



Title	Etanercept, Infliximab and Adalimumab for the Treatment of Psoriatic Arthritis: A Systematic Review and Economic Evaluation
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Aim

To determine the clinical effectiveness, safety, and cost effectiveness of etanercept, infliximab, and adalimumab in treating active and progressive psoriatic arthritis (PsA) in patients who respond inadequately to standard treatment (including disease-modifying antirheumatic drugs).

Conclusions and results

Pooled estimates of effect demonstrated a significant improvement in patients with PsA for all joint disease and functional status outcomes at 12 to 14 weeks' follow-up. Biologic treatment significantly reduced joint symptoms for etanercept (relative risk [RR] 2.60, 95% confidence interval [CI] 1.96 to 3.45), infliximab (RR 3.44, 95% CI 2.53 to 4.69) and adalimumab (RR 2.24, 95% CI 1.74 to 2.88), with 24-week data demonstrating maintained treatment effects. Trial data demonstrated a significant effect of all 3 biologics on skin disease at 12 or 24 weeks. Evidence synthesis showed that infliximab appeared to be most effective across all outcomes of joint and skin disease. The response in joint disease was greater with etanercept than with adalimumab, whereas the response in skin disease was greater with adalimumab than with etanercept, but the differences are not statistically significant. Under base-case assumptions, etanercept was the most likely cost-effective strategy for patients with PsA and mild-to-moderate psoriasis if the threshold for cost effectiveness was 20 000 pounds sterling (GBP) or GBP 30 000 per QALY. All biologics had a similar probability of being cost effective for patients with PsA and moderate-to-severe psoriasis at a threshold of GBP 20 000 per QALY. The data indicated that etanercept, infliximab, and adalimumab were efficacious in treating PsA compared to placebo, with beneficial effects on joint symptoms, functional status, and skin. Short-term data suggested that these biologic agents can delay joint disease progression and evidence to support their use in treating PsA is convincing. Future research would benefit from long-term observational studies with large samples of patients with PsA to demonstrate that beneficial ef-

fects are maintained, along with further monitoring of the safety profiles of the biologic agents.

Recommendations

Long-term observational studies with large samples of PsA patients are required to demonstrate that beneficial effects for joint and skin disease and improvement of function are maintained. In particular, data on the effects of joint disease progression and long-term Health Assessment Questionnaire progression while responding to biologic agents and health-related quality of life are required. Withdrawal rates due to lack of efficacy and adverse events should also be reported.

Methods

The evidence on clinical efficacy, safety, and cost effectiveness of etanercept, infliximab, and adalimumab in treating PsA was systematically reviewed. Ten electronic databases (eg, MEDLINE, EMBASE, and the Cochrane Central Register of Controlled Trials) were systematically searched for data up to June 2009. Industry submissions were searched for additional unpublished data. Randomized controlled trials (RCTs) (including open-label extensions) were included in the evaluation of efficacy. Safety data were sought from RCTs and observational studies reporting serious adverse events (eg, infections, malignancies, and tuberculosis activation) for a minimum of 500 patients in any indication receiving one or more of the biologic agents of interest.

Further research/reviews required

See Executive Summary www.hta.ac.uk/project/2053.asp.