ISPOR Europe 2024

17-20 November 2024, Barcelona, Spain

EE134

Cost-Effectiveness Analysis of Filgotinib Versus Tofacitinib As First-Line Treatments for Rheumatoid Arthritis in Greece

Nomikos Nikos[1], **Naoum Panagiota**[1], Athanasakis Kostas[1] , Kyriopoulos Ilias[2]

[1]Laboratory for Health Technology Assessment (LabHTA), Department of Public Health Policy, University of West Attica, Athens, Greece, [2]Department of Health Policy, London School of Economics and Political Science London, United Kingdom

Background & Objective

Rheumatoid arthritis (RA) is a chronic, progressive inflammatory disease affecting joints and, in some cases, other organs. It leads to joint pain, stiffness, and tissue degeneration, with symptoms like morning stiffness and tenderness worsening over time. RA can also cause systemic complications such as interstitial lung disease, cardiovascular conditions, and infections, impacting patients' health-related quality of life and ability to work. Diagnosis involves clinical symptoms, serological markers, and acute-phase proteins, and treatment aims for disease remission, primarily monitored through the DAS28 scale. Filgotinib, a preferential oral JAK1 inhibitor, is a newer treatment option for moderate to severe RA patients who show inadequate response to prior DMARDs and can be used with methotrexate. This analysis focuses on the cost-effectiveness of filgotinib versus tofacitinib as first-line treatment options within the Greek healthcare system, with results expected to clarify resource allocation in RA management and highlight the economic value of these alternatives.

Methods

The analysis is grounded on an adaptation of a pharmacoeconomic model evaluating the cost-effectiveness of filgotinib as a first-line treatment option for patients with an inadequate response to prior methotrexate therapy with moderate to severe RA. The model compares filgotinib with tofacitinib, assessing both the health outcomes and associated costs of each treatment. The population characteristics and main features of the economic evaluation are summarized in Table 1.

Key clinical inputs for the efficacy and safety of filgotinib in are derived from the DARWIN and FINCH trials, which include both short-term assessments (DARWIN1, DARWIN2) and long-term evaluations (DARWIN3) as well as phase III studies. Comparator efficacy was incorporated from a network meta-analysis.

Regarding resource utilization, inputs were informed by an expert consensus panel of rheumatologists, providing essential data on RA patient characteristics and care practices within Greece. These data guided the estimates for healthcare resource use and clinical management costs in the Greek healthcare setting, ensuring model relevance and accuracy.

Cost data, including drug prices, administration, and monitoring, were sourced from official Greek health system data [1-2], with drug prices adjusted to reflect a 5% hospital rebate [3]. This analysis is conducted from a third-party payer perspective and evaluates key outcomes, including quality-adjusted life years (QALYs), life years, costs, and the incremental cost-effectiveness ratio (ICER), with a lifetime horizon of up to 100 years.

Table 1: Main Features of Economic Evaluation

Population	**Adult patients with moderate or severe RA who have had an inadequate response to prior methotrexate therapy**
Intervention	**Filgotinib 200mg daily plus methotrexate**
Comparators	**Tofacitinib 5mg twice daily plus methotrexate**
Perspective of the analysis	**Third-party payer: only third-party payer benefits and costs are included**
Economic evaluation	**Cost effectiveness analysis**
Time horizon	**Lifetime horizon with a maximum age of 100 years**
Inputs	**Pharmaceutical cost** **Administration cost** **Monitoring cost** **Hospitalization cost** **Adverse event cost**
Outputs	**Quality adjusted life years (QALYs)** **Life years** **Costs** **Incremental cost** **Net monetary benefit** **ICER**
Discount rate	**3,5% (Costs, life years and QALYs)**

Results

The comparative economic analysis shows that using filgotinib as the first-line treatment for moderate to severe RA presents notable cost advantages compared to tofacitinib, with both treatments yielding identical life years at 14.82. Filgotinib achieves this outcome at a total cost of €76,823, which is €1,960 lower than the €78,783 associated with tofacitinib, while the QALYs remain nearly identical, with a marginal difference of 0.001 QALY in favor of filgotinib. This minimal QALY difference, combined with the substantial cost savings, clearly demonstrates filgotinib's economic superiority, establishing it as the dominant JAK1 inhibitor for first-line advanced treatment in RA.

To further validate these findings, a deterministic sensitivity analysis (DSA) was conducted, examining variations in key parameters such as drug acquisition costs, adverse event rates, and other treatment-related costs. The DSA confirmed that filgotinib consistently remains the lower-cost option across all modeled scenarios, with negligible impact on QALYs. This stability underscores the economic advantage of filgotinib, as variations in individual parameters minimally affect its overall cost-effectiveness compared to tofacitinib.

Additionally, a probabilistic sensitivity analysis (PSA) was performed to assess the robustness of these results under simultaneous random variations in all parameters. The PSA confirmed filgotinib's cost-effectiveness, with the cost-effectiveness acceptability curve (CEAC) showing that filgotinib remains cost-effective across all willingness-to-pay (WTP) thresholds considered. This consistency in CEAC outcomes further reinforces filgotinib's standing as the preferred cost-effective choice for first-line treatment among JAK1 inhibitors in moderate to severe RA.

Table 2. Summary results of the cost effectiveness analysis

	Life years	QALYs	Incremental QALYs	Total cost (€)	Incremental cost (€)	NMB (€)	Incremental NMB (€)	ICER (€/QALY)
Filgotinib	**14.82**	**8.769**		**76,823**		**361,644**		
Tofacitinib	14.82	8.768	0.001	78,783	-1,960	359,616	2,029	Dominates

Figure 1. ICER scatterplot

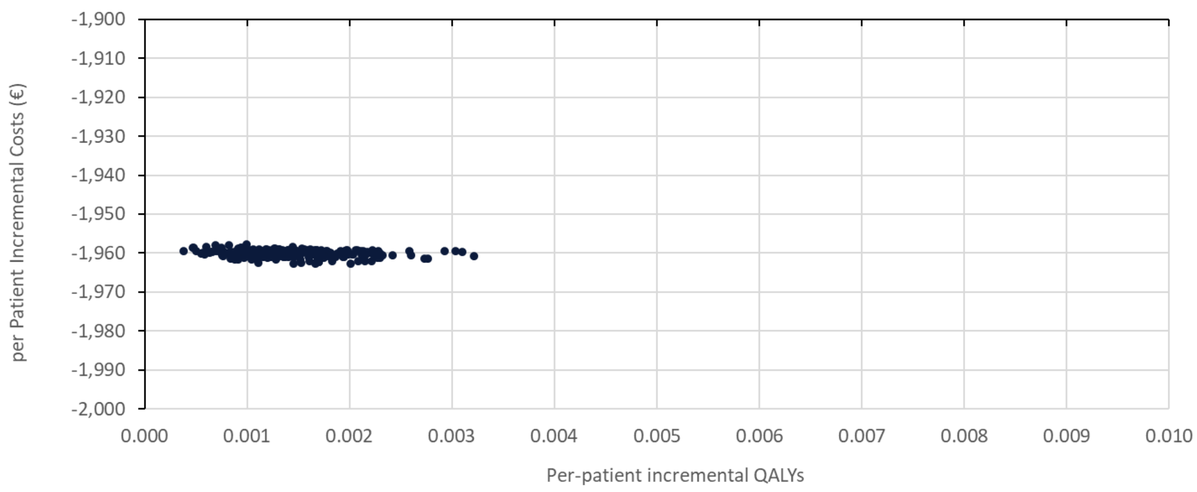
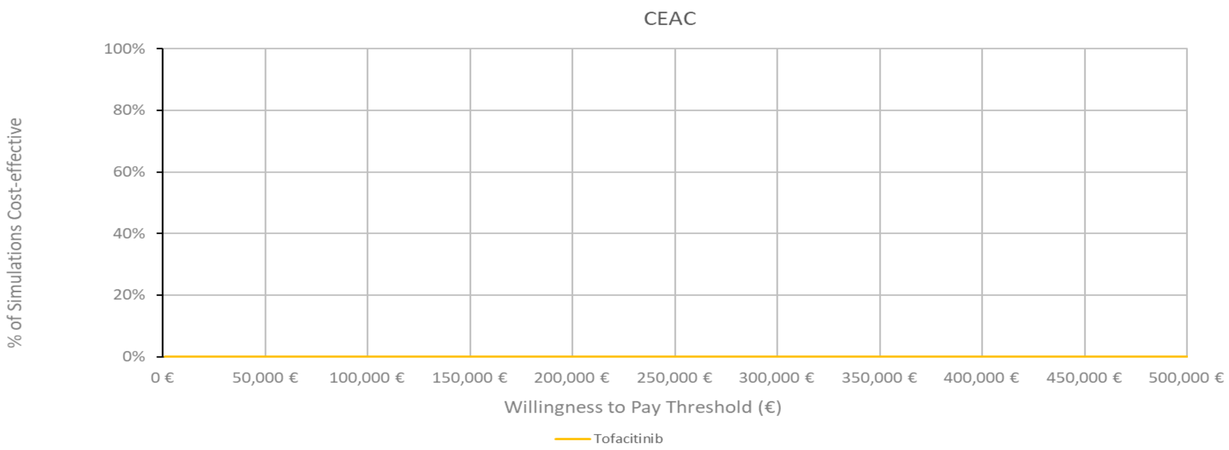


Figure 2. Cost-Effectiveness Acceptability Curve



Conclusions

Filgotinib is a cost-effective and dominant choice over tofacitinib in the Greek healthcare setting, achieving comparable clinical outcomes with significant cost savings for third-party payers. This analysis shows that filgotinib yields nearly identical QALYs to tofacitinib, with only a 0.001 QALY difference in its favor, while maintaining a €1,960 lower total cost. Sensitivity analyses further confirm the stability of filgotinib's cost-effectiveness across varied parameters and willingness-to-pay thresholds, reinforcing its economic advantage. These findings support filgotinib as the preferred treatment for moderate to severe RA, offering a balanced approach to clinical efficacy and economic efficiency.

References

[1] Ministry of Health. Bulletin of revised prices of medicines for human use. Available at https://www.moh.gov.gr

[2] EOPYY (2024). Test reimbursement list. Available at https://www.eopyy.gov.gr/

[3] Government Gazette Issue A 74/19.05.2017

Funding: This study was financially supported Swedish Orphan Biovitrum Ltd. (Sobi).

Disclosure statement: No authors have any conflicts of interest to disclose