Background: Guselkumab (GUS), a fully human IL-23p19 subunit inhibitor, was shown to reduce mean changes in radiographic progression vs placebo (PBO) by week (W)24 [1] and to be associated with lower rates of radiographic progression through W100 among GUS-treated patients (pts) with PsA, irrespective of dosing regimen (every [Q] 4W or Q8W) [2]. Furthermore, earlier clinical response predicted improved long-term radiographic outcome in GUS-treated pts with active PsA [3]. The recently developed 3 Visual Analogue Scale (VAS) and 4 VAS scores are the first short multidimensional composite measures specifically for use in PsA routine clinical care [4].

Objectives: Determine whether early improvement in 3VAS/4VAS predicts radiographic change through W100.

Methods: DISCOVER-2 included biologic-naïve pts with active PsA (≥5 swollen and ≥5 tender joint counts [SJC/TJC]; CRP ≥0.6 mg/dL) randomized (1:1:1) to GUS 100 mg Q4W, GUS 100 mg at W0, W4, then Q8W or PBO with crossover to GUS 100 mg Q4W at W24. In the current analysis, only pts randomized to GUS were included (N=493), pooling Q4W and Q8W. Response at W8 was defined as achievement of low disease activity (LDA) in 3VAS (≤3.4), 4VAS (≤3.5), RAPID3 (≤6), DAPSA (≤14), and PASDAS (≤3.2). Association of W8 response with change from baseline (BL) to W100 in total PsA-modified van der Heijde-Sharp (vdH-S) score was assessed with the independent samples t-test and generalized linear models adjusting for known BL determinants of radiographic progression (vdH-S score, age, gender, and CRP). Pairwise correlations and agreement in LDA classification between the endpoints assessed were assessed with Pearson’s correlation coefficient and the kappa statistic, respectively.

Results: Among GUS-treated pts not meeting the respective endpoints at BL (32.9%, 31.6%, 12.4%, 17.8%, and 10.8% achieved LDA in 3VAS, 4VAS, RAPID3, DAPSA, and PASDAS, respectively, at W8. LDA achievement in 3VAS (0.86 vs. 2.15, p=0.03), RAPID3 LDA (0.74 vs. 1.80, p=0.049), DAPSA LDA (-0.05 vs 2.08, p<0.001), and PASDAS LDA (0.58 vs. 1.87, p=0.006) at W8 were associated with significantly less radiographic progression through W100 (Figure 1). For 4VAS, achievement of remission (≤2.1; 0.71 vs. 1.84, p=0.045), but not LDA (1.12 vs. 2.01, p=0.142), was also associated with improved radiographic outcome. In multivariate analyses, improved response to GUS treatment at W8 in all endpoints assessed was associated with numerically less radiographic progression through W100. 3VAS and 4VAS at W8 showed strong correlations with RAPID3 (r_{3VAS}=0.877; r_{4VAS}=0.797) and PASDAS (r_{3VAS}=0.765; r_{4VAS}=0.790) and moderate correlations with DAPSA (r_{3VAS}=0.466; r_{4VAS}=0.524), whereas fair to moderate agreement (kappa range: 0.325-0.545) in LDA classification was noted.

Conclusion: Approximately one-third of GUS-treated patients achieved early response (W8 LDA) in 3VAS/4VAS, which was associated with reduced rates of radiographic change, as was early response in the other outcomes assessed. These results suggest that, in addition to their usefulness in assessing disease activity in routine clinical care, 3VAS and 4VAS, the former being more sensitive, may predict long-term radiographic changes.

REFERENCES:

Figure 3. Mean Change in Total PsA-Modified vdh-S Score from BL to W100 by Achievement of LDA in Outcomes of Interest

Figure 4. Mean Change in Total PsA-Modified vdh-S Score from BL to W100 by Achievement of LDA in Outcomes of Interest

Acknowledgements: NIL.

Disclosure of Interests: Williams Tillett Speakers bureau: Abbvie, Amgen, Eli-Lilly, Janssen, MSD, Novartis, Pfizer, and UCB; Consultant of: Abbvie, Amgen, Eli-Lilly, Janssen, MSD, Novartis, Ono-Pharma, Pfizer, and UCB; Research support from: Abbvie, Amgen, Eli-Lilly, Janssen, UCB and Pfizer, Laura Coates Speakers bureau: Abbvie, Amgen, Biogen, Celgene, Eli Lilly, Galapagos, Gilead, Janssen, Medac, Novartis, Pfizer, and UCB. Consultant of: Abbvie, Amgen, Boehringer Ingelheim, Bristol Myers Squibb, Celgene, Eli Lilly, Gilead, Galapagos, Janssen, Medac, Novartis, Pfizer, and UCB. Consultant of: Abbvie, Amgen, Celgene, Eli Lilly, Janssen, Novartis, Pfizer, UCB, and GUCB. Funded by a National Institute for Health Research Clinician Scientist award. The research was supported by the National Institute for Health Research (NIHR) Oxford Bio-medical Research Centre (BRC). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health. We acknowledge the support of the National Institute for Health Research Clinical Research Network (NIHR CRN), Marius V. Speakers bureau: Has received research grants, consulting or speaker fees from Abbvie, Amgen, Eli-Lilly, Janssen, Novartis, Pfizer, UCB, and the Dutch Arthritis Foundation. Consultant of: Has received research grants, consulting or speaker fees from Abbvie, Amgen, Eli-Lilly, Janssen, Novartis, Pfizer, UCB, and the Dutch Arthritis Foundation., Consultant of: Abbvie, Janssen, Novartis, and Roche, Grant/research support from: Abbvie, Amgen, Pfizer, Roche and UCB, Joseph F. Merola Consultant of: Is a consultant and/or investigator for Amgen, Bristol Myers Squibb, Abbvie, Dermavant, Eli Lilly, Uqope, Novartis, Janssen, UCB, Sanofi, Regeneron, Sun Pharma, Biogen, Pfizer and Leo Pharma. Payments received are considered honorarium. Miriam Zimmermann Shareholder of: Johnson & Johnson; Employee of: Janssen Research & Development, LLC, May Shawi Shareholder of: Johnson & Johnson; Employee of: Immunology Global Medical Affairs, Janssen Pharmaceutical Companies, a wholly owned subsidiary of Johnson & Johnson, Mohamed Sharaf Employee of: Janssen MEA, Dubai United Arab Emirates, Peter Nash Speakers bureau: Received grants for research and clinical trials and honoraria for advice and lectures on behalf of: UCB, Abbvie, Pfizer, Lilly, Novartis, GS, MSD, Samsung, Janssen, Gilead/Galapagos, Boehringer-Ingelheim, Sun, Consultant of: Received grants for research and clinical trials and honoraria for advice and lectures on behalf of: UCB, Abbvie, Pfizer, Lilly, Novartis, GS, MSD, Samsung, Janssen, Gilead/Galapagos, Boehringer-Ingelheim, Sun, Grant/research support from: Received grants for research and clinical trials and honoraria for advice and lectures on behalf of: UCB, Abbvie, Pfizer, Lilly, Novartis, GS, MSD, Samsung, Janssen, Gilead/Galapagos, Boehringer-Ingelheim, Sun, Philip Hellwell Speakers bureau: Abbvie, Novartis, Janssen, Consultant of: Eli Lilly.

DOI: 10.1136/annrheumdis-2023-eular.1690

POS1536 ASSESSMENT OF PAIN OUTCOMES IN A PHASE 2 TRIAL OF DEUCRAVACITINIB IN PATIENTS WITH ACTIVE PSORIATIC ARTHRITIS

Keywords: Targeted synthetic drugs, Pain, Psoriatic arthritis


Swedish Medical Center/Providence St. Joseph Health and University of Washington School of Medicine, Rheumatology, Seattle, United States of America; 2Institute of Medical Science, University of Toronto, Rheumatology, Toronto, Canada; 3Hospital of the University of Pennsylvania, Rheumatology, Philadelphia, United States of America; 4Oregon Health & Science University, Arthritis and Rheumatic Disease, Portland, United States of America; 5Bristol Myers Squibb, Clinical Development, Princeton, United States of America; 6Bristol Myers Squibb, Clinical R&D, Princeton, United States of America; 7Bristol Myers Squibb, Immunology and HEOR, Princeton, United States of America; 8Bristol Myers Squibb, WW Medical Immunology, Princeton, United States of America; 9Stanford University, Immunology and Rheumatology, Palo Alto, United States of America

Background: Pain is commonly cited by patients with psoriatic arthritis (PsA) as affecting their daily activities and quality of life. Pain signaling involves a variety of cytokines, such as interleukin (IL)-17, interferon (IFN)-γ and IL-6. TYK2 mediates signaling of key cytokines, such as IL-23, which is upstream of IL-17, involved in PsA pathogenesis. Deucravacitinib (DEUC) is a first-in-class, oral, selective, allosteric inhibitor of TYK2, approved in multiple countries for the treatment of adults with plaque psoriasis [1,2]; DEUC was efficacious vs placebo (PBO) in a phase 2 trial in patients with active PsA, and cytokine levels were reduced with DEUC treatment vs PBO, including IL-17A and other cytokines reflecting
downstream anti-inflammatory effects of TYK2 inhibition, including IL-6 and tumor necrosis factor alpha [3,4].

**Objectives:** To characterize the effect of DEUC on pain across different instruments, and alignment across pain instruments, in patients in the phase 2 PsA trial.

**Methods:** Patients with PsA (N=203) were randomized 1:1:1 to PBO, DEUC 6mg once daily (QD), or DEUC 12mg QD. Three instruments were used to assess pain up to week 16: (1) Patient Global Assessment of Pain visual analog scale (Pain VAS), scored from 0-100; (2) Psoriatic Arthritis Impact of Disease (PsAID) Pain instrument, scored from 0-10; and (3) 36-item Short-Form Health Survey (SF-36) Bodily Pain question, which asks patients to rate their pain on scale of 1-6 ranging from ‘none’ to ‘very severe.’ Mean change from baseline (BL) in pain scale scores, the proportion of patients who reported meaningful improvements in pain, and Pearson’s correlation between pain scales (Pain VAS and PsAID Pain) and disease efficacy measures were evaluated.

**Results:** BL mean Pain VAS score was 64.1 and BL mean PsAID Pain score was 6.4, and scores were generally similar across treatment groups. Percentages of patients who reported improvements in Pain VAS (Figure 1) and PsAID Pain were consistently greater with DEUC treatment compared with PBO, with improvements in pain being similar between males and females across instruments. The pain assessments correlated with one another both at baseline (Table 1) and over time through week 16, with some divergent responses to pain questions also being observed. At baseline, both assessments of pain strongly correlated with Psoriatic Arthritis Disease Activity Score (PASDAS) and with Patient Global Assessment of Disease Activity (PGa) (Table 1).

**Conclusion:** A higher proportion of patients with PsA treated with DEUC reported clinically meaningful improvements in pain compared with PBO. Patient-reported pain was overall well-correlated across instruments; however, some divergence was also observed.

**REFERENCES:**

**Table 1. Pearson’s correlation between pain assessments at baseline and other baseline disease activity measures**

<table>
<thead>
<tr>
<th></th>
<th>Pain VAS</th>
<th>PsAID Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain VAS</td>
<td>0.751</td>
<td>0.751</td>
</tr>
<tr>
<td>PsAID Pain</td>
<td>0.751</td>
<td>0.751</td>
</tr>
<tr>
<td>PSADAS</td>
<td>0.518</td>
<td>0.518</td>
</tr>
<tr>
<td>PGa</td>
<td>0.653</td>
<td>0.653</td>
</tr>
<tr>
<td>DAPSA</td>
<td>0.495</td>
<td>0.495</td>
</tr>
<tr>
<td>DAS28</td>
<td>0.567</td>
<td>0.567</td>
</tr>
<tr>
<td>HAQ-DI</td>
<td>0.423</td>
<td>0.423</td>
</tr>
<tr>
<td>SJC</td>
<td>0.351</td>
<td>0.351</td>
</tr>
<tr>
<td>PGA</td>
<td>0.307</td>
<td>0.307</td>
</tr>
<tr>
<td>SJC</td>
<td>0.305</td>
<td>0.305</td>
</tr>
<tr>
<td>CRP</td>
<td>0.190</td>
<td>0.190</td>
</tr>
</tbody>
</table>

**The strength of the Pearson’s correlation coefficient is coded by color, with green being a strong correlation (0.5-1.0), yellow is medium (0.3-0.5), and blue is weak (0.1-0.3).**

**Acknowledgements:** This study was sponsored by Bristol Myers Squibb.

**Disclosure of Interests:** Philip J Mease Consultant of: Abbvie, Amgen, Boehringer Ingelheim, Bristol Myers Squibb, Eli Lilly, Galapagos, Gilead, GlaxoSmithKline, Janssen, Novartis, Pfizer, SUN Pharma, and UCB; Grant/research support from: Abbvie, Amgen, Bristol Myers Squibb, Eli Lilly, Galapagos, Gilead, GlaxoSmithKline, Janssen, Novartis, Pfizer, and UCB, Grant/research support from: Abbvie, Amgen, Boehringer Ingelheim, Bristol Myers Squibb, Celgene, Eli Lilly, Galapagos, GlaxoSmithKline, Janssen, Novartis, Pfizer, and UCB, Grant/research support from: Abbvie, Eli Lilly, GlaxoSmithKline, Novartis, Pfizer, and UCB, Subhashis Banerjee Shareholder of: Bristol Myers Squibb, Employee of: Bristol Myers Squibb, Jiyoon Choi Shareholder of: Bristol Myers Squibb, Employee of: Bristol Myers Squibb, Thomas Lehman Shareholder of: Bristol Myers Squibb, Employee of: Bristol Myers Squibb, Vibeke Strand Consultant of: Abbvie, Amgen, Arena, AstraZeneca, Bayer, Biosplice, Bioventus, Blackrock, BMS, Boehringer Ingelheim, Celtnion, Chemocentryx, EMD Serono, Equillium, Genentech/Roche, Gilead, GlaxoSmithKline, Horizon, Ichnos, Inmedix, Janssen, Kiniksa, Kyphra, Lilly, Merck, MedNovadex, Novartis, Pfizer, Regeneron, Rheos, Samsung, Sandzod, Sanofi, Scipher, Servier, Setpoint, Sphexir, Tonix, and UCB.

**DOI:** 10.1136/annrheumdis-2023-eular.1691

**POS1537**

**BIMEKIZUMAB EFFICACY AND SAFETY IN BIOLOGIC DMARD-NAÏVE PATIENTS WITH PsORIATIC ARTHRITIS WAS CONSISTENT WITH OR WITHOUT METHOTREXATE: 52-WEEK RESULTS FROM THE PHASE 3 ACTIVE-REFERENCE STUDY BE OPTIMAL**

**Keywords:** Clinical trials, Psoriatic arthritis


1University of Glasgow, College of Medical Veterinary and Life Sciences, Glasgow, United Kingdom; 2University of Washington, Swedish Medical Center and Providence St. Joseph Health, Seattle, United States of America; 3University of Occupational and Environmental Health, The First Department of Internal Medicine, Kitakyushu, Japan; 4Goethe University, Division of Rheumatology, University Hospital and Fraunhofer Institute for Translational Medicine & Pharmacology ITMP, Fraunhofer Cluster of Excellence Immune-Mediated Diseases CIMD, Frankfurt am Main, Germany; 5Sorbonne Université, N/I, Paris, France; 6AP-HP Pitié-Salpêtrière Hospital, N/I, Paris, France; 7Cleveland Clinic, Department of Rheumatic and Immunologic Diseases, Cleveland, United States of America; 8Copenhagen University Hospital, The Parker Institute, Bispebjerg and Frederiksberg, Denmark; 9The University of Manchester, Dermatology Centre, Salford Royal NHS Foundation Trust, Manchester NIHR Biomedical Research Centre, Manchester, United Kingdom; 10UCB Pharma, N/I, Slough, United Kingdom; 11UCB Pharma, N/I, Morrisville, United Kingdom; 12The Icahn School of Medicine at Mount Sinai, Department of Dermatology, New York, United States of America

**Background:** Given the chronic nature of psoriatic arthritis (PsA), understanding long-term efficacy and safety of biologic monotherapy or therapy in combination with ongoing methotrexate (MTX) is of interest. Studies have shown reduced efficacy of tumor necrosis factor inhibitors without MTX than with MTX [1]. Bimekizumab (BKZ), a monovalent IgG1 antibody that selectively inhibits IL-17F in addition to IL-17A, has shown efficacy and tolerability to 52 weeks (wks) in patients (pts) with PsA [2].

**Objectives:** To report BKZ efficacy and safety to Wk 52 from the phase 3 study BE OPTIMAL in DMARD-naïve pts with PsA, with or without ongoing concomitant MTX.

**Methods:** BE OPTIMAL (NCT03895203) comprised a 16-wk double-blind placebo (PBO)-controlled period and a 36-wk active treatment-blind period. Pts were randomised 3:2:1 to: A) MTX-naïve BKZ 160 mg Q2W, B) BKZ 160 mg Q2W + MTX 10 mg eQ2W, C) BKZ 160 mg Q2W + MTX 10 mg eQ2W + placebo, and D) BKZ 160 mg Q2W + MTX 10 mg eQ2W + MTX 10 mg eQ2W. From Wk 16, PBO pts received BKZ 160 mg Q4W. Pts could not adjust their background medication during the 16-wk PBO-controlled period. Efficacy and safety were evaluated by concomitant MTX use at baseline (BL). Missing data were imputed using non-responder (discrete) or multiple (continuous) imputation.

**Results:** 781/832 (93.9%) pts completed Wk 52 (+ MTX: 454/497 [91.3%], – MTX: 307/355 [86.5%]). BL characteristics were generally similar +/- MTX: mean age 48.1 vs 49.4 years, BMI 29.1 vs 29.4 kg/m², 5.7 vs 6.2 years since diagnosis, 47.3% vs 46.2% male, 49.5% vs 50.4% with psoriasis affecting ≥3% body surface area. To Wk 52, the proportion of BKZ-randomised pts who achieved ACR50, complete skin clearance (Psoriasis Area and Severity Index [PASI]100) and minimal disease activity (MDA) were similar regardless of BL MTX use. Fewer pts receiving ADA – MTX achieved ACR50 or MDA at Wk 52 compared to ADA + MTX (Figure 1). Other Wk 52 efficacy