rituximab, following the failure of one previous TNF inhibitor. Upon treatment failure it was assumed patients would follow an identical lifetime treatment strategy consisting of: leflunomide, gold, cyclosporine and palliative care. As is currently recommended by NICE no second TNF inhibitor was assumed to be administered. Rituximab was assumed to be administered every 9 months for responding patients. ACR response rates were taken from the respective phase III RCTs and adjusted for placebo response. The initial HAQ drop by ACR category was taken from the REFLEX RCT, with long-term HAQ progression from published literature. RESULTS: Annual drug acquisition and administration costs were lower for rituximab compared to abatacept. Discounted total lifetime direct NHS costs were £46,570 and £63,055 for the rituximab and abatacept groups respectively. Rituximab generated a discounted cost-saving of £16,485 per patient due to reduced drug acquisition and administration costs. Total QALYs were estimated as 3.879 and 3.812 for rituximab and abatacept, respectively. Rituximab generated a discounted cost-saving of £46,570 and £63,055 for the rituximab and abatacept groups respectively. Discounted total lifetime direct NHS costs were £46,570 and £63,055 for the rituximab and abatacept groups respectively. Rituximab generated a discounted cost-saving of £16,485 per patient due to reduced drug acquisition and administration costs. Total QALYs were estimated as 3.879 and 3.812 for rituximab and abatacept, respectively. CONCLUSION: The model predicted that rituximab dominated abatacept for RA patients who have failed one previous TNF inhibitor therapy, with higher estimated QALYs and lower NHS costs. Due to lower drug administration requirements rituximab may also generate a capacity benefit to the NHS compared with abatacept, through lower annual infusion and outpatient requirements.

**PAR23**

**COST-UTILITY OF ABATACEPT, A NEW BIOLOGIC TREATMENT FOR PATIENTS WITH RHEUMATOID ARTHRITIS WHO FAILED ANTI-TNF THERAPY**

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**OBJECTIVES:** Rheumatoid arthritis (RA) is a chronic autoimmune disorder associated with substantial health and economic burden. We describe a cost-utility model developed to assess the cost-utility of Abatacept in the treatment of RA in the UK (NHS).

**METHODS:** A probabilistic patient level simulation model was developed to estimate long-term costs and health outcomes of abatacept versus methotrexate (MTX) in RA patients who failed anti-TNF therapy. The model predicted patients’ HAQ (Health Assessment Questionnaire) scores over time based on the initial response to treatment (% change in HAQ at six months). Patients with an inadequate response (failure to achieve a specified reduction in HAQ score) ended treatment at this point. Responding patients continued treatment with a reduced rate of HAQ progression until long-term treatment failure—modelled as an exponential process. On long term treatment failure, patients’ HAQ was assumed to worsen by amount equal to their initial improvement. Efficacy and adverse events rates were obtained from a randomized clinical trial. Costs, utility and annual mortality rates (AMR) were estimated as a function of HAQ.

**RESULTS:** Compared to MTX, Abatacept treatment results in 1.6 additional QALYs at an additional cost of £40,371, giving an ICER of £25,395/QALY, a value in line with other biologic treatments recommended for use in the UK. Results were stable under a range of sensitivity analyses. CONCLUSION: Compared to MTX, Abatacept is a cost-effective treatment for patients who failed anti-TNF therapy. The use of a patient level simulation allows costs and utilities to be estimated as non-linear functions of HAQ and for the AMR to be conditioned on patient’s HAQ scores. The model was implemented in R and was sufficiently fast for probabilistic analysis. This allowed two key requirements for decision-making to be met: unbiased estimates of costs and effects and an assessment of the decision uncertainty.