Enzyme-linked immunosorbent assays for monitoring TNF-alpha inhibitors and antibody levels in people with rheumatoid arthritis: a systematic review and economic evaluation

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Plain English summary

TNF-alpha inhibitors and antibodies in rheumatoid arthritis

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Rheumatoid arthritis is a long-term condition that causes pain, swelling and stiffness in the joints. People with severe disease may be treated with drugs called tumour necrosis factor-α inhibitors [adalimumab (Humira®; AbbVie Inc., North Chicago, IL, USA), etanercept (Enbrel®; Pfizer, Inc., New York, NY, USA), infliximab (Remicade®; Merck Sharp & Dohme Limited, Hoddesdon, UK), certolizumab pegol (Cimzia®; UCB Pharma Limited, Slough, UK) and golimumab (Simponi®; Merck Sharp & Dohme Limited)]. Some people taking these drugs find that their disease improves, whereas others do not respond to the treatment or improve initially and then experience loss of response. One cause of lost response is that individuals develop antibodies (i.e. protective proteins) against the drug, which hamper the effect of treatment.

Various tests have been developed to measure the level of drugs and antibodies against these drugs in patient's blood samples. This kind of monitoring would allow treatment to be adjusted in response to the test outcomes to optimise benefit for the patient, and help clinicians to better understand the reasons for an absence or a loss of response to treatment.

The aim of this study was to find out whether or not it would be clinically effective (i.e. good for patients) and cost-effective (i.e. a good use of NHS resources) to use these tests for monitoring drug and antibody levels, as a means of assessing treatment response in rheumatoid arthritis patients who are controlled, have not responded or have lost response.

Results from a systematic review showed that, because of the limited and poor-quality evidence, there was much uncertainty in the clinical effectiveness of testing. A simple mathematical model drew on evidence from one poorly reported study, which was heavily supplemented by data from other studies and expert advice. Results from the model were inconclusive and suggest that there is considerable uncertainty in the cost-effectiveness of testing.

Therefore, the results presented here should be considered with caution. Further studies are needed to assess the impact of tumour necrosis factor testing in patients with rheumatoid arthritis.

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This report

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