

# **Adalimumab, etanercept, infliximab, certolizumab pegol, golimumab, tocilizumab and abatacept for the treatment of rheumatoid arthritis not previously treated with disease-modifying antirheumatic drugs and after the failure of conventional disease-modifying antirheumatic drugs only: systematic review and economic evaluation**

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## Plain English summary

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# Plain English summary

## Review question

The clinical effectiveness and cost-effectiveness of biologic disease-modifying antirheumatic drugs (bDMARDs) compared with conventional disease-modifying antirheumatic drugs (cDMARDs) in individuals with rheumatoid arthritis was assessed.

## Background

Rheumatoid arthritis is associated with significant morbidity. bDMARDs are more efficacious than cDMARDs, but are considerably more expensive.

## Work undertaken

A systematic review of randomised controlled trials of efficacy was undertaken. Network meta-analyses were undertaken to ensure coherent results regarding efficacy. Interrogation of an observational database was performed to provide data on disease progression when treated with cDMARDs. A mathematical model was constructed to estimate the incremental cost per quality-adjusted life-year (QALY).

## Key results

Fifty-two clinical trials provided data on American College of Rheumatology and/or European League Against Rheumatism responses for bDMARDs (38 in the main analyses and 14 for sensitivity analyses). These data were synthesised to produce coherent results. bDMARDs were shown to be more effective than cDMARDs. The interrogation of the database indicated that historical assumptions regarding disease progression while on cDMARDs were far too pessimistic. Results from the cost-effectiveness analyses indicated typical cost per QALY of  $\geq$  £40,000. These are higher than values reported by the National Institute for Health and Care Excellence as thresholds for an intervention to be considered cost-effective.



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