ORIGINAL REPORT

Real-world Cost per Responder Among Different Classes of Biologics for the Treatment of Psoriasis

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Although biologics have revolutionized psoriasis treatment, they pose a significant burden on the healthcare budget. With the wide range of biologics available and the increasing number of biosimilars, insights into the real-world cost per responder (CPR) are required. Therefore, this study aims to evaluate the real-world CPR of adalimumab, ustekinumab, IL17- and IL23-inhibitors, incorporating both relative (Psoriasis Area and Severity Index; PASI75/90/100) and absolute (PASI ≤ 3/ ≤ 1) responder definitions and real-world dose adjustments. Tildrakizumab and bimekizumab were excluded due to limited data. Using Dutch list prices and discounts on adalimumab's and ustekinumab's originator prices because of biosimilar availability, adalimumab showed the lowest 1-year CPR across all responder definitions. Among biologics without biosimilar availability, the lowest CPRs were seen for brodalumab and guselkumab. Overall, the cost-per-PASI ≤ 3-responder was, across all biologics, more homogeneous than the CPR based on relative PASIs. Similar patterns were seen when using Swedish prices, which are, in contrast to Dutch prices, transparent. The relevance of using real-world data, specifically with the use of absolute PASIs instead of relative PASIs, is shown in this study. Additionally, as price fluctuations have the biggest impact on cost-effectiveness, price transparency is essential to effectively guide physicians in selecting a cost-effective treatment strategy.

Key words: biologics; cost-effectiveness; cost per responder; observational studies; psoriasis; real-world evidence.

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SIGNIFICANCE

While biologics have revolutionized the treatment of psoriasis, their costs pose a significant burden on healthcare budgets. Currently, most studies in the field of cost-effectiveness rely on trial efficacy data, whereas studies utilizing real-world effectiveness data remain limited. In addition, while dose adjustments are common in daily practice care, little is known about first-year dosing regimens and their impact on the cost per responder. Data from the prospective, multicentre, real-world BioCAPTURE registry provide the opportunity to assess the cost per responder with effectiveness from daily practice and to evaluate the impact of first-year dosing patterns on annual costs.

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Biologics have revolutionized the treatment of psoriasis due to their high efficacy. Yet, their high costs pose significant pressure on national healthcare budgets. Particularly in the context of managing a chronic disease such as psoriasis, insights into the cost per responder (CPR), a metric used in health economics to calculate the costs associated with achieving a predefined therapeutic response, are crucial to make cost-effective clinical decisions.

Several studies have assessed the cost-effectiveness of biologics for psoriasis using efficacy data from ran-

domized controlled trials (RCTs) (1, 2). However, cost-effectiveness studies based on real-world effectiveness data, particularly for newer-generation biologics, remain limited (3–5). Studies based on real-world data arguably better reflect routine clinical practice, increasing the external validity of study findings. RCTs often adhere to strict inclusion and exclusion criteria, whereas real-world patients present, for example, a broader range of comorbidities (6, 7). Moreover, therapy compliance is high in RCTs due to strict monitoring, whereas real-world adherence rates tend to be lower, potentially affecting the drug effectiveness (8). Additionally, unlike the strict dosing regimens of RCTs, dose adjustments occur frequently in real-world settings, including dose reductions, escalations, and drug holidays (9). On top of that, RCTs mainly focus on a relative reduction in Psoriasis Area and Severity Index (PASI) scores, a measure heavily influenced by the baseline value. In daily practice, patients often initiate a biologic with lower baseline PASIs, e.g., when switching treatment due to side effects or due to a partial response considered insufficient. Consequently, relative PASI scores (e.g., PASI75) seem to be less optimal in real-world settings, while – at the same time – absolute PASI scores, equal or less than a given bound (e.g., PASI≤1), can be excellent (10, 11). Therefore, this study aims to evaluate the real-world 1-year CPR of various biologics for the treatment of psoriasis, taking into account dose adjustments and both relative and absolute PASI responder definitions. The biologics examined include adalimumab, the most prescribed biologic among the TNFα-inhibitors, the IL12/23-inhibitor ustekinumab, and the more recently introduced IL17- and IL23-inhibitors secukinumab, ixekizumab, brodalumab, guselkumab, and risankizumab.

MATERIALS AND METHODS

Data were obtained from the Dutch prospective, multicentre Continuous Assessment of Psoriasis Treatment Use Registry with Biologics (BioCAPTURE, www.biocapture.nl), including 4 academic and 19 non-academic hospitals at the time of data extraction on 14 May 2024. All patients provided written informed consent before inclusion in BioCAPTURE. According to confirmation from the local Central Committee on Research Involving Human Subjects, ethical approval was not required for this non-interventional study.

The cost per responder model

A CPR model was provided by LEO Pharma, allowing for calculation of the CPR at various timepoints (e.g., week 12 and week 52). The CPR was obtained by calculating the cost per patient divided by the proportion of responders, which was defined by the achievement of specific PASI scores. Initially, the model was built for calculation of the CPR based on relative PASI scores. However, for the purpose of this study, the model was modified by the first author to also enable the calculation of the CPR based on absolute PASI score thresholds. Dose adjustments were taken into account in the model using dose adjustment factors (further specified in the section "Dose adjustments").

Key model inputs

Clinical data. Comprehensively, treatment episodes (TEs) with the TNFα-inhibitor adalimumab, the IL12/23-inhibitor ustekinumab, IL17-inhibitors, and IL23-inhibitors, a minimum treatment duration of 12 weeks, and an available baseline PASI were included. Additionally, a PASI at week 12 or week 52, or ineffectiveness as reason for discontinuation in the first year of treatment were essential in order to be included in one of the CPR analyses. Consequently, each CPR analysis included subgroups drawn from all TEs that met the inclusion criteria. If a patient had multiple eligible TEs with the same biologic, only the first TE registered in BioCAPTURE was included. TEs were defined as a period of uninterrupted biological treatment, with gaps <90 days permitted. Biologics for which <20 TEs were available were excluded.

Dose adjustments. Dose adjustments during the first-year maintenance phase, applied for any reason, were taken into account in this study. First, the actual average dose administered during a TE was divided by the standard, labelled dose outlined in the Summary of Product Characteristics. This ratio was used to determine whether TEs had a lower maintenance dose (ratio < 0.95), standard maintenance dose (ratio 0.95–1.05), or higher maintenance dose (ratio > 1.05) compared with the labelled dose. Dose adjustment factors were calculated as the average of the ratios within a group of interest. These were included in the CPR analyses to correct for dose adjustments (see Tables SIIIA–SIIID).

Response rates and responder definitions. PASI scores were used as a measure of effectiveness. In daily practice, scheduling outpatient clinic visits at exact timepoints is not feasible. Consequently, linear interpolation was used to estimate the PASI scores at the required specified timepoints (weeks 12 and 52). Two known PASIs measured in a maximum range of 120 days from the specified timepoint were used for estimation. The following responder definitions were used in all CPR analyses: PASI75, PASI90, PASI100, PASI≤3, and PASI≤1.

Price input. Dutch prices were extracted on G-Standaard – Z-Index (excl. VAT; https://www.z-index.nl/g-standaard). Discounts were included for biologics with (upcoming) biosimilar availability. For adalimumab, a reported discount of 80% on the originator price was included (12). For ustekinumab, approximate discounts of 40%, 60%, and 80% on the originator price were

included (13). Swedish list prices were extracted from the Dental and Pharmaceutical Benefits Agency (www.tlv.se/in-english/prices-in-our-database.html). Sweden reflects a system with price transparency and a tender system for off-patent drugs, meaning that a monthly price competition results in the cheapest drug achieving product-of-the-month status. For ustekinumab, 2 price scenarios were considered: (*i*) a scenario with flat prices, with equal prices for the dosages 45 mg and 90 mg, resulting in dose adjustment factors based solely on changes in dosing intervals, and (*ii*) a scenario with non-flat prices, with dose adjustment factors based on both changes in dosages and dosing intervals. All pricing data were extracted in October 2024.

Statistical analysis

Baseline patient and treatment characteristics, response rates, and dose adjustment factors were analysed using SPSS version 29.0 (IBM Corp, Armonk, NY, USA). Patient and treatment characteristics were displayed in descriptive analyses including mean ± standard deviation (SD) or median with interquartile range (IQR). The CPR analyses were performed using the CPR-model build in Microsoft Excel (Microsoft Corp, Redmond, WA, USA).

In the primary analysis, the CPR at week 52 was calculated for each biologic based on all responder definitions (PASI75/90/100/≤3/≤1) using Dutch list prices together with reported or approximate discounts on adalimumab's and ustekinumab's originator prices. The primary analysis was repeated using Swedish list prices and the price of the biosimilar with product-of-the-month status; discounts in the case of biosimilar availability were not used as this is not common in Sweden. Additionally, the previous analyses were conducted including non-responder imputation (NRI), assuming that patients who discontinued their TE due to ineffectiveness would not have achieved a PASI75/90/100/≤1/≤3 at week 52. Further sensitivity analyses using Dutch list prices and their corresponding figures are provided in Figs S3–S5. One of these analyses examined the CPR at week 52 based on all responder definitions by classifying TEs into 2 groups: (*i*) initiated in patients with 0–1 prior biologic use and (*ii*) in those with ≥2 prior biologic uses. This classification was made to mitigate the highly skewed distribution of biologic naive and non-naive patients, particularly concerning the more recently introduced IL17- and IL23-inhibitors. Lastly, the CPR at week 12 based on all responder definitions was calculated, in general and stratified by number of prior biologics.

RESULTS

Patient and treatment characteristics

The total sample consisted of 886 patients with 1,169 TEs (Tables SI and SII). TEs with tildrakizumab and bimekizumab were excluded due to limited data (TEs <20). The subgroup with an available PASI at week 52, used in the primary CPR analysis, consisted of 525 patients with 606 TEs (**Tables I** and **II**). In this subgroup, a smaller proportion of patients were biologic naive, and more TEs originated from academic hospitals compared with the total sample. In both groups, the proportion of biologic naive patients varied substantially across biologics. Be aware that the remaining patients and TEs (without a PASI at week 52) were used in other analyses, e.g., with NRI and at week 12.

Dose adjustments

Dose adjustments were relatively common during the first year, with notable differences across the biologics (**Fig. 1**). Dose adjustments were least common among TEs with guselkumab, with an equal occurrence of 2.7% for both reductions and escalations. In contrast, dose adjustments were most common among TEs with ustekinumab, with escalation primarily seen in patients with a baseline weight of <100 kg (25.5%) and reductions primarily seen in patients with a baseline weight of ≥ 100 kg (26.7%).

Cost per responder at week 52: Dutch list prices

Comparing the CPR of all biologics, a discount of 80% on adalimumab's originator price resulted in the lowest CPR across all responder definitions (**Fig. 2**). Among the biologics without biosimilar availability, brodalumab showed the lowest cost-per-PASI90-, -≤1-, and -≤3-responder, while guselkumab showed the lowest cost-per-PASI75- and -100-responder. Secukinumab showed high CPR values.

Overall, the cost-per-PASI≤1-responder was significantly lower than the cost-per-PASI100-responder. Moreover, while guselkumab and ixekizumab showed, respectively, the lowest and the highest cost-per-PASI100-responder, the difference between the

Table I. Baseline patient characteristics: subgroup with available Psoriasis Area and Severity Index (PASI) score week 52 (*n* = 525)

Age at start TE, years, mean ± SD	49.3 ± 13.5
Disease duration until start first TE, years, median [IQR][a]	20.2 [17.8]
Sex, male, *n* (%)[a]	340 (64.8)
Family history of psoriasis, yes, *n* (%)[a]	317 (60.4)
PsA confirmed by rheumatologist, yes, *n* (%)[a]	136 (25.9)
BMI, kg/m^2, median [IQR][a]	27.9 [7.1]
Baseline PASI, median [IQR]	
Overall	9.4 [8.3]
Biologic naive patients (*n* = 214)	10.0 [8.3]
Biologic non-naive patients (*n* = 311)	8.7 [8.4]
Biologic naive, yes, *n* (%)	214 (40.8)
Number of previously used unique biologics, *n* (%)	
0	214 (40.8)
1	179 (34.1)
2	65 (12.4)
3+	67 (12.8)

[a]Missing values: disease duration until start first TE 22; sex 4; family history of psoriasis 38; psoriatic arthritis (PsA) 53; body mass index (BMI) 169.
IQR: interquartile range; SD: standard deviation; TE: treatment episode.

Table II. Baseline treatment characteristics: subgroup with available Psoriasis Area and Severity Index (PASI) score week 52 (*n* = 606)

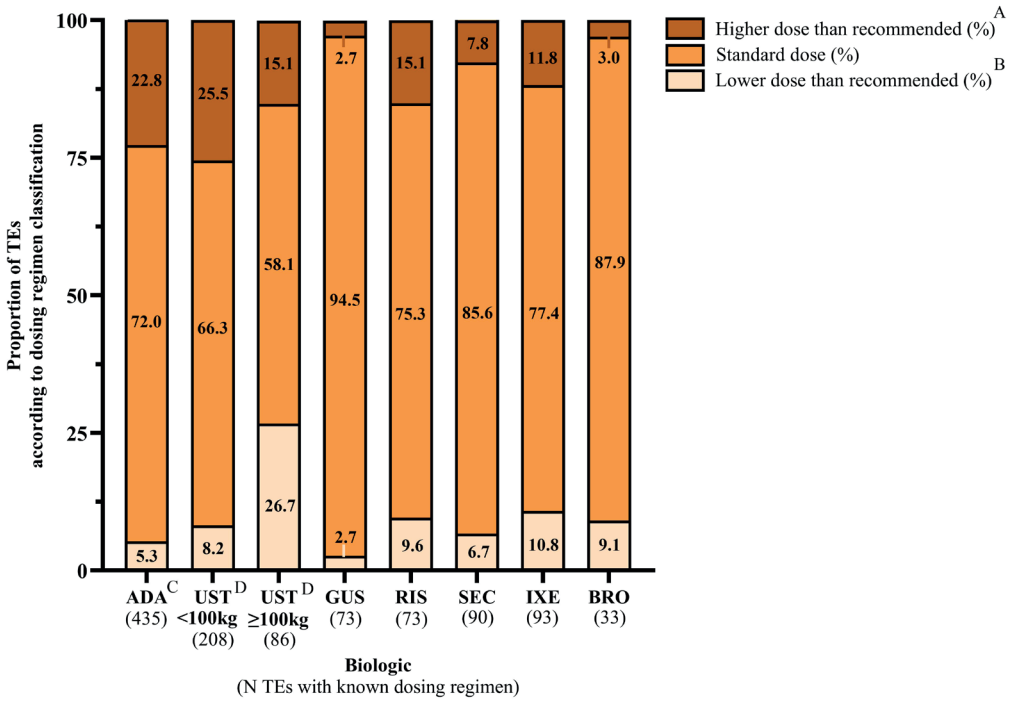
	TNFα-inhibitor	IL12/23-inhibitor	IL23-inhibitors		IL17-inhibitors		
	ADA *n* = 212 TEs 1078.6 PY	UST *n* = 208 TEs 1064.3 PY	GUS *n* = 39 TEs 118.7 PY	RIS *n* = 37 TEs 77.1 PY	SEC *n* = 46 TEs 149.9 PY	IXE *n* = 49 TEs 159.9 PY	BRO *n* = 15 TEs 43.8 PY
Age at start TE, years, mean±SD	48.4±13.5	49.4±13.6	49.2±12.9	55.6±12.9	51.3±11.6	52.2±13.2	54.9±12.7
Disease duration until start TE, years[a], median [IQR]	22.7 [19.7]	21.8 [15.6]	23.1 [11.5]	28.7 [21.6]	26.3 [18.7]	25.9 [14.3]	24.7 [11.5]
Sex, male, *n* (%)[a]	140 (66.0)	137 (65.9)	22 (56.4)	26 (70.3)	28 (60.9)	29 (59.2)	10 (66.7)
Academic hospital, *n* (%)	168 (79.2)	146 (70.2)	20 (51.3)	33 (89.2)	33 (71.7)	38 (77.6)	13 (86.7)
Baseline BMI, kg/m², median [IQR][a]	27.9 [6.7]	27.3 [7.4]	27.8 [10.2]	28.9 [6.1]	27.7 [4.5]	29.4 [4.8]	27.5 [7.8]
Family history of psoriasis, yes, *n* (%)[a]	127 (59.9)	141 (67.8)	18 (46.2)	25 (67.6)	26 (56.5)	26 (53.1)	9 (60.0)
PsA confirmed by rheumatologist, yes, *n* (%)[a]	56 (26.4)	58 (27.9)	9 (23.1)	9 (24.3)	15 (32.6)	19 (38.8)	3 (20.0)
Baseline PASI, median [IQR]	10.2 [7.8]	9.4 [10.1]	7.0 [8.4]	7.5 [8.6]	7.7 [6.3]	5.8 [4.3]	5.6 [5.9]
Biologic naive, yes, *n* (%)	110 (51.9)	82 (39.4)	2 (5.1)	9 (24.3)	3 (6.5)	7 (14.3)	1 (6.7)
Number of previously used unique biologics, *n* (%)							
0	110 (51.9)	82 (39.4)	2 (5.1)	9 (24.3)	3 (6.5)	7 (14.3)	1 (6.7)
1	82 (38.7)	59 (28.4)	10 (25.6)	10 (27.0)	13 (28.3)	13 (26.5)	6 (40.0)
2	13 (6.1)	54 (26.0)	9 (23.1)	4 (10.8)	8 (17.4)	6 (12.2)	3 (20.0)
3+	7 (3.3)	13 (6.3)	18 (46.2)	14 (37.8)	22 (47.8)	23 (46.9)	5 (33.3)

[a]Missing values for ADA, UST, GUS, RIS, SEC, IXE, and BRO respectively: disease duration until start treatment episode (TE) 6, 10, 4, 0, 1, 1, 0; sex 3, 0, 0, 0, 1, 0, 0; body mass index (BMI) 50, 58, 15, 13, 17, 14, 2; Family history of psoriasis 10, 11, 6, 3, 2, 4, 2; psoriatic arthritis (PsA) 24, 11, 8, 4, 7, 3, 2.
ADA: adalimumab; BRO: brodalumab; GUS: guselkumab; IXE: ixekizumab; IQR: interquartile range; PY: patient years; RIS: risankizumab; SD: standard deviation; SEC: secukinumab; UST: ustekinumab.

cost-per-PASI ≤ 1-responder of those biologics was relatively small. Notably, differences in the cost-per-PASI ≤ 3-responder were, across the biologics, modest compared with differences in CPR based on other responder definitions. Note that, especially for brodalumab, caution must be applied when interpreting the results due to the low number of available PASI scores.

Cost per responder at week 52: Swedish list prices

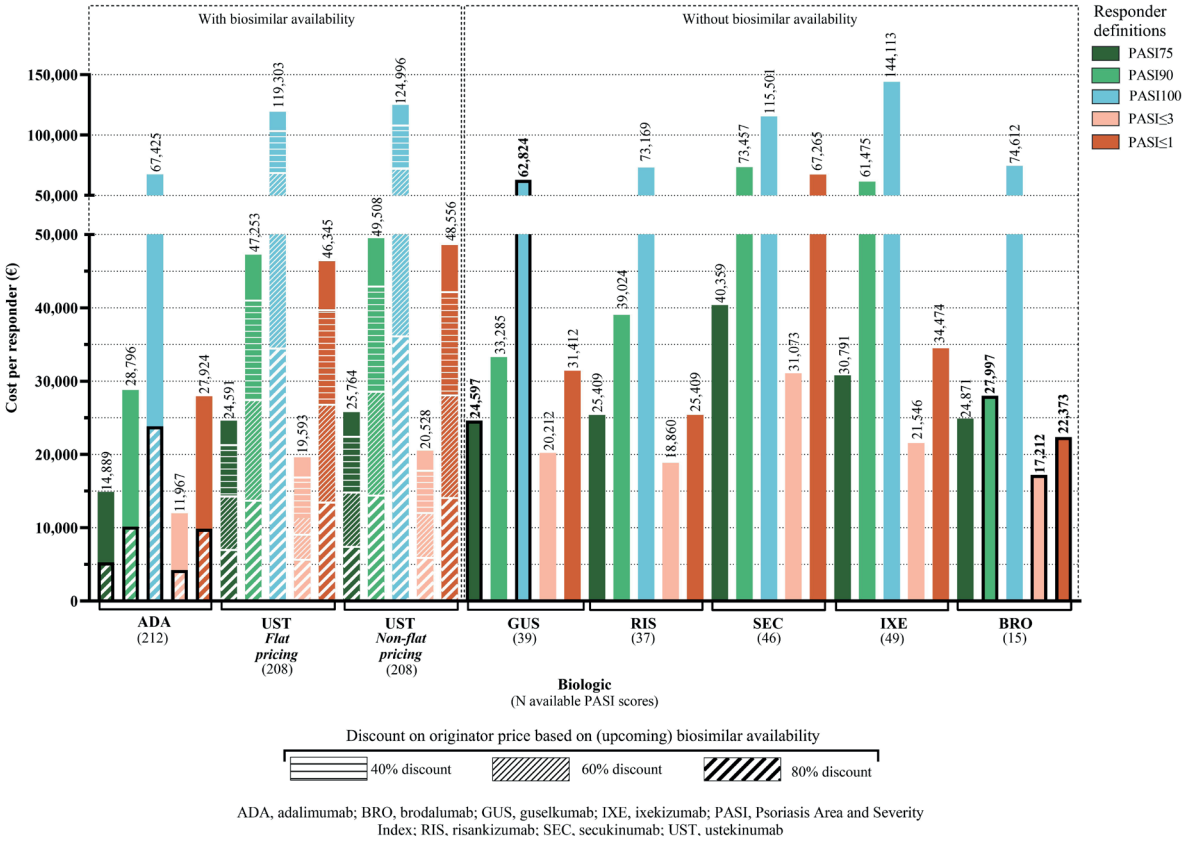
With Swedish list prices, the adalimumab biosimilar Hukyndra showed the lowest CPR based on all responder definitions. Note that the results were even lower than an 80% discount on the Dutch adalimumab's originator price (**Fig. 3**). The CPR of the ustekinumab biosimilar Pyzchiva and the original ustekinumab biologic were, due



[A] Any reason for deploying a higher dose than recommended included: e.g. psoriasis worsening, worsening psoriatic arthritis (PsA), the patient accidentally administered a higher dose
[B] Any reason for deploying a lower dose than recommended included: e.g. good response, surgery, illness, supply problems, the patient accidentally forgot an injection
[C] Adalimumab once a week was considered a higher dose than recommended
[D] The recommended dosing regimen for ustekinumab was solely based on baseline weight

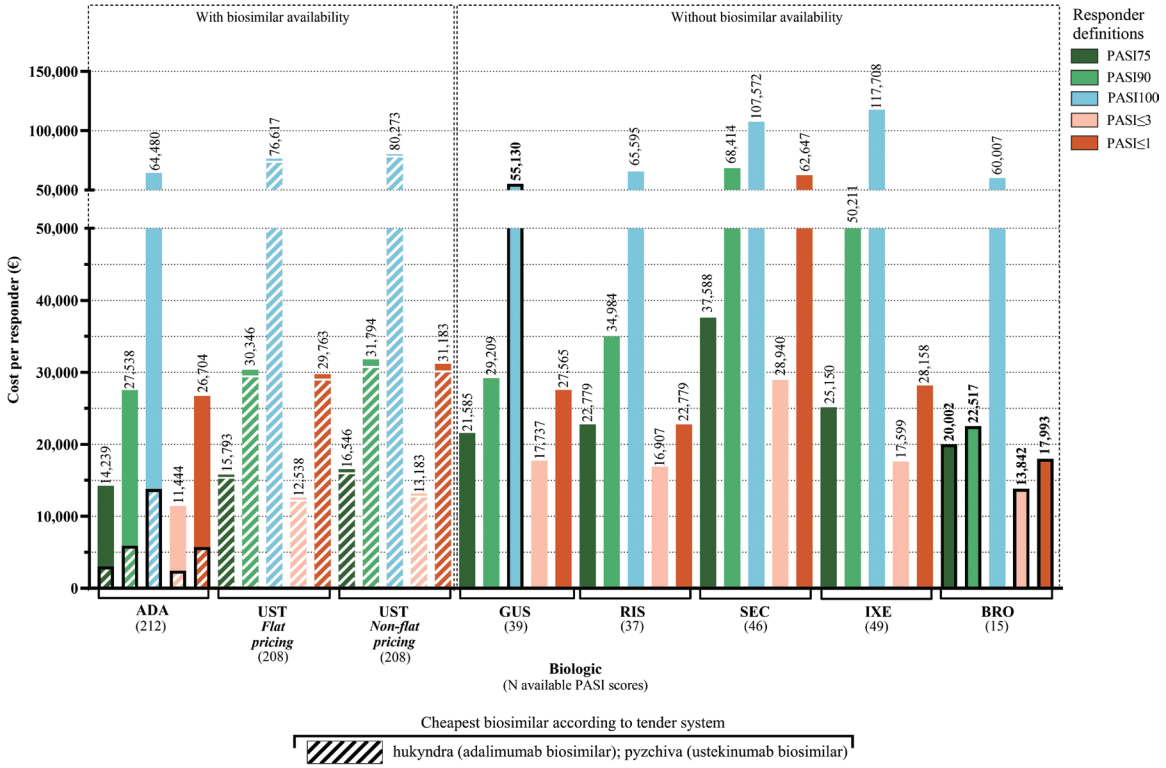
ADA, adalimumab; BRO, brodalumab; GUS, guselkumab; IXE, ixekizumab; kg, kilograms RIS, risankizumab; SEC, secukinumab; TE, treatment episode; UST, ustekinumab

Fig. 1. Dosing regimen during first-year maintenance phase: total sample.



ADA, adalimumab; BRO, brodalumab; GUS, guselkumab; IXE, ixekizumab; PASI, Psoriasis Area and Severity Index; RIS, risankizumab; SEC, secukinumab; UST, ustekinumab

Fig. 2. Cost-per-PASI75/90/100/ ≤3/ ≤1-responder at week 52 based on Dutch list prices and discounts.



ADA, adalimumab; BRO, brodalumab; GUS, guselkumab; IXE, ixekizumab; PASI, Psoriasis Area and Severity Index; RIS, risankizumab; SEC, secukinumab; UST, ustekinumab

Fig. 3. Cost-per-PASI75/90/100/ ≤3/ ≤1 responder at week 52 based on Swedish list prices.

to similar pricing, mostly comparable to ustekinumab's CPR results with a 60% discount on the Dutch originator price. Among biologics without biosimilar availability, brodalumab showed the lowest cost-per-PASI75, -90-, -≤1-, and -≤3-responder and guselkumab showed the lowest cost-per-PASI100-responder.

Cost per responder at week 52 with non-responder imputation: Dutch and Swedish list prices

The CPR of risankizumab was the least affected by the NRI, reflecting a relatively small discontinuation rate due to ineffectiveness (Figs S1 and S2). In contrast, the CPR of secukinumab was the most affected, reflecting a relatively high discontinuation rate due to ineffectiveness. In contrast to the primary analysis, risankizumab now showed the lowest cost-per-PASI75- and -100-responder among the biologics without biosimilars. With Swedish list prices, only brodalumab showed the lowest CPR across all responder definitions among the biologics without biosimilars.

Sensitivity analyses

Sensitivity analyses at week 52 with a breakdown on prior biologic use showed that the CPR was higher when the biologic was initiated in patients with ≥2 prior biologics compared with biologics initiated in patients with 0–1 prior biologic, but this was not seen at week 12 (see Figs S3, S5). Differences in the cost-per-PASI≤3-responder across the biologics were relatively small at week 12 (Fig. S4). Due to the small sample sizes, expanding these analyses as data accumulate would further strengthen conclusions.

DISCUSSION

This study on the cost per responder (CPR) of biologics for psoriasis in real-world practice demonstrated that adalimumab consistently showed the lowest CPR with both Dutch and Swedish list prices, mainly due to substantial price reductions driven by biosimilar availability. Considering solely biologics without biosimilar availability, brodalumab and guselkumab yielded the lowest CPR based on different responder definitions. However, incorporating non-responder imputation (NRI) slightly changed the findings across biologics without biosimilars. Using Dutch list prices, the lowest CPR were seen for brodalumab and risankizumab across different responder definitions. By using Swedish list prices, brodalumab consistently showed the lowest CPR.

While the substantial price reductions driven by biosimilar availability play the most significant role in lowering the CPR, our findings show that the newer-generation biologics brodalumab, guselkumab, and risankizumab already demonstrate promising results in terms of CPR. In line with this, a previous RCT-based study (14), which used a similar CPR model with list prices from France and Germany, identified brodalumab, guselkumab, and risankizumab as having the lowest 1-year cost-per-PASI100-responder. Additionally, a recent study by Egilman et al. (15) showed that, across various healthcare settings, brodalumab and risankizumab consistently remained on or near the efficiency frontier when evaluated based on 1-year PASI90 responses in RCTs. This indicated that brodalumab and risankizumab often show an optimal balance between cost and efficacy, where no other biologic provided better efficacy for a lower cost. Although the findings of the present study are based on a 1-year period, targeting the CPR is also crucial for the long-term economic impact, as psoriasis is a chronic disease that requires lifelong treatment.

In the study by Egilman et al. (15), ixekizumab also often appeared on the efficiency frontier based on different pricing data. However, ixekizumab did not exhibit the lowest CPR across all our analyses, possibly attributed to differences in patient characteristics and the source of effectiveness data. Nonetheless, the findings for ixekizumab in the present study were comparable to brodalumab, guselkumab, and risankizumab when the CPR was based on a PASI≤3. As an illustration, ixekizumab had a cost-per-PASI90-responder more than twice as high as brodalumab (€61,475 vs €27,997), while the difference in cost-per-PASI≤3-responder values was substantially smaller (€21,546 vs €17,212). Overall, we observed that the CPR based on a PASI≤3 were more homogeneous across the biologics than the CPR based on relative PASI scores. This reflects the gap between the use of relative and absolute responder definitions, also shown in previous real-world studies (16–20), further supporting the growing body of experts who favour the use of absolute PASI scores as a measure of effectiveness and as treatment targets in daily practice (21–24).

It is furthermore important to recognize that the list prices for adalimumab and ustekinumab used in this study have already been subject to significant price reductions due to the presence of biosimilars, whereas this does not yet apply to the IL17- and IL23-inhibitors. Knowing that biosimilars significantly impact prices provides promising future perspectives to achieve lower absolute PASI scores at prices comparable to some currently available conventional systemic treatments (25, 26). As price fluctuations will continue to have the greatest impact on the CPR and are expected to occur more frequently with the introduction of additional biosimilars, price transparency is of major importance.

A new and important aspect of this study, due to its major influence on costs, was the incorporation of real-world dose adjustments. While a relatively large proportion of TEs had changes to their dosing regimen, its impact on the 1-year CPR was minimal. This aligns with the study by Nyholm et al. (14), in which dose

adjustments based on previous real-world studies (27, 28) barely influenced the 1-year CPR. However, studies have shown that the occurrence of dose adjustments can vary during the treatment period (9, 27), and that dose escalations seem more common in the long term than in the short term (29). Moreover, dose reductions appear to be effective for a substantial proportion of patients on older biologics (30), and efforts are being made to investigate this for newer-generation biologics (31). Considering the prolonged use of biologics and the ongoing developments in dose reduction strategies, future research is required to assess the long-term impact of dose adjustments on the CPR.

Strength and limitations

A major strength of this study is the use of real-world, prospectively collected data from both academically and non-academically treated patients within BioCAPTURE, enabling a representative assessment of treatment effectiveness alongside dosing regimens. While registry data are vulnerable to data entry errors (32, 33), all data within BioCAPTURE are verified at source by the study team. Moreover, follow-up data on PASI scores is frequently incomplete across all biologics, with the effect being relatively more pronounced for newer-generation biologics as fewer TEs are available. Additionally, real-world data are generally prone to selection bias, which may have influenced the CPR estimates. Nonetheless, efforts were made to enhance the robustness of the results by incorporating both relative and absolute PASI responder definitions and NRI.

Some other limitations beyond the source data should also be considered. First, the subgroup with a PASI score at week 52 was not totally representative of the total sample, with more patients being biologic non-naive and treated in an academic hospital. Therefore, this might comprise a more difficult-to-treat group, potentially affecting the response rates. Second, in the Netherlands, hospitals can negotiate drug prices individually with insurance companies, but these prices are not publicly disclosed and can vary between hospitals. As these price variations are minimal for newer biologics without biosimilar availability, the primary driver of variability in CPR across biologics remains the presence of biosimilars. To ensure the robustness of our results, we also performed an analysis using Swedish list prices, which are transparent and not influenced by individual negotiations. Given that CPR estimates with Dutch and Swedish prices were broadly similar, it is expected that Dutch individual price negotiations would not substantially affect the CPR estimates. It is also important to note that the CPR estimates of the present study may not be directly generalizable across all healthcare systems. However, conducting the analyses using Swedish prices (reflecting the national-level negotiations) and Dutch prices (reflecting decentralized negotiations) provides a reasonable basis for approximating CPR outcomes in other national contexts. Additionally, comparisons with tildrakizumab and bimekizumab were not possible due to limited data availability. Finally, while the present study focused on 1-year CPR, the chronic nature of psoriasis highlights the need for longer-term evaluations.

Conclusion

Adalimumab showed the lowest CPR across different responder definitions, highly driven by the presence of biosimilars. Among biologics without biosimilars, brodalumab, guselkumab, and risankizumab demonstrated low CPR values. The relevance of using real-world data, specifically with the use of absolute PASIs instead of relative PASIs and incorporation of dose adjustments, is shown in this study. Additionally, as price fluctuations still have the biggest impact on the CPR, price transparency is required in order to guide physicians in choosing a cost-effective treatment approach.

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