INCREMENTAL COST PER REMISSION IN PATIENTS WITH RHEUMATOID ARTHRITIS WHO HAD INADEQUATE RESPONSE TO CONVENTIONAL SYNTHETIC DISEASE-MODIFYING ANTIRHEUMATIC DRUGS IN COLOMBIA

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OBJECTIVE

- **The objective of this work was to estimate the incremental cost per remission (ICPR) for Janus Kinase inhibitors (JAKi) relative to conventional-synthetic-disease-modifying-antirheumatic drugs (csDMARD) in patients with rheumatoid arthritis (RA) who showed inadequate response to csDMARD (csDMARD-IR) from a payer perspective in Colombia.**

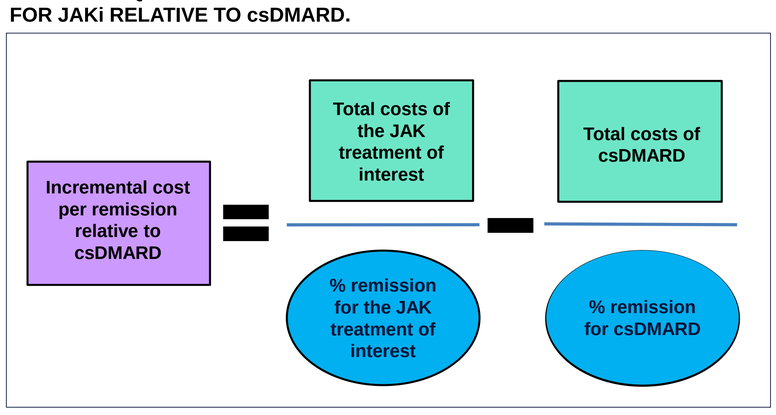
INTRODUCTION

- The treat-to-target strategy, defines clinical remission as the primary therapeutic goal for RA.[1,2]
- Achieving and maintaining remission is likely to be associated with substantial economic benefits. With sustained disease control, patients would have no or fewer disease flares and require less resources and costs for disease management.[3]
- Biologics and JAKi have transformed the management of RA to the extent that remission is a reasonable expectation and is now a major therapeutic target to guide treatment in clinical practice.[4]
- Inadequate response to conventional-synthetic-disease-modifying-antirheumatic-drugs (csDMARD-IR) is solved by switching therapy to biologics and JAKi.[4] However, evidence regarding the potential cost savings of such switching is limited in Latin America.

METHODS

- A cost per remitter economic analysis was carried out to calculate the incremental cost per patient in remission (ICPR) with available JAKi drugs in Colombia relative to csDMARD with inadequate response at 12 and 24 weeks, according to the commonly reported timeframe used to assess efficacy outcomes in RA.[2,4] This analysis calculated the incremental cost for each drug per patient in remission relative to csDMARD applying the formula shown in **Figure 1**.

FIGURE 1: EQUATION FOR INCREMENTAL COST PER PATIENT IN REMISSION FOR JAKi RELATIVE TO csDMARD.



- Treatments of interest were conventional-synthetic-disease-modifying-antirheumatic-drugs (csDMARD) and JAKi marketed in Colombia: upadacitinib 15mg (UPA-15mg), baricitinib 2mg (BAR-2mg), baricitinib 4mg (BAR-4mg) and tofacitinib 5mg (TOF-5mg).
- The perspective of the economic analysis was that of a third payer in Colombia. Costs are presented in Colombian Pesos (COP$) and Euros (€), using an exchange rate of 1 Euro to COP$ 4,477.66, as reported by the Colombian Central Bank on October 5, 2023.
- Drug costs were obtained from the official drug price database in Colombia (SISMED).
- Direct medical costs based on level of disease activity were estimated by clinical experts and included clinical exams, drug use, physician consultation, hospitalization, and emergency visits. Costs were estimated by level of disease activity for each drug for remission (DAS-28 CRP), low-disease-activity (LDA) and moderate/high-disease-activity (MDA/HDA). Direct medical costs at 12 and 24 weeks were derived from the estimated annual cost of €867 (COP$ 3,880,090) for remission and LDA and €1,245 (COP$ 5,574,162) for MDA/HDA, respectively.
- Total cost per treatment was calculated by adding drug cost and direct medical cost for the analyzed time frame. Drug costs accounted for about 83%-85% of the total costs, while direct medical costs represented 15%-17% for JAKis. **(Table 1).**
- Efficacy inputs for the 12- and 24-weeks timeframe for each treatment were obtained from a network meta-analysis (**Table 1**). [5] Efficacy was measured according to the RA DAS-28 Disease Activity Index. Patients were classified in remission when the index DAS28 < 2.6.

TABLE 1: EFFICACY (REMISSION RATE), TOTAL COST PER PATIENT AND COST PER PATIENT IN REMISSION IN EUROS (€) AT 12 AND 24 WEEKS.

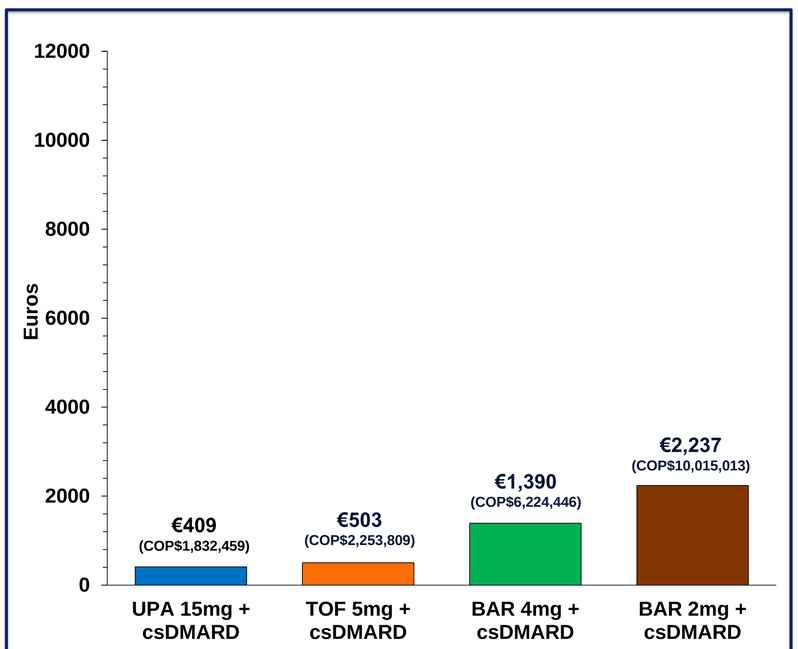
Treatment	12 WEEKS			24 WEEKS		
	Remission rate (%)	Total cost per patient	Cost per patient in remission	Remission rate (%)	Total cost per patient	Cost per patient in remission
csDMARD	7.10	€356	€5,012	12.30	€697	€5,665
UPA 15mg + csDMARD	32.30	€1,751	€5,421	46.70	€3,476	€7,444
BAR 2mg + csDMARD	22.30	€1,616	€7,248	32.60	€3,212	€9,851
BAR 4mg + csDMARD	25.20	€1,613	€6,402	37.90	€3,202	€8,448
TOF 5mg + csDMARD	26.60	€1,467	€5,515	20.10	€2,948	€14,667

UPA: upadacitinib; BAR: baricitinib; TOF: tofacitinib.

RESULTS

- At 12 weeks, the total cost per patient in remission ranged from €5,421 (COP $24,272,522) with UPA15mg + csDMARD to €7,248 (COP $32,455,077) with BAR2mg + csDMARD. This result demonstrated UPA15mg + csDMARD achieved the lowest ICPR relative to csDMARD among all others JAKi analyzed: €409 (COP $1,832,459) at 12 weeks. (**Table 1, Figure 2)**

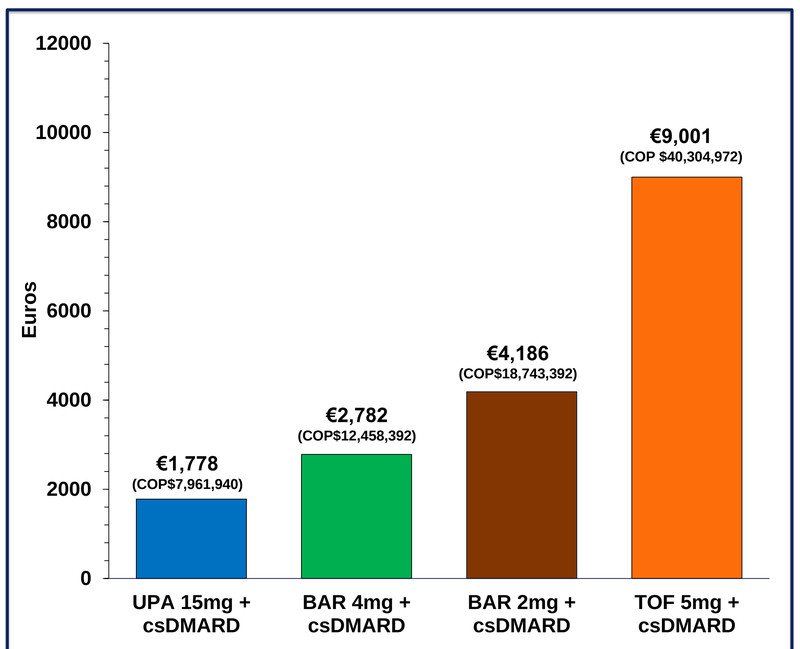
FIGURE 2: INCREMENTAL COST PER PATIENT IN REMISSION (ICPR) FOR JAKi RELATIVE TO csDMARD AT 12 WEEKS.



UPA: upadacitinib; BAR: baricitinib; TOF: tofacitinib. Colombian pesos ($) in parenthesis.

- At 24 weeks, the total cost per patient in remission ranged from €7,444 (COP $33,329,881) with UPA15mg + csDMARD to €14,667 (COP $65,672,913) with TOF5mg + csDMARD. These results are in line with the results at 12 weeks showing UPA15mg + csDMARD achieves the lowest ICPR relative to csDMARD among all others JAKi analyzed: €1,778 (COP $7,961,940) at week 24 requiring a lower investment per patient in remission. **(Figure 3)**

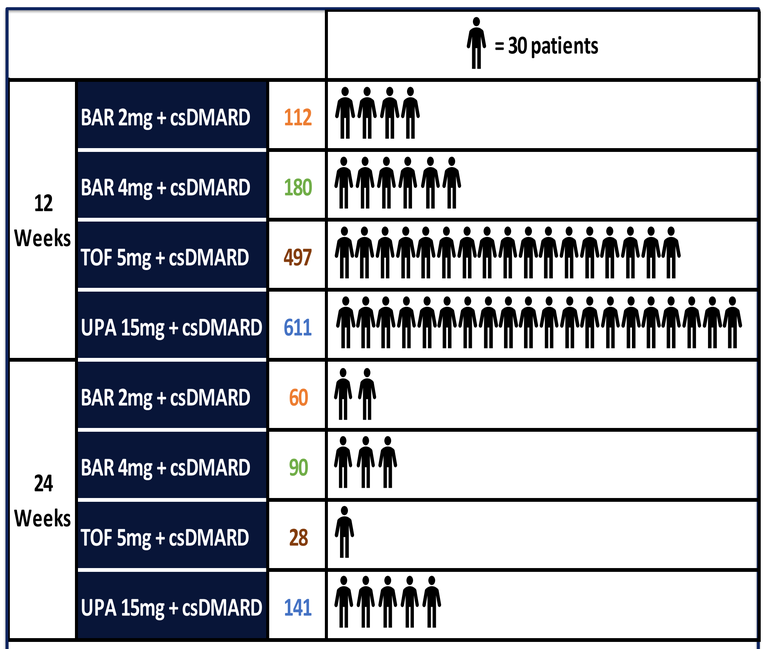
FIGURE 3: INCREMENTAL COST PER PATIENT IN REMISSION (ICPR) FOR JAKi RELATIVE TO csDMARD AT 24 WEEKS.



UPA: upadacitinib; BAR: baricitinib; TOF: tofacitinib. Colombian pesos ($) in parenthesis.

- Considering a fixed healthcare budget of €250,000 (equivalent approximately to COP$ 1,119,000,000), more patients would achieve RA remission with UPA15mg at 12 and 24 weeks (611 and 141, respectively), in contrast with 112/60, 180/90 and 497/28 patients with BAR2mg, BAR4mg and TOF5mg, respectively. **(Figure 4)**

FIGURE 4: ADDITIONAL PATIENTS IN REMISSION RELATIVE TO csDMARD AT 12 AND 24 WEEKS OF TREATMENT WITH A JAKi FOR A FIXED HEALTHCARE BUDGET OF €250,000*.



*Equivalent approximately to COP $1,119,000,000. UPA: upadacitinib; BAR: baricitinib; TOF: tofacitinib.

CONCLUSIONS

- **This economic analysis provides findings of interest for Colombian payers relative to incremental cost per patient with rheumatoid arthritis in remission with available JAKi relative to csDMARD therapy.**
- **The results suggest that among JAKi therapies for the treatment of patients with moderate to severe RA who had csDMARD-IR, upadacitinib would have the lowest incremental cost per remission at 12 and 24 weeks..**
- **Therefore, more patients could achieve remission with upadacitinib for a fixed healthcare budget.**

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DISCLOSURES

- Financial support for the study was provided by AbbVie. AbbVie participated in the interpretation of data, review, and approval of the publication. Neuroeconomix served as a consultant for the localization of the model in Colombia and Biopress has served as Medical Writer, both of whom have received payment for their services from AbbVie. No honoraria or payments were made for authorship.
- Dr. Edwin Jauregui has been a speaker for AbbVie, Biopas, Novartis and Fresenius Kabi in the last 2 years, and has participated as a member in Advisory Boards organized by AbbVie, Amgen, and Fresenius Kabi. Felipe Afanador is an employee of AbbVie Colombia and may own AbbVie stock or stock options.

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