The economic value of tofacitinib 5 mg BID in the treatment of moderate to severe rheumatoid arthritis: A Canadian analysis

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Background


• Rheumatoid arthritis (RA) is a progressive, destructive, lifelong condition associated with significant co-morbidities, which causes significant reduction in life expectancy and quality of life.

• A Canadian analysis of tofacitinib 5 mg BID in the treatment of moderate to severe RA was performed.

• New medications are often selected for the treatment of RA.

• In Canada, tofacitinib in combination with methotrexate is indicated for the treatment of RA. Tofacitinib is an oral Janus kinase inhibitor for the treatment of RA.

• Associated with significant co-morbidity, which causes significant reduction in life expectancy and quality of life.

• The objective of this analysis was to estimate the costs and effects, including QALYs, of tofacitinib compared with standard therapies when used as second-line therapy for RA.

• The model was based on a meta-analysis of published clinical trials for tofacitinib and standard therapies.

• Efficacy was measured by the Health Assessment Questionnaire-Disability Index (HAQ-DI) score change during the first 6 months of treatment, as was cost-effectiveness. The results showed that more than 76.7% of all results have an ICER that is less than the willingness-to-pay per QALY.

• The results of this study were robust with changes in key parameters, with all cases showing the inclusion of tofacitinib to the treatment strategy including tofacitinib was shown to be dominant with fewer costs and greater effectiveness. The results of this study were robust with changes in key parameters, with all cases showing the inclusion of tofacitinib to the treatment strategy including tofacitinib was shown to be dominant with fewer costs and greater effectiveness.

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• Results

• After running the model for 100,000 simulations of patients with moderate to severe RA, the treatment arm including tofacitinib had lower costs ($298,960 with 10 QALYs) compared with the comparator arm excluding tofacitinib ($30,000 with 8.9 QALYs). Therefore, a treatment strategy including tofacitinib was shown to be dominant with lower costs and greater effectiveness.

• Conclusions

• This Canadian-specific model, integrating baseline characteristics for patients with RA, medication costs, estimates of non-medication healthcare resource costs by HAQ-DI score range and for the HAQ-DI-to-utility relationship, were taken from Canadian sources, shows that the inclusion of tofacitinib into the treatment strategy for moderate to severe RA is a dominant strategy (lower cost and increased QALYs).

• These results were shown to be robust after completing one-way and probabilistic sensitivity analyses.

• A strength of this model was its ability to evaluate different sequences of treatments.

• A limitation of this approach was that the clinical data used in the model was not taken from network meta-analysis results and was not from head-to-head trials and, therefore, did not account for previous failure from the specific treatments in the proposed paradigm.

References

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