P1041

Rapid joint and skin responses were observed in patients with active psoriatic arthritis treated with bimekizumab: A pooled analysis from two phase 3 studies

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Objective

To assess speed of treatment response with bimekizumab (BKZ) in patients with psoriatic arthritis (PsA), using joint, skin and composite outcome data pooled from two phase 3 studies.

Introduction

- BKZ, a monoclonal IgG1 antibody that selectively inhibits interleukin (IL)-17F in addition to IL-17A, has shown superior efficacy at 16 weeks vs placebo (PBO) and tolerability in patients with active PsA who were either biologic disease-modifying antirheumatic drug (bDMARD)-naïve or had prior inadequate response or intolerance to tumour necrosis factor inhibitors (TNFi-IR).[1,2]
- Achieving rapid treatment responses is an important predictor for long-term disease control and improvements in quality of life.[3,4]

Methods

- BE OPTIMAL (NCT03895203) and BE COMPLETE (NCT03896581) were phase 3 trials assessing subcutaneous BKZ 160 mg every 4 weeks in patients with PsA who were bDMARD-naïve or TNFi-IR, respectively (**Figure 1**).
- We present a post hoc analysis of pooled study data to Week 16 for BKZ and PBO treatment arms, plus Kaplan-Meier analyses of American College of Rheumatology response criteria ≥50% improvement from baseline (ACR50) by study.
- Nominal p values are reported for the pooled analysis; these analyses were not adjusted for multiplicity.
- Data are reported as observed case (OC) and using multiple imputation (MI; continuous) or non-responder imputation (NRI; binary).

Results

- Of 1,112 patients randomised to BKZ or PBO, 1,074 (96.6%) completed Week 16 of BE OPTIMAL and BE COMPLETE, including 1 patient not on randomised treatment.
- Baseline characteristics were generally similar between treatment groups (**Table**).
- Kaplan-Meier analyses showed early separation between BKZ-treated and PBO patients achieving ACR50 for both bDMARD-naïve and TNFi-IR patients (**Figure 2**).
- In the pooled analysis, greater proportions of patients on BKZ vs PBO achieved improvements in the joints by Week 4, as assessed by ACR50 as well as tender and swollen joint count; improvements remained greater at each visit to Week 16 (p<0.001 for all visits to Week 16; **Figure 3**).
- Likewise, greater proportions of patients on BKZ vs PBO achieved ACR20 and ACR70 at Week 4 (p<0.001 and p=0.001, respectively) and at all subsequent visits to Week 16 (p<0.001 for all visits).
- Similar separation by Week 4 was observed for achievement of the minimal disease activity (MDA) composite and improvements in patient-reported pain (both p<0.001). This continued at all visits to Week 16 (p<0.001 for all visits; **Figure 3**).
- Greater proportions of patients with substantial skin psoriasis at baseline (≥3% body surface area) on BKZ vs PBO achieved 100% improvement from baseline in Psoriasis Area and Severity Index (PASI100) at Week 4 and at all visits to Week 16 (p<0.001 for all visits; **Figure 3**).
- This was similarly observed for PASI75 and PASI90 (p<0.001 for all visits to Week 16).
- Separation between BKZ-treated patients and PBO patients may have occurred at an earlier timepoint than Week 4; however, this could not be assessed in this analysis.

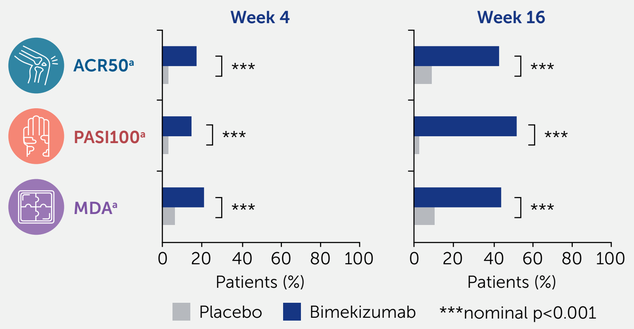
Conclusions

Patients treated with bimekizumab achieved rapid treatment responses, with early separation from placebo, across joint, skin and composite outcomes.

Summary

Achieving rapid treatment responses is an important predictor for long-term disease control and improvements in quality of life.

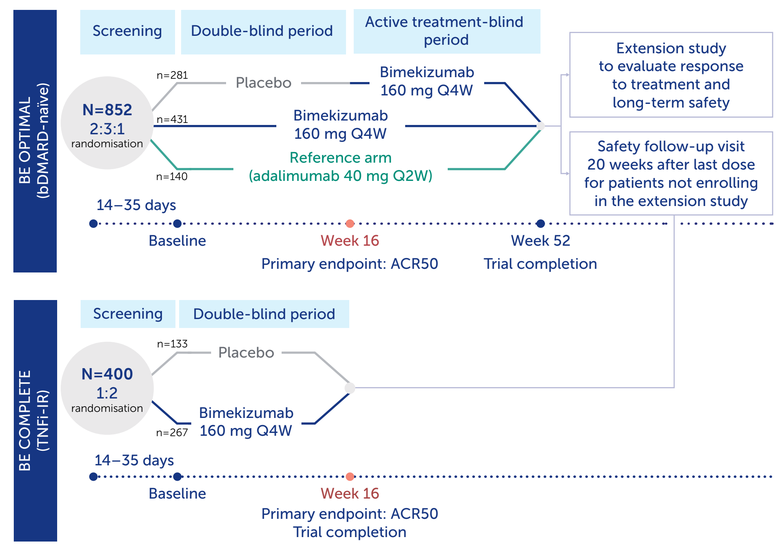
The speed of treatment response with bimekizumab was assessed in patients with psoriatic arthritis using **joint**, **skin** and **composite outcome** data pooled from bDMARD-naïve and TNFi-IR patients.



Bimekizumab-treated patients demonstrated rapid improvements across **joint**, **skin** and **composite outcomes**, with separation from patients receiving placebo observed as early as Week 4; improvements remained greater for patients receiving bimekizumab vs placebo at each visit to Week 16.

[a] Values shown here are NRI.

Figure 1 BE OPTIMAL and BE COMPLETE study designs



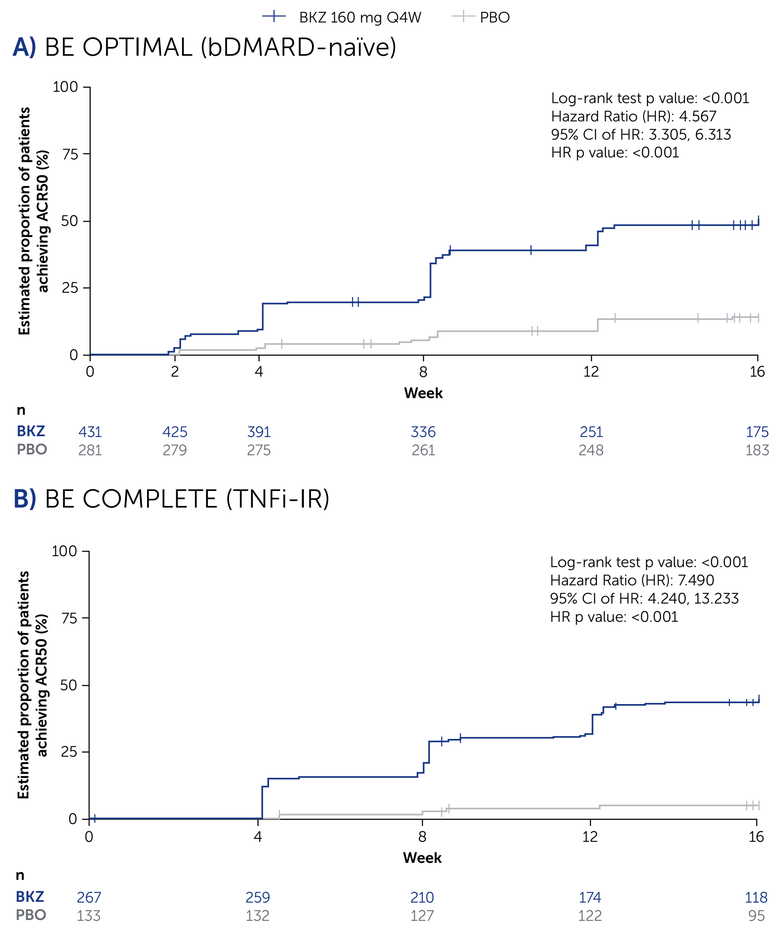
Trial completion for BE OPTIMAL and BE COMPLETE was Week 52 and Week 16, respectively; results reported here for the PBO-controlled period to Week 16 only. The adalimumab 40 mg Q2W treatment arm served as an active reference; results not reported here. The BE OPTIMAL study was not powered for statistical comparisons of adalimumab to BKZ or PBO.

Table Baseline characteristics

	Pooled Analysis (bDMARD-naïve + TNFi-IR)		BE OPTIMAL (bDMARD-naïve)		BE COMPLETE (TNFi-IR)	
	PBO n=414	BKZ 160 mg Q4W n=698	PBO n=281	BKZ 160 mg Q4W n=431	PBO n=133	BKZ 160 mg Q4W n=267
Age (years), mean (SD)	49.5 (12.2)	49.1 (12.5)	48.7 (11.7)	48.5 (12.6)	51.3 (12.9)	50.1 (12.4)
Sex, **male**, n (%)	187 (45.2)	331 (47.4)	127 (45.2)	201 (46.6)	60 (45.1)	130 (48.7)
BMI (kg/m^2), mean (SD)	29.4 (5.9)	29.6 (6.7)	29.6 (6.1)	29.2 (6.8)	29.0 (5.4)	30.1 (6.5)
Time since first PsA diagnosis[a] (years), mean (SD)	6.8 (7.3)	7.4 (8.6)	5.6 (6.5)	6.0 (7.3)	9.2 (8.1)	9.6 (9.9)
BSA affected by psoriasis ≥3%, n (%)	228 (55.1)	393 (56.3)	140 (49.8)	217 (50.3)	88 (66.2)	176 (65.9)
PASI score,[b] mean (SD)	8.1 (6.0)	9.1 (8.0)	7.9 (5.6)	8.2 (6.8)	8.5 (6.6)	10.1 (9.1)
TJC (of 68 joints), mean (SD)	17.8 (13.1)	17.4 (12.5)	17.1 (12.5)	16.8 (11.8)	19.3 (14.2)	18.4 (13.5)
SJC (of 66 joints), mean (SD)	9.7 (7.6)	9.2 (6.7)	9.5 (7.3)	9.0 (6.2)	10.3 (8.2)	9.7 (7.5)
Enthesitis (LEI >0),[c] n (%)	106 (25.6)	249 (35.7)	70 (24.9)	143 (33.2)	36 (27.1)	106 (39.7)
LEI score,[c,d] mean (SD)	2.9 (1.5)	2.6 (1.5)	2.9 (1.5)	2.5 (1.5)	2.9 (1.6)	2.6 (1.5)
Dactylitis (LDI >0),[e] n (%)	47 (11.4)	90 (12.9)	33 (11.7)	56 (13.0)	14 (10.5)	34 (12.7)
Dactylitic sites,[e,f] mean (SD)	1.6 (1.4)	1.6 (1.3)	1.5 (0.6)	1.4 (0.8)	1.9 (2.4)	2.0 (1.8)
LDI score,[e,f] mean (SD)	53.0 (76.5)	56.5 (82.7)	47.3 (41.1)	46.7 (54.3)	66.4 (127.6)	72.7 (114.4)
hs-CRP ≥6 mg/L, n (%)	180 (43.5)	276 (39.5)	121 (43.1)	158 (36.7)	59 (44.4)	118 (44.2)
Pain VAS,[g,h] mean (SD)	58.4 (23.8)	55.4 (24.3)	56.8 (23.2)	53.6 (24.3)	61.7 (24.6)	58.3 (24.2)

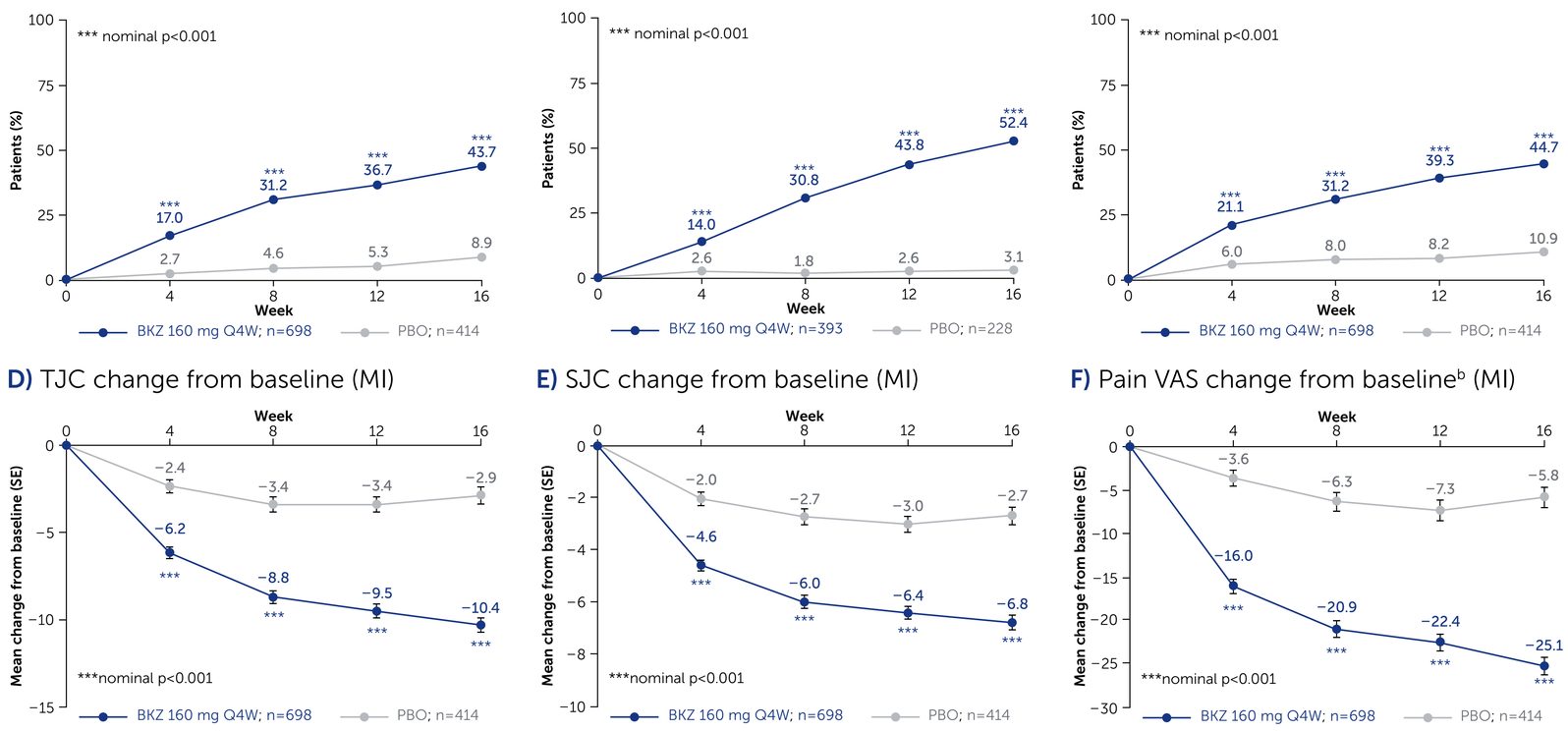
Randomised set. **[a]** Data missing for 2 PBO and 8 BKZ patients in BE OPTIMAL, and 1 PBO and 1 BKZ patient in BE COMPLETE; **[b]** In patients with psoriasis affecting ≥3% BSA at baseline; **[c]** Data missing for 6 BKZ patients in BE OPTIMAL, and 1 PBO patient in BE COMPLETE; **[d]** In patients with enthesitis at baseline (LEI >0); **[e]** Data missing for 1 PBO and 7 BKZ patients in BE OPTIMAL, and 1 PBO patient in BE COMPLETE; **[f]** In patients with dactylitis at baseline (LDI >0); **[g]** Pain VAS assessed using Patient's Assessment of Arthritis Pain; scores range from 0 (no pain) to 100 (most severe pain); **[h]** Data missing for 1 BKZ patient in BE OPTIMAL.

Figure 2 ACR50 Kaplan-Meier plots (OC)



Randomised set. Nominal p values reported; analyses were not adjusted for multiplicity. ACR50 at Week 16 was the primary endpoint in BE OPTIMAL and BE COMPLETE.

Figure 3 Efficacy responses to Week 16 in the pooled analysis set (MI, NRI)



Randomised set. Nominal p values reported; analyses were not adjusted for multiplicity. ACR50 at Week 16 was the primary endpoint in BE OPTIMAL and BE COMPLETE. **[a]** In patients with psoriasis affecting ≥3% BSA at baseline; **[b]** Pain VAS assessed using Patient's Assessment of Arthritis Pain; scores range from 0 (no pain) to 100 (most severe pain).

ACR20/50/70: ≥20%/50%/70% improvement from baseline in American College of Rheumatology response criteria; **bDMARD:** biologic disease-modifying antirheumatic drug; **BKZ:** bimekizumab; **BMI:** body mass index; **BSA:** body surface area; **CI:** confidence interval; **HR:** hazard ratio; **hs-CRP:** high-sensitivity C-reactive protein; **IL:** interleukin; **LDI:** Leeds Dactylitis Index; **LEI:** Leeds Enthesitis Index; **MDA:** minimal disease activity; **MI:** multiple imputation; **NRI:** non-responder imputation; **OC:** observed case; **PASI75/90/100:** ≥75%/90%/100% improvement from baseline in Psoriasis Area and Severity Index; **PBO:** placebo; **PsA:** psoriatic arthritis; **Q2W:** every 2 weeks; **Q4W:** every 4 weeks; **SD:** standard deviation; **SE:** standard error; **SJC:** swollen joint count; **TJC:** tender joint count; **TNFi-IR:** prior inadequate response or intolerance to tumour necrosis factor inhibitors; **VAS:** visual analogue scale.

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References: [1]McInnes IB et al. Lancet 2023;401:25–37; [2]Merola JF et al. Lancet 2023; 401:38–48; [3]Schoels MM et al. Rheumatology 2018;57:969–76; [4]Henkemans SVJS et al. RMD Open 2022;8:e002706. **Author Contributions:** Substantial contributions to study conception/design, or acquisition/analysis/interpretation of data: **FB**, **LCC**, **PN**, **ABG**, **BI**, **RB**, **JC**, **JFM**; Drafting of the publication, or reviewing it critically for important intellectual content: **FB**, **LCC**, **PN**, **ABG**, **BI**, **RB**, **JC**, **JFM**; Final approval of the publication: **FB**, **LCC**, **PN**, **ABG**, **BI**, **RB**, **JC**, **JFM**. **Author Disclosures: FB:** Consultant and/or speaker and/or investigator for AbbVie, Affibody, Amgen, Boehringer Ingelheim, Celgene, Chugai, Eli Lilly, Genzyme, GSK, Janssen, MSD, MoonLake Immunotherapeutics, Novartis, Pfizer, Roche, Sandoz, Sanofi and UCB. **LCC:** Grants/research support from AbbVie, Amgen, Celgene, Eli Lilly, Gilead, Janssen, Novartis, Pfizer and UCB; consultant for AbbVie, Amgen, BMS, Boehringer Ingelheim, Celgene, Domain, Eli Lilly, Galapagos, Gilead, Janssen, Moonlake Immunotherapeutics, Novartis, Pfizer and UCB; speaking fees from AbbVie, Amgen, Biogen, Celgene, Eli Lilly, Galapagos, Gilead, GSK, Janssen, medac, Novartis, Pfizer and UCB. **PN:** Grants for research and clinical trials and honoraria for advice and lectures on behalf of AbbVie, BMS, Boehringer Ingelheim, Eli Lilly, Gilead/Galapagos, GSK, Janssen, Novartis, Pfizer, Samsung, Sanofi and UCB. **ABG:** Receives research/educational grants from BMS, Highlights Therapeutics, Janssen and UCB (all paid to Mount Sinai School of Medicine); received honoraria as an advisory board member and consultant for Amgen, AnaptypsBio, Avotres Therapeutics, BMS, Boehringer Ingelheim, DICE Therapeutics, Eli Lilly, Highlights Therapeutics, Janssen, Novartis, Sanofi, Teva, UCB and Xbiotech (stock options for RA). **BI:** Shareholder of AbbVie, GSK and UCB; employee of UCB. **RB**, **JC:** Employee and shareholder of UCB. **JFM:** Consultant and/or investigator for AbbVie, Amgen, AstraZeneca, Biogen, BMS, Boehringer Ingelheim, Dermavant, Eli Lilly, Incyte, Janssen, LEO Pharma, Moonlake Immunotherapeutics, Novartis, Pfizer, Sanofi-Regeneron, Sun Pharma and UCB. **Acknowledgements:** This study was funded by UCB. 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, Bethan Taylor, BA, Costello Medical, London, UK, for editorial assistance, and the Costello Medical Creative team for design support. All costs associated with development of this presentation were funded by UCB.

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