Real-World Usage of Biologic Disease-Modifying Anti-Rheumatic Drugs in Patients with Psoriatic Arthritis in Germany

HSD60

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Objective

The objective was to reveal characteristics of patients with psoriatic arthritis (PsA), including concomitant psoriasis (PSO) and prior biologic disease-modifying anti-rheumatic drugs (bDMARD) exposure, in relation to bDMARD initiation and dosing in real-world clinical practice in Germany (year 2017–2021).

Background

- For PsA, more treatment options have become available, including bDMARDs, i.e., tumour necrosis factor (TNF) and interleukin (IL) inhibitors, and targeted synthetic DMARDs such as Janus kinase (JAK) inhibitors.[1]
- Examining treatment patterns in real-world settings is important for patients and healthcare providers.

Methods

- This study utilised German Allgemeine Ortskrankenkasse (AOK) Plus claims data. Patients with PsA (aged ≥18 years on cohort entry date) with newly initiated bDMARD treatment between 2018–2021 were identified.
- Patient characteristics were screened from 2017 onwards (covariate assessment window). bDMARD history was assessed during a pre-defined look-back window. Patients were followed up for a maximum of 12 months. See Figure 1 for study period definitions for an example patient.
- Given the variability in prescribing recommendations for secukinumab, for patients initiating secukinumab, dosing was reported for the total cohort and stratified by bDMARD history.
- Starting (week 0–5 from cohort entry date) and maintenance doses (after week 5) of secukinumab were estimated based on the interval between the first two dispensations within the corresponding phase and the total amount of drug dispensed.
- Patients were assigned to one of four dose pattern categories: 1) 150 mg as both starting and maintenance dose, 2) 150 mg as starting and 300 mg as maintenance dose, 3) 300 mg as starting and 150 mg as maintenance dose, 4) 300 mg as both starting and maintenance dose.

Results

Patient characteristics (Table 1)

- This study identified 842 patients with PsA (mean age 51.5 years; males: 49.5%) initiating a new bDMARD, of which 246 (29.2%) were bDMARD-experienced.
- The most frequently indexed bDMARDs were adalimumab (28.9%) and secukinumab (19.7%).
- The proportion of bDMARD-experienced patients varied across bDMARDs and was the highest amongst guselkumab initiators (51.2%).
- The proportion of additional diagnoses varied across bDMARD initiators.
- Dermatologists were the most frequently observed prescribers (40.7%).
- PSO (94.2%) and hypertension (54.3%) were among the most frequently observed additional diagnoses.

Secukinumab dosing (Figure 2)

- Amongst 166 secukinumab initiators, starting and maintenance dose data were available for 115 patients.
- 16.5% of patients received 150 mg as starting and as maintenance dose.
- 41.7% of patients received 300 mg as starting and as maintenance dose.
- 36.5% of patients received a starting dose of 150 mg and a maintenance dose of 300 mg, while only 5.2% received a starting dose of 300 mg and a maintenance dose of 150 mg.
- A similar pattern was observed regardless of bDMARD history.

Limitations

- Diagnoses and treatments were identified using ICD-10 and ATC codes, which are subject to potential miscoding and risk of information bias.
- Data is limited to dispensation information. The patients' drug consumption behavior and dosing for patients lost to follow up remained unknown.
- Subgroup analyses were limited by sample size, and results based on groups with n<10 were not presented.
- The findings may not be generalisable to countries outside Germany or the EU.
- Data does not reflect all potential medical interventions, such as participation in clinical trials or other interventions which do not qualify for medical claims.

Conclusions

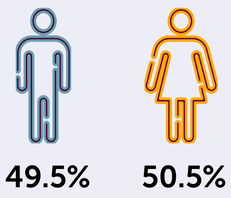
This study characterised patients with PsA treated with different bDMARDs and suggests that biologic experience and additional diagnoses seem to be associated with the type of bDMARD treatment.

Secukinumab dosing did not seem to depend on biologic experience.

Future studies are warranted to identify patient outcomes associated with treatment patterns, including persistence, which can assist in tailoring therapies to patient needs.

Summary

Patient characteristics

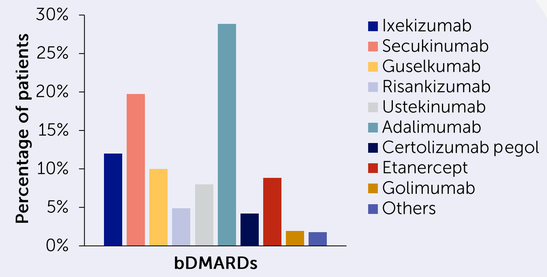


49.5% **50.5%**

842 bDMARD initiators with PsA were identified

Bio-experienced: 29.2% **Bio-naïve: 70.8%**

Proportion of bDMARD-experienced patients varied across bDMARDs prescribed



There was variation in the type of bDMARDs prescribed

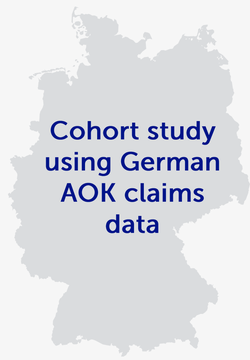
Dosing patterns

While secukinumab starting and maintenance dose patterns varied across patients, a similar pattern was observed regardless of bDMARD history.

Conclusion

Biologic experience and additional diagnoses seem to be associated with the type of bDMARD treatment.

Secukinumab dosing did not seem to depend on biologic experience.



Cohort study using German AOK claims data

Figure 1. Study periods (example patient)

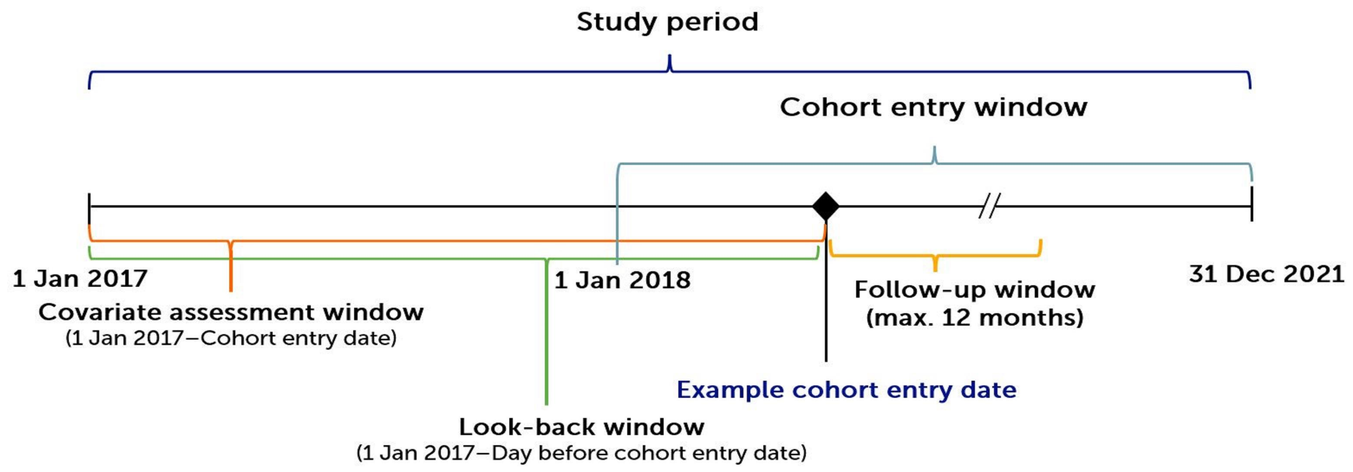
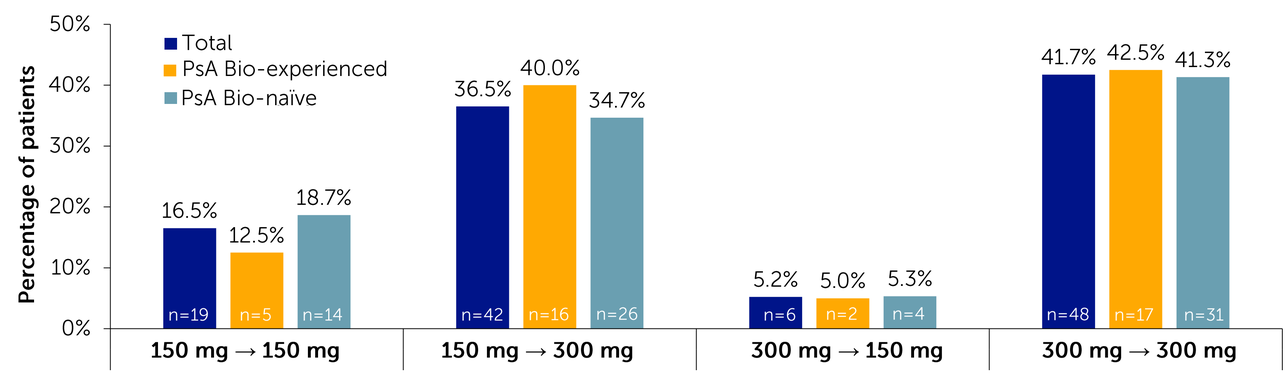


Table 1. Characteristics of patients with PsA

Patient characteristics at cohort entry date	Total	Bio-naïve	Bio-experienced	TNF inhibitors				IL-12/23 inhibitors			IL-17A inhibitors	
				Adalimumab	Certolizumab pegol	Etanercept	Golimumab	Guselkumab	Risankizumab	Ustekinumab	Ixekizumab	Secukinumab
Sample size, n (%)	842	596 (70.8)	246 (29.2)	243 (28.9)	35 (4.2)	74 (8.8)	16 (1.9)	84 (10.0)	41 (4.9)	67 (8.0)	101 (12.0)	166 (19.7)
Sex, males, %	49.5	48.0	53.3	51.4	40.0	44.6	37.5	52.4	61.0	47.8	46.5	50.0
Age, years, mean (SD)	51.5 (12.6)	51.2 (12.5)	52.2 (12.7)	49.6 (12.3)	38.9 (13.7)	53.3 (10.5)	51.3 (12.1)	53.3 (12.2)	56.0 (12.8)	53.5 (11.1)	53.2 (13.2)	52.2 (12.3)
bDMARD experience, %	29.2	0.0	100.0	14.4	22.9	13.5	43.8	51.2	41.5	25.4	47.5	33.7
Prescriber specialty %												
Rheumatologist	37.5	39.3	33.3	45.7	45.7	59.5	nr	nr	nr	44.8	19.8	42.8
Dermatologist	40.7	35.2	54.1	27.6	nr	13.5	nr	90.5	92.7	31.3	62.4	34.9
General practitioner	11.3	9.1	16.7	9.9	nr	21.6	nr	nr	nr	nr	nr	14.5
Other	19.4	15.4	28.9	18.9	31.4	28.4	nr	14.3	nr	19.4	15.8	22.3
Comorbidities and/or additional diagnoses, %												
Allergy	22.2	23.7	18.7	21.0	nr	27.0	nr	21.4	24.4	26.9	20.8	19.3
Asthma	14.4	14.8	13.4	16.1	nr	16.2	nr	nr	nr	nr	14.9	13.9
IBD	2.6	nr	5.3	nr	nr	nr	nr	nr	nr	nr	nr	nr
Fibromyalgia	1.4	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
PSO	94.2	93.5	95.9	91.0	94.3	90.5	87.5	100.0	100.0	97.0	98.0	94.6
Hidradenitis suppurativa	1.3	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Enthesitis	1.3	1.7	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Uveitis	1.7	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Dactylitis	3.7	4.4	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Anxiety	26.1	27.2	23.6	21.4	34.3	21.6	nr	29.8	34.2	28.4	20.8	30.1
Cardiovascular disease	23.0	22.7	24.0	20.6	nr	16.2	nr	27.4	31.7	32.8	21.8	27.1
Depression	28.2	27.0	30.9	25.9	37.1	20.3	nr	28.6	39.0	31.3	29.7	30.1
Diabetes	19.6	18.3	22.8	16.9	nr	17.6	nr	21.4	nr	23.9	26.7	18.7
Hyperlipidemia	28.6	27.7	30.9	22.6	nr	24.3	nr	31.0	43.9	25.4	26.7	39.8
Hypertension	54.3	53.9	55.3	46.9	40.0	48.7	nr	63.1	65.9	59.7	51.5	60.8
Obesity	32.0	30.9	34.6	28.0	nr	20.3	nr	41.7	46.3	34.3	38.6	32.5
Liver disease	20.3	20.3	20.3	16.1	nr	27.0	nr	31.0	24.4	28.4	14.9	18.1

Data for abatacept and infliximab is not shown due to small sample size (n<10). Data of patients with n<10 has not been reported and is presented as 'nr'.

Figure 2. Dosing pattern of secukinumab in patients with PsA



Secukinumab dose changes from starting to maintenance dose are indicated.

AOK: Allgemeine Ortskrankenkasse; **ATC:** Anatomical Therapeutic Chemical; **bDMARD:** biologic disease-modifying anti-rheumatic drug; **EU:** European Union; **IBD:** inflammatory bowel disease; **ICD:** International Classification of Diseases; **IL:** interleukin; **JAK:** Janus kinase; **max.:** maximum; **PsA:** psoriatic arthritis; **PSO:** psoriasis; **SD:** standard deviation; **TNF:** tumour necrosis factor.

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References: [1]Ogdie A, et al. Rheumatology (Oxford). 2020;59(Suppl1):i37-i46. **Author Disclosures:** CA: Employee of Quantify Research, a contract research organization that provides consultancy services to the pharmaceutical industry, JB: Employee and stockholder of Quantify Research, ARD: Employee of Quantify Research, JS: Employee of UCB Pharma, SA: Employee of UCB Pharma, SW: Stockholder of UCB Pharma and GSK and was employee of UCB Pharma at the time of study conduct. **Funding/Acknowledgement:** This study was funded by UCB Pharma. Medical writing and editorial services were provided by Quantify Research and review management was provided by Costello Medical, both of which were funded by UCB Pharma. The authors acknowledge Heather Edens, PhD, UCB Pharma and Smyrna, Georgia, USA, for publication coordination. **Author Contributions:** All authors contributed to study conception/design, acquisition/analysis/interpretation of data, drafting of the publication, and/or reviewing it critically. All authors provided final approval of the publication.

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