

# Cost Per Responder Analysis of Certolizumab Pegol Versus Adalimumab in Patients with Moderate to Severe Active Rheumatoid Arthritis and High Rheumatoid Factor Levels: A Payer Perspective from Canada and Brazil

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## Objective

To evaluate the cost per responder for certolizumab pegol versus adalimumab to support value-based treatment decisions from the payer perspective in Canada and Brazil.

## Background

- Patients with rheumatoid arthritis and high rheumatoid factor levels are associated with reduced response to TNF inhibitors containing a fragment crystallizable region and are considered at poor prognostic risk<sup>1,2</sup>
- Certolizumab pegol is a TNF inhibitor without a fragment crystallizable region and which does not bind to rheumatoid factor, so may offer improved efficacy for these patients<sup>3,4</sup>
- Given the unmet need in these patients, we evaluated the cost per responder for certolizumab pegol versus adalimumab from the payer perspective in Canada and Brazil over a 104-week time horizon

## Methods

- A 104-week cost per responder model was developed using data from EXXELERATE, a phase IV, randomised, head-to-head trial comparing certolizumab pegol plus methotrexate with adalimumab plus methotrexate, in patients with moderate to severe rheumatoid arthritis<sup>5</sup>
- Drug costs were derived from 2025 provincial/national list prices in each country
- The model did not apply discounting as discounts are commercially in confidence and not publicly available
- The model was validated internally. Model inputs are described in Table 1
- A sensitivity analysis was performed to test the impact of varying list to net pricing assumptions for adalimumab on the results

## Results

- In patients with high rheumatoid factor, the proportion of patients achieving low disease activity were higher with certolizumab pegol compared to adalimumab (42.5% vs 25.5%) at Week 104 (Figure 1)
- The cost per low disease activity achievement for certolizumab pegol vs adalimumab respectively, was CAD 94,348 vs CAD 97,828 in Canada (Figure 2), and BRL 156,203 vs BRL 264,305 in Brazil (Figure 3)
- In Canada, adalimumab would require a 4% discount to match the cost per responder for certolizumab pegol. In Brazil, adalimumab would require a 41% discount to match the cost per responder for certolizumab pegol

## Summary

A cost per responder model was developed using data from the EXXELERATE trial.<sup>5</sup>

In patients with moderate to severe active rheumatoid arthritis and high rheumatoid factor levels:

- At Week 104, the proportion of patients achieving low disease activity was 17% higher with certolizumab pegol compared to adalimumab
  - Certolizumab pegol: 42.5%
  - Adalimumab: 25.5%
- Certolizumab pegol demonstrated a lower cost per responder compared to adalimumab biosimilar price in Canada and Brazil in 2025

	CPR (CAD)	CPR (BRL)
Certolizumab pegol	94,348	156,203
Adalimumab (biosimilar)	97,828	264,305



Adalimumab would require a 4% discount to match the cost per responder for certolizumab pegol.



Adalimumab would require an 41% discount to match the cost per responder for certolizumab pegol.

## Conclusions

At Week 104, certolizumab pegol at list price demonstrated a lower cost per responder compared to the lowest priced adalimumab biosimilar in both Canada and Brazil. These findings suggest that, for patients with moderate to severe active rheumatoid arthritis and high rheumatoid factor levels, certolizumab pegol may offer a more personalised and cost-effective treatment strategy, supporting a change in the current guideline-recommended patient pathway, and more efficient allocation of healthcare resources and potentially reducing the budgetary burden for payers in Canadian and Brazilian healthcare settings.

## Limitations

- Confidential net pricing leads to potential uncertainties on pricing and is a limitation for any cost analyses when list pricing is used
- While Ontario is an adequate proxy for Canada, additional province-level analysis would be valuable to confirm these findings across all provinces

BRL: Brazilian Real; CAD: Canadian dollar; CPR, cost per responder; Q2W: every 2 weeks; TNF: tumour necrosis factor.

References: <sup>1</sup>Smolen JS. Ann Rheum Dis. 2023;82(1):3–18; <sup>2</sup>Pappas DA. Rheumatol Int 2021;41:585–93; <sup>3</sup>Bidgood SR. ACR 2024; <sup>4</sup>Smolen JS. Rheumatology. 2024;63(11):3015–24; <sup>5</sup>Smolen JS. Lancet 2016; 388(10061):2763 – 2774; <sup>6</sup>Bonfiglioli KR. Adv Rheumatol. 2021;61(1):70; <sup>7</sup>Hazlewood GS. J Rheumatol. 2022 Oct;49(10):1092–1099.

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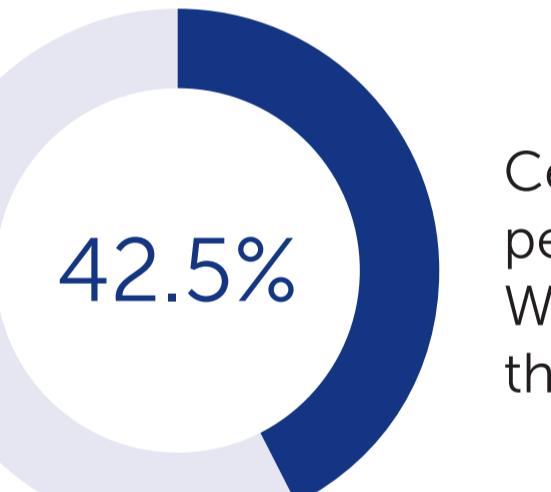
Table 1 Model inputs

Model input	Definition
Low disease activity response	Defined by achievement of low disease activity*, measured as a Disease Activity Score 28 joints-C-reactive protein $\leq 2.7$
Cost per responder at Week 104	Calculated by multiplying the total number of doses administered over 104 weeks by the drug acquisition cost divided by the corresponding response rate
Treatment regimens	Followed the approved product labels: Certolizumab pegol 400 mg at Weeks 0, 2, and 4, followed by 200 mg every 2 weeks; Adalimumab 40 mg every other week
Adalimumab biosimilar costs	Lowest list prices from Ontario Drug Benefit Formulary and Câmara de Regulação do Mercado de Medicamentos

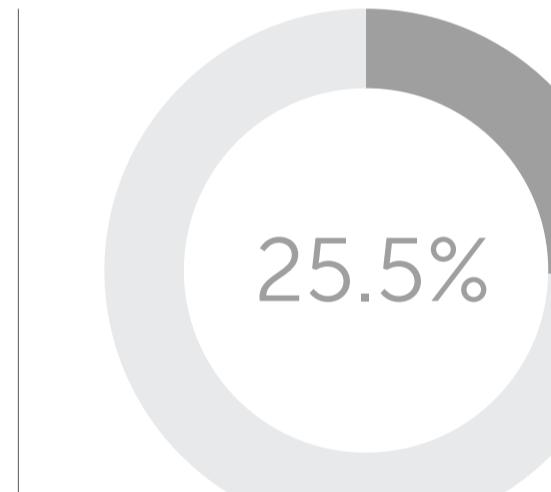
\* Clinical outcome target in Brazilian and Canadian guidelines.<sup>6,7</sup>

Figure 1

Low disease activity response probability at Week 104 in patients with high rheumatoid factor



Certolizumab pegol 400 mg Week 0, 2, and 4, then 200 mg Q2W



Adalimumab 40 mg every other week

Figure 2

Canada - Cost per responder at 104 weeks in patients with moderate to severe rheumatoid arthritis and high rheumatoid factor (CAD)



<sup>†</sup> Costs from Ontario Drug Benefit Formulary

Sensitivity analysis: In Canada, adalimumab would require a 4% discount to match the cost per responder for certolizumab pegol.

CAD 120,000  
CAD 100,000  
CAD 80,000  
CAD 60,000  
CAD 40,000  
CAD 20,000  
CAD 0

CAD 94,348  
CAD 97,828

Certolizumab pegol Adalimumab (biosimilar)

Figure 3

Brazil - Cost per responder at 104 weeks in patients with moderate to severe rheumatoid arthritis and high rheumatoid factor (BRL)



Sensitivity analysis: In Brazil, adalimumab would require a 41% discount to match the cost per responder for certolizumab pegol.

BRL 300,000  
BRL 250,000  
BRL 200,000  
BRL 150,000  
BRL 100,000  
BRL 50,000  
BRL 0

BRL 156,203  
BRL 264,305

Certolizumab pegol Adalimumab (biosimilar)

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