098 and €87,146, respectively) **(Figure 1B)**.
- The CPR for bimekizumab (€33,392 for ACR50 and €48,961 for ACR70) compared to ustekinumab (€76,087 and €254,131, respectively) was also lower **(Figure 1B)**.
- Bimekizumab has a lower CPR, ranging between -39.4% (compared to secukinumab 300 mg for ACR70) and -80.7% (compared to ustekinumab for ACR70) **(Figure 2)**.

Conclusions

Based on published MAIC responses rates for MDA, ACR50 and ACR70 at week 52, the CPR analyses demonstrated many situations in which it is more cost-efficient to treat patients with PsA in Spain with bimekizumab than with secukinumab or ustekinumab.

Table 1 Average annual drug costs (year 1 and year 2)

Biological drug	List price per unit*	Dose	Average annual units	Average annual drug costs
Bimekizumab 160 mg	**€ 1,236.73**	**160 mg Q4W**	**13.5 units**	**€ 16,695.79**
Secukinumab 150 mg	**€ 528.69**	**150 mg wk 0-1-2-3-4 150 mg Q4W**	**15 units**	**€ 7,930.40**
Secukinumab 300 mg	**€ 1,057.38**	**300 mg wk 0-1-2-3-4 300 mg Q4W**	**15 units**	**€ 15,860.65**
Ustekinumab 45 mg	**€ 2,541.31**	**45 mg wk 0-4 45 mg Q12W**	**5 units**	**€ 12,706,54**

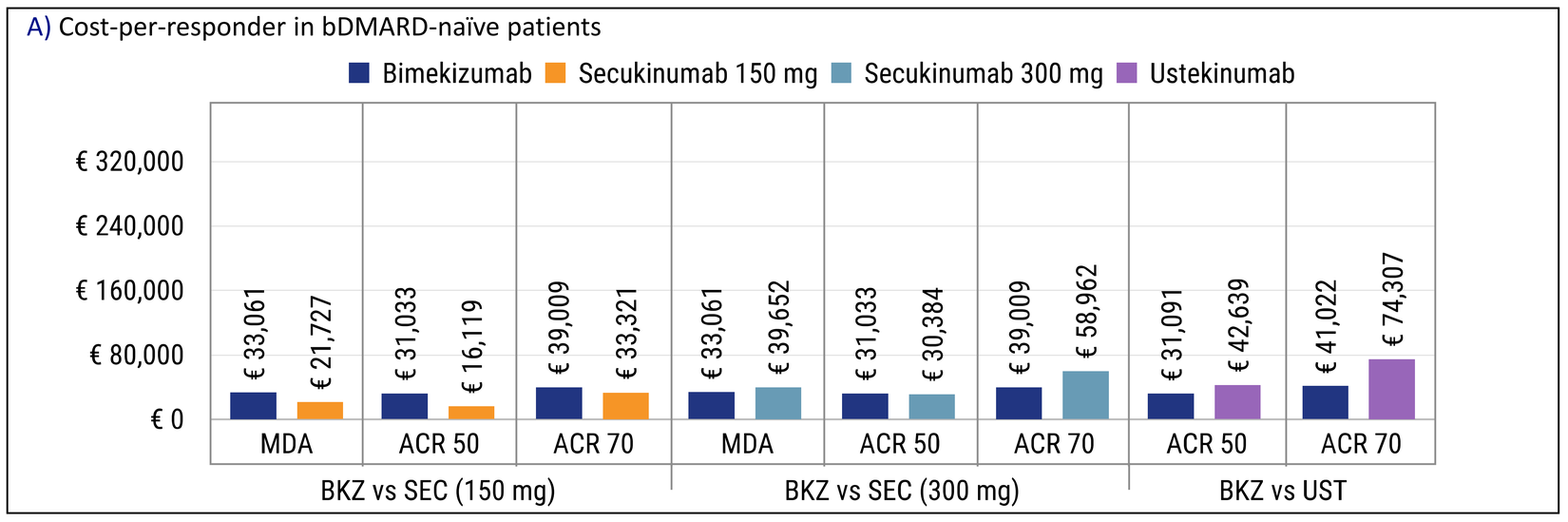
*The price include the Royal Decree Law 8/2010 discount.[3]

Table 2 Bimekizumab adjusted response rates versus comparators at 52 weeks

		MDA	ACR50	ACR70
bDMARD - naïve	**Bimekizumab 160 mg** versus **Secukinumab 150 mg**	**50.5% 36.5%**	**53.8% 49.2%**	**42.8% 23.8%** *
	Bimekizumab 160 mg versus **Secukinumab 300 mg**	**50.5% 40.0%**	**53.8% 52.2%**	**42.8% 26.9%** *
	Bimekizumab 160 mg versus **Ustekinumab 45 mg**	**N.A**	**53.7% 29.8%** *	**40.7% 17.1%** *
TNFi - IR	**Bimekizumab 160 mg** versus **Secukinumab 300 mg**	**40.5% 18.9%** *	**47.8% 27.3%** *	**31.6% 18.2%**
	Bimekizumab 160 mg versus **Ustekinumab 45 mg**	**N.A**	**50.0% 16.7%** *	**34.1% 5.0%** *

*Statistically significant: p ≤ 0.05 ; N.A: not applicable.
Source: Two published MAICs: Mease et al., 2024[5]; Mease et al., 2024[6].

Figure 1 Cost-per-responder of bimekizumab against secukinumab and ustekinumab at 52 weeks



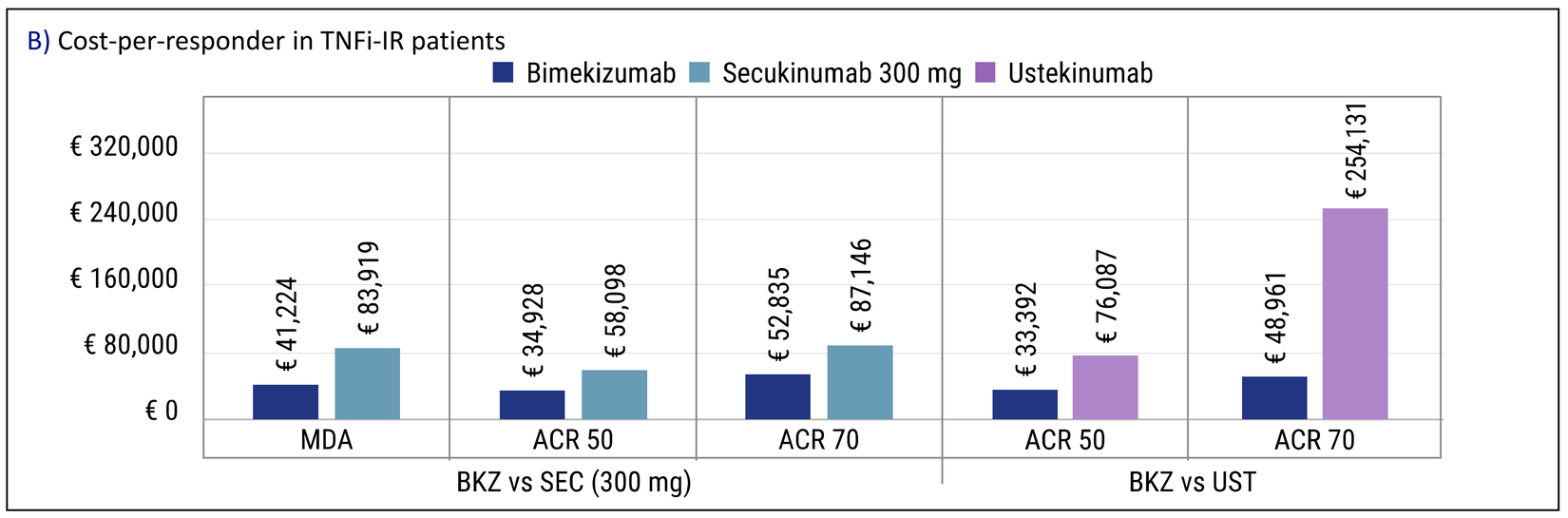
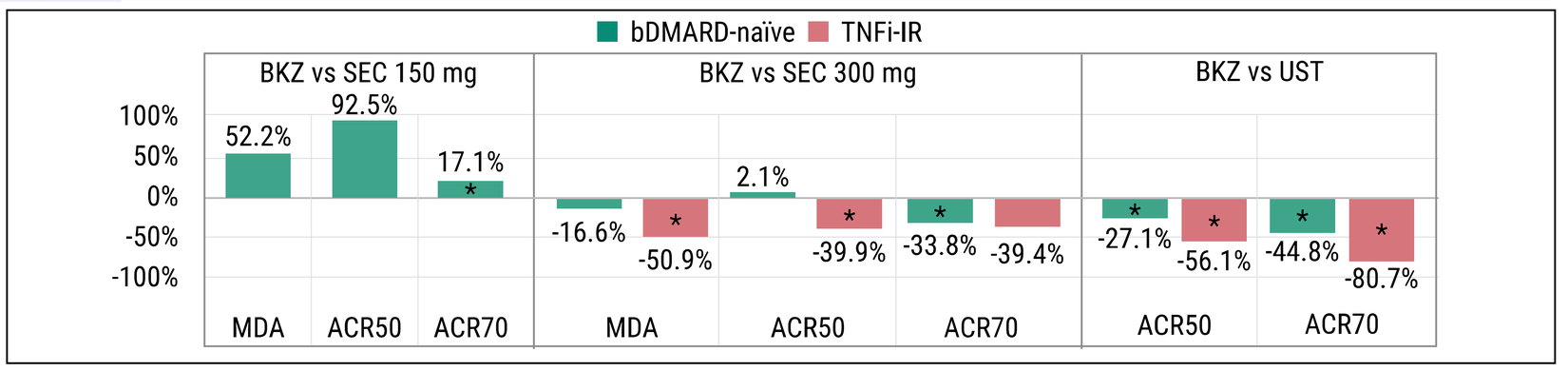


Figure 2 Incremental cost-per-responder of bimekizumab versus comparators at 52 weeks



*Statistically significant: p ≤ 0.05

ACR: American College of Rheumatology; **bDMARD**: biologic disease-modifying antirheumatic drug; **BKZ**: bimekizumab; **CPR**: cost-per-responder; **IL**: interleukin; **MDA**: minimal disease activity; **PsA**: psoriatic arthritis; **Q4W**: every four weeks; **Q12W**: every twelve weeks; **SEC**: secukinumab; **TNFi - IR**: tumor necrosis factor inhibitors inadequate response; **UST**: ustekinumab; **wk**: week

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References: [1]European Medicines Agency. European Public Assessment Report: Bimzelx® (Psoriatic Arthritis) [Internet]. 2023 [cited 2023 Jun 16]. Available from: https://www.ema.europa.eu/en/documents/variation-report/bimzelx-h-c-5316-ii-0011-epar-assessment-report-variation_en.pdf; [2]General Council of Pharmaceutical Associations. BOT PLUS. Base de datos de información sanitaria de medicamentos y productos de parafarmacia [Internet]. [cited 2024 Aug 28]. Available from: https://botplusweb.farmaceuticos.com/; [3]Real Decreto-ley 8/2010, de 20 de mayo, por el que se adoptan medidas extraordinarias para la reducción del déficit público. Agencia Estatal Boletín Oficial del Estado [Internet]. Sect. 1, Real Decreto-ley 8/2010 May 24, 2010 p. 45070–128. Available from: https://www.boe.es/eli/es/rdl/2010/05/20/8; [4]Spanish Agency of Medicines and Medical Devices. CIMA. Centro de información de medicamentos [Internet]. [cited 2024 Jul 29]. Available from: https://cima.aemps.es/cima/publico/home.html; [5]Mease PJ, Warren RB, Nash P, Grouin JM, Lyris N, Willems D, et al. Comparative Effectiveness of Bimekizumab and Secukinumab in Patients with Psoriatic Arthritis at 52 Weeks Using a Matching-Adjusted Indirect Comparison. Rheumatol Ther 2024;11(3):817–28; [6]Mease PJ, Warren RB, Nash P, Grouin JM, Lyris N, Taieb V, et al. Comparative Effectiveness of Bimekizumab and Ustekinumab in Patients with Psoriatic Arthritis at 52 Weeks Assessed Using a Matching-Adjusted Indirect Comparison. Rheumatol Ther. 2024;11(5):1413–23. **Author Contributions:** Substantial contributions to study conception/design, or acquisition/analysis/interpretation of data: **MFJ**, **NCV**, **IMY**, **GDA**, **MS**; Drafting of the publication, or revising it critically for important intellectual content: **MFJ**, **NCV**, **IMY**, **GDA**, **MS**; Final approval of the publication: **MFJ**, **NCV**, **IMY**, **GDA**, **MS**. **Author Disclosures:** **MFJ:** Consultant fees from UCB; **NCV:** Consultant fees from UCB; **IMY and GDA:** Employees of Weber; **MS :** Employee of UCB. **Acknowledgements:** We would like to thank to Costello Medical, Cambridge, UK for editorial assistance, and the Creative team at Costello Medical for design support. This study was sponsored by UCB. All costs associated with development of this poster were funded by UCB.