




Cost-effectiveness of TNF-alpha Inhibitors, B-cell Inhibitors & JAK Inhibitors for the treatment of Rheumatoid Arthritis

A Health Technology Assessment in India

Policy Brief

Health Technology Assessment in India (HTAI)
ICMR-National Institute of Epidemiology

Key findings

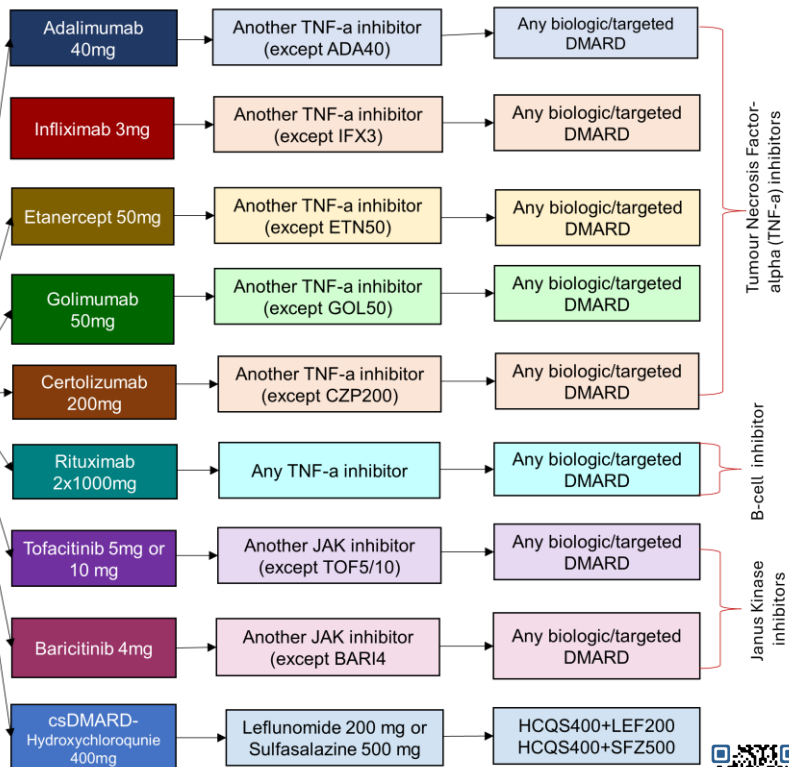
<p>Evidence Synthesis</p>  <p>JAK & B-cell inhibitors Cost-effective than other DMARDs, mainly in high-income countries</p>	<p>Primary Study</p>  <p>Poor HRQoL Poor Quality of Life in severe RA</p>	<p>Model-based Economic Evaluation</p>  <p>>50% incurred catastrophic health expenditure</p> <p>Newer DMARDs are NOT cost-effective; mainly due to Higher costs</p>
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Background

- ❖ **Rheumatoid Arthritis (RA)** is a chronic autoimmune disorder
- ❖ Conventional synthetic **Disease-modifying anti-rheumatic drugs (DMARDs)** are the key therapeutic agents
- ❖ **Methotrexate (MTX)** is the most used DMARD
- ❖ **Biologic/Targeted DMARDs** are suggested in MTX-failed patients.
- ❖ Is newer b/t DMARDs cost-effective in India?

Intervention

All interventions are given along with Methotrexate 15mg



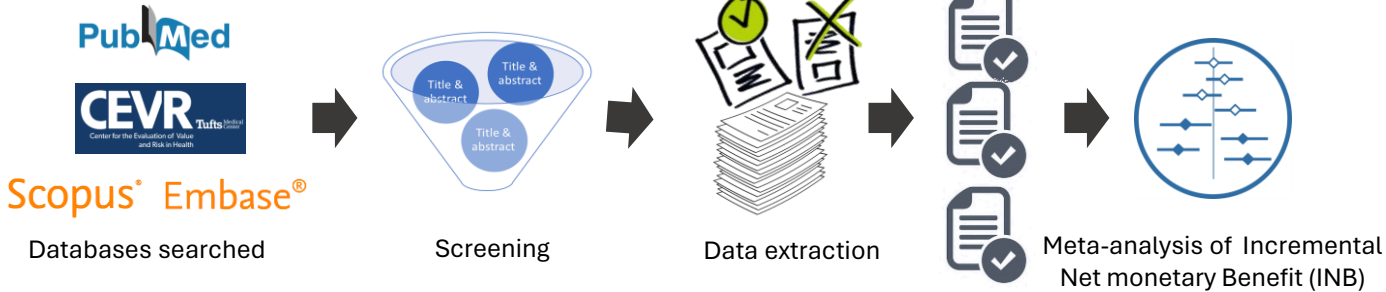
→ Indicates non-response or intolerance to the intervention

Scan for the full report



1. Systematic review and meta-analysis: Cost-utility studies on TNF-alpha, B-cell and JAK inhibitors for RA treatment

SRMA Methods

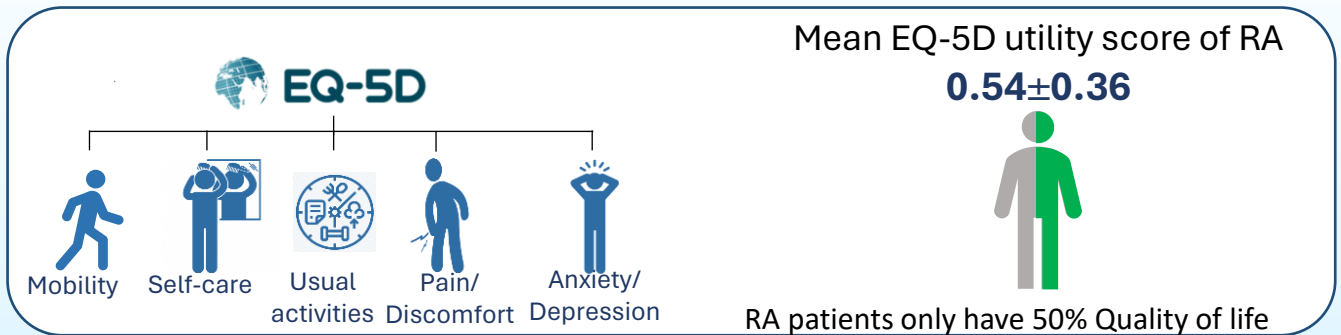


SRMA results show that **JAK and B-cell inhibitors** are cost-effective compared to other DMARDs, mainly in high-income countries, whereas **TNF-alpha inhibitors** are **not cost-effective**

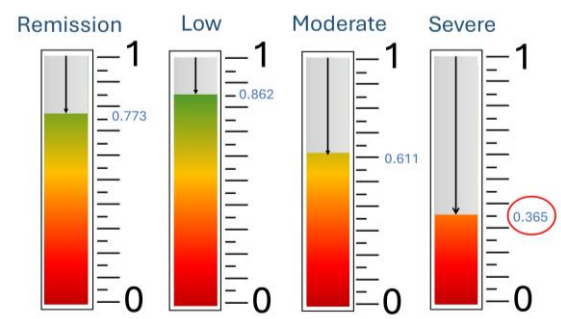
GRADE Grading of Recommendations, Assessment, Development, and Evaluations
Assessment showed **Low certainty of evidence** on the SRMA pooled results

2. Primary study

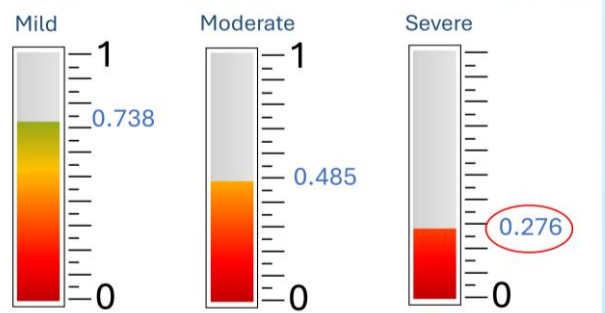
(i) Health-related Quality of Life in Rheumatoid Arthritis



Utility scores specific to disease activity (DAS-28)



Utility scores specific to Functional Disability (HAQ)



(ii) Out-of-pocket & Catastrophic health expenditure (CHE) in RA

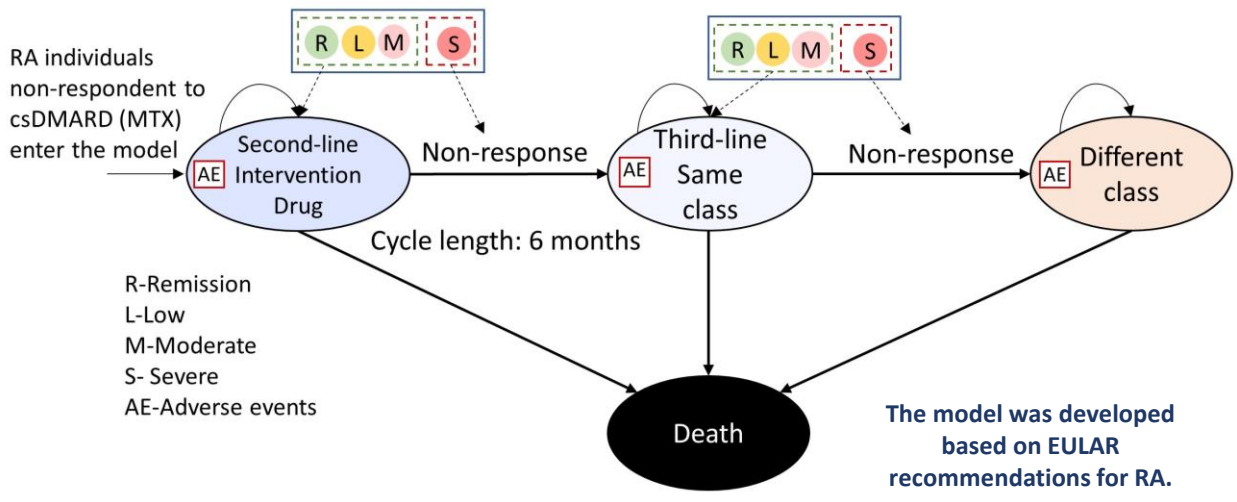
51.4%

household experienced
CHE owing to RA

- Household annual income
₹710,492 (540,155 to 880,828)
- Annual health expenditure for treating RA
₹44,700 (41,710 to 47,690)
- OOPE among RA patients per household
₹40,698 (38,249 to 43,148)



3. Model-based economic evaluation



- Model-based economic evaluation** showed that **TNF-alpha, B-cell, and JAK inhibitors** were **not cost-effective** compared to csDMARDs for methotrexate failed RA patients at the current price considering a willingness-to-pay threshold of one GDP per capita for India.
- Cost-effectiveness of interventions was **sensitive to changes in drug pricing**.
- All evaluated interventions exhibited **negative net monetary benefits**.



Recommendations

Consideration of Conventional, Biologic and Targeted Synthetic DMARDs:

- At the **current drug price** for RA patients who have failed methotrexate, TNF-alpha, B-cell, and JAK inhibitors are **not cost-effective** compared to csDMARDs and hence not recommended.
- Given the **negative net benefits** of all evaluated interventions compared to csDMARDs, it is crucial to prioritize csDMARDs for RA treatment in India.

Affordability and Accessibility:

- Policy efforts should focus on improving the affordability and accessibility of csDMARDs, as they remain the standard of care and offer a reasonable balance between cost and clinical efficacy.
- Cost-effectiveness of b/tDMARDs was sensitive to changes in drug pricing in scenario analysis. Therefore, It is **recommended to engage in price negotiations** with pharmaceutical companies to reduce the drug price of TNF-alpha, B-cell and JAK inhibitors when considering their inclusion in the publicly funded healthcare program for RA in India.
- To alleviate the burden due to RA, it is crucial to develop comprehensive approaches to **ensure financial risk protection for RA patients** in India.
- Healthcare providers should be trained to offer evidence-based treatment options to improve the health-related quality of life, particularly focusing on **pain and anxiety management** to enhance overall health outcomes.

