Stringent Thresholds of Disease Control Are Associated With Reduced Burden on Paid and Household Work Productivity in Patients With Psoriatic Arthritis During Long-Term Treatment With Certolizumab Pegol

W.R. Tillett,[1] L.C. Coates,[2] T. Nurminen,[3] S. Kiri,[4] P.J. Mease[5]

Presented at Virtual ISPOR Europe 2020 | 16–19 November

PB16

Objectives

To evaluate the association between improvements in clinical outcomes and burden on work and household productivity in patients with psoriatic arthritis (PsA) over four years of treatment with certolizumab pegol (CZP).

Background

- CZP is an Fc-free, PEGylated, tumour necrosis factor inhibitor (TNFi) that has shown long-term efficacy and safety in patients with PsA.[1]
- PsA is a chronic inflammatory disease associated with a substantial negative burden on paid work and household productivity.[2]

Methods

Study Design and Patients

- RAPID-PsA (NCT01087788) was a 216-week phase 3 study including adult patients with active PsA who had failed treatment with ≥1 conventional synthetic disease-modifying antirheumatic drugs (csDMARD).[1]
- These analyses are based on data pooled across CZP treatment arms, irrespective of CZP dosing schedule (200 mg every 2 weeks [Q2W] or 400 mg every 4 weeks [Q4W]).

Study Assessments

- The burden of PsA on paid work and household productivity was assessed every 4 weeks using the arthritis-specific Work Productivity Survey (WPS).[3] Questions on paid work productivity were only applicable for patients employed at the end of each month.
- The level of clinical response was defined according to American College of Rheumatology (ACR) 20/50/70 criteria including: non-response (<ACR20), ACR20 to <50, ACR50 to <70 and ACR70.

Statistical Analyses

- To reduce selection bias resulting from dropout, an inverse probability weight (IPW) model was used with the following potential predictors of dropout: age, gender, prior TNFi use, geographic region and time-varying disease activity (using Disease Activity in Psoriatic Arthritis [DAPSA]) and employment status.
- Cumulative days missed since study baseline were estimated using a weighted generalised estimating equations model.

Results

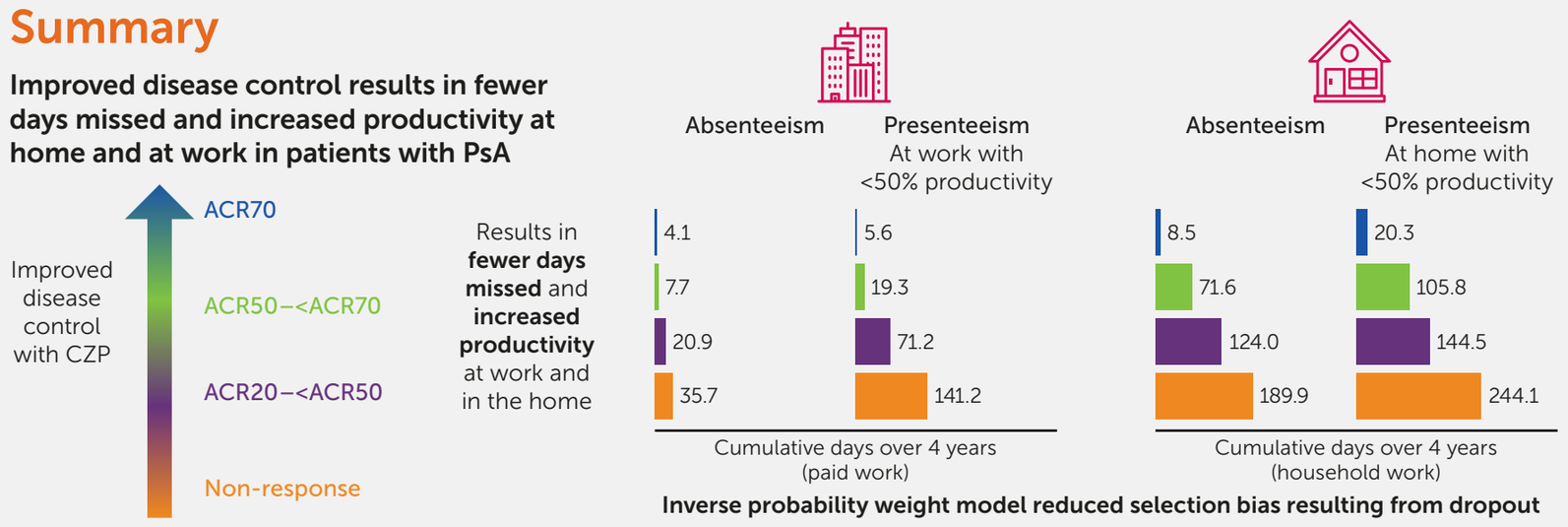
- 183/273 (67.0%) patients randomised to CZP treatment completed Week 216. Baseline characteristics are presented for all patients randomised to CZP, and for patients followed up to Week 216 with and without weighting by the estimated IPWs **(Table 1)**.
- At baseline, 60.8% of patients were employed outside the home, compared with 61.9% (IPW estimates) at Week 216.
- The proportion of patients achieving stringent disease control increased over time **(Figure 1)**.
- Through Week 216, stringent disease control was associated with fewer missed days of paid work (fewer days of absenteeism) **(Figure 2A)**. Patients achieving more stringent ACR thresholds also reported fewer days of reduced workplace productivity (fewer days of presenteeism) **(Figure 2B)**.
- Through Week 216, stringent disease control was associated with fewer missed days of household work (fewer days of absenteeism) **(Figure 3A)**. Patients achieving more stringent ACR thresholds also reported fewer days of reduced household work productivity (fewer days of presenteeism) **(Figure 3B)**.

Conclusion

Over 4 years of CZP treatment, the achievement of greater disease control in patients with PsA was associated with reduced burden on paid and household work productivity, demonstrating the potential for stringent clinical responses with CZP treatment to benefit non-clinical outcomes that are important to patients.

Summary

Improved disease control results in fewer days missed and increased productivity at home and at work in patients with PsA



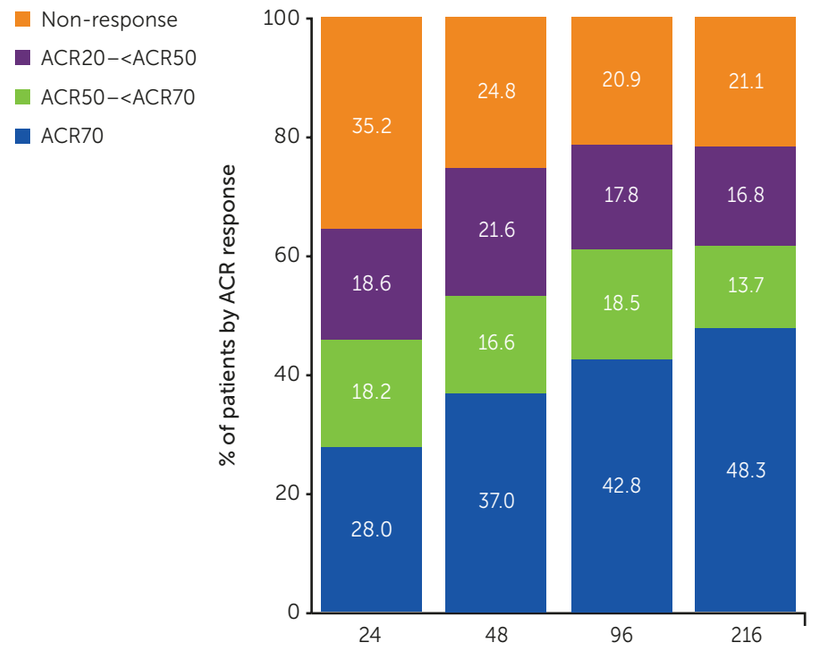
Inverse probability weight model reduced selection bias resulting from dropout

Table 1 Baseline demographics and disease characteristics (patients randomised to CZP)

	All patients (n=273)	Patients with data through Week 216 (n=187)[b]	Patients with data through Week 216, weighted (n=190)[b]
Demographic characteristics[a]			
Age at BL, years	47.7 (11.6)	47.8 (10.9)	47.6 (11.8)
Female, %	53.8	50.8	53.6
Geographic region, %			
Central/Eastern Europe	48.7	52.4	49.1
Western Europe	12.1	11.8	11.1
Latin America	15.0	12.8	15.9
North America	24.2	23.0	23.9
Arthritis characteristics[a]			
CRP mg/L, median (min–max)	8.0 (0.1–238.0)	-	-
ESR mm/h, median (min–max)	34.0 (4–125)	-	-
TJC	20.5 (15.0)	-	-
SJC	10.8 (8.2)	-	-
DAS28 CRP	5.0 (1.0)	-	-
HAQ-DI	1.3 (0.6)	-	-
Psoriasis characteristics			
BSA ≥3%, n (%)	166 (60.8)	-	-

[a]Mean (SD) except where otherwise indicated; [b]Includes 4 patients who did not formally complete but had data collected through Week 216. Dashes indicate not applicable.

Figure 1 ACR response level at selected visits, weighted

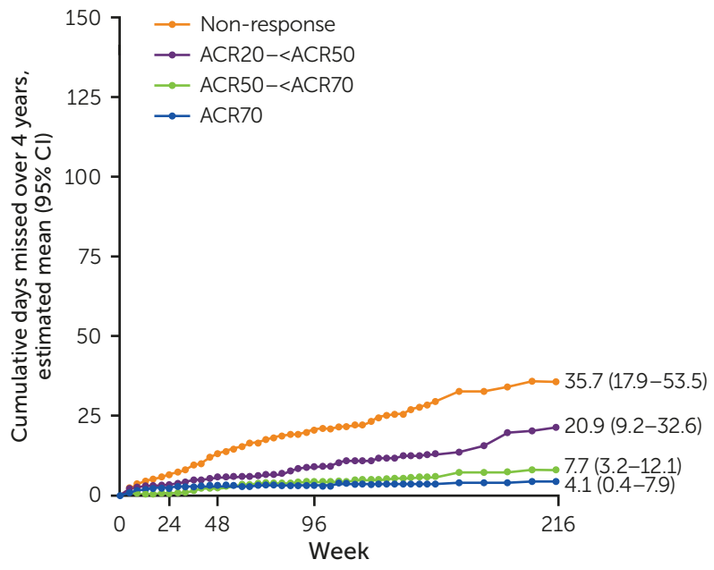


Number of observed data (n)	249	235	217	185
Weighted n	254.0	239.1	217.9	188.2

Data were weighted by the estimated IPWs. CZP-randomised population.

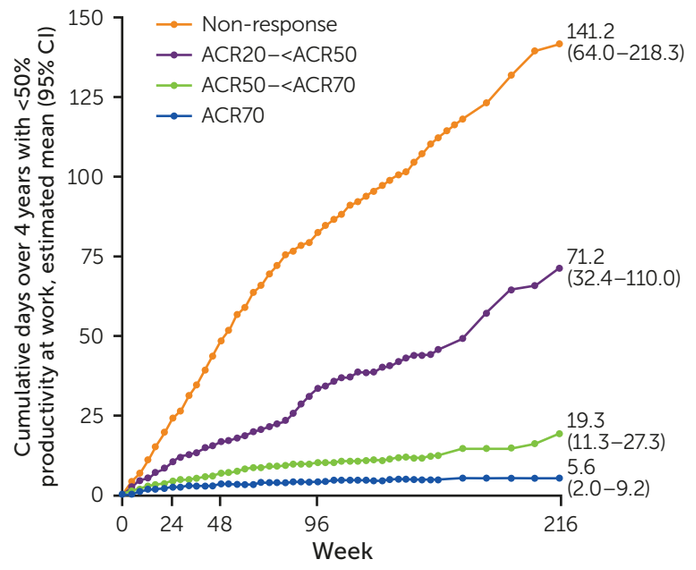
Figure 2 Cumulative missed paid work days and paid work productivity by ACR response for patients employed outside the home

A) Paid work absenteeism



Number employed, observed (n)	157	155	138	123
Weighted n	156.8	152.7	133.1	116.5

B) Paid work presenteeism

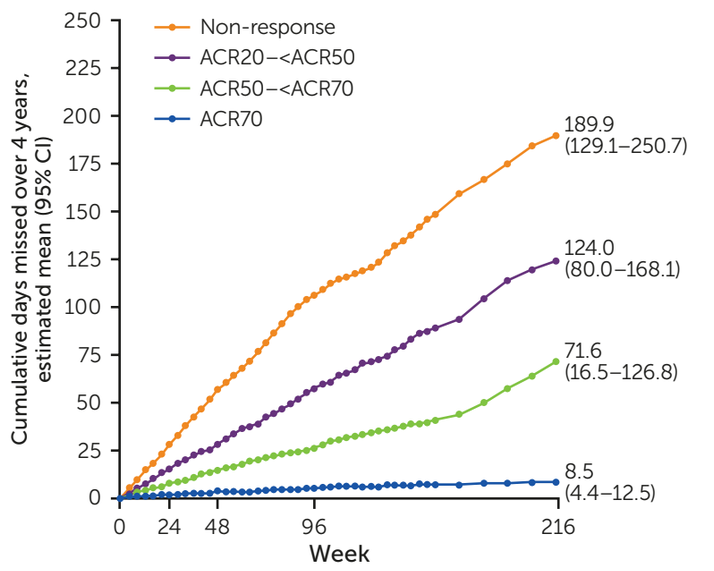


Number employed, observed (n)	157	155	138	123
Weighted n	156.8	152.7	133.1	116.5

After Week 156, the WPS was administered every 12 weeks. CZP-randomised population. Cumulative days over these 12-week intervals were estimated based on the month preceding each assessment.

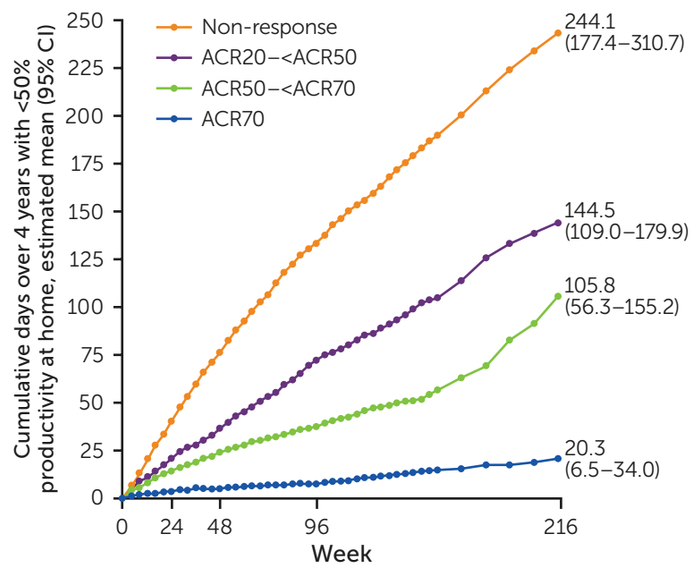
Figure 3 Cumulative missed household work days and household work productivity by ACR response

A) Household work absenteeism



Patients observed (n)	249	238	216	185
Weighted n	254.0	242.0	216.7	188.2

B) Household work presenteeism



Patients observed (n)	249	238	216	185
Weighted n	254.0	242.0	216.7	188.2

After Week 156, the WPS was administered every 12 weeks. CZP-randomised population. Cumulative days over these 12-week intervals were estimated based on the month preceding each assessment.

ACR: American College of Rheumatology; BL: baseline; BSA: body surface area; CI: confidence interval; CRP: C-reactive protein; csDMARD: conventional synthetic disease-modifying antirheumatic drug; CZP: certolizumab pegol; DAPSA: Disease Activity in Psoriatic Arthritis; DAS: disease activity score; DMARD: disease-modifying antirheumatic drug; ESR: erythrocyte sedimentation rate; HAQ-DI: Health Assessment Questionnaire-Disability Index; IPW: inverse probability weight; PsA: psoriatic arthritis; Q2W: every 2 weeks; Q4W: every 4 weeks; SD: standard deviation; SJC: swollen joint count; TJC: tender joint count; TNFi: tumour necrosis factor inhibitor; WPS: Work Productivity Survey.

Institutions: [1]University of Bath, Bath, UK; [2]University of Oxford, Oxford, UK; [3]UCB Pharma, Monheim am Rhein, Germany; [4] UCB Pharma, Slough, UK; [5]Swedish Medical Center/Providence St. Joseph Hospital and University of Washington, Seattle, WA, USA.

References: [1]van der Heijde D *et al.* RMD Open 2018;4:e000582; [2]Tillett W *et al.* Rheumatol 2012;51:275–83; [3]Osterhaus J *et al.* Arth Res Ther 2014;16:R140. **Author Contributions:** Substantial contributions to study conception/design, or acquisition/analysis/interpretation of data: **WRT**, **LCC**, **TN**, **SK**, **PJM**; Drafting of the publication, or revising it critically for important intellectual content: **WRT**, **LCC**, **TN**, **SK**, **PJM**; Final approval of the publication: **WRT**, **LCC**, **TN**, **SK**, **PJM**. **Author Disclosures:** **WRT**: Research grants, consulting fees, speaking fees and/or honoraria from AbbVie, Amgen, Celgene, Eli Lilly, Janssen, MSD, Novartis, Pfizer, UCB Pharma; **LCC**: Research grants from AbbVie, Amgen, Celgene, Gilead, Janssen, Novartis, Pfizer; Consultancy fees from AbbVie, Amgen, Biogen Inc., Boehringer Ingelheim, Celgene, Eli Lilly, Gilead, Janssen, Medac, Novartis, Pfizer, UCB Pharma; **TN**: Employee of UCB Pharma; **SK**: Employee of UCB Pharma; **PJM**: Speakers' bureau from AbbVie, Amgen, Eli Lilly, Janssen, Novartis, Pfizer, UCB Pharma; Consultancy fees from AbbVie, Amgen, Boehringer Ingelheim, BMS, Celgene, Eli Lilly, Galapagos, Gilead, GSK, Janssen, Novartis, Pfizer, Sun Pharma, UCB Pharma; Research grants from AbbVie, Amgen, BMS, Eli Lilly, Gilead, Janssen, Novartis, Pfizer, Sun Pharma, UCB Pharma. **Acknowledgements:** This study was funded by UCB Pharma. The authors thank the patients and their caregivers in addition to the investigators and their teams who contributed to this study. The authors acknowledge Heather Edens, PhD, UCB Pharma, Smyrna, GA, USA, for publication coordination, Costello Medical for medical writing and editorial assistance, and the Costello Medical Design Team for design support. All costs associated with development of this poster were funded by UCB Pharma.