Infliximab versus alpha interferon in the treatment of Behçet's disease: the BIO BEHÇET'S RCT

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Plain language summary

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Behçet syndrome, a very rare disease in the UK, causes major illness. Yet without high-quality, randomised, controlled trials, choosing treatment is somewhat hit and miss. We set up a randomised controlled clinical trial to study the two most widely used biologic drugs in Behçet syndrome, infliximab and Roferon, head-to-head and searched for potential blood and urinary markers for response.

Patients with active Behçet syndrome, in the United Kingdom national Behçet syndrome centres and allied clinics, who had not responded to or could not tolerate first-line treatment were randomised to either infliximab infusions or Roferon injections. The primary outcome was modified Behçet's disease activity index at 12 weeks of therapy. Secondary outcomes included modified Behçet's disease activity index at 24 weeks and significant improvements in individual organs, quality of life and Physician's Global Assessments of activity at 12 and 24 weeks. Initial assessment suggested 100 patients were required for a statistically meaningful outcome but was revised down to 80 following recommendations to shorten the trial.

In this first prospective head-to-head randomised controlled clinical trial of two biologics in Behçet syndrome, both drugs worked equally well. There was a non-significant trend for minor benefits of infliximab in terms of tolerability and treatment persistence. Genetic data suggested a potential association between patient outcome and carriage of either rs4803221 or rs7248668 variants in the interferon lambda 3 (interleukin 28B) gene locus in the Roferon arm, but statistical significance was lost with the relatively small sample size. Metabolomics analysis identified potential markers of a metabolic response to infliximab.

The limitations of the study included the single-masked design: patients (but not clinicians) were aware of their treatment, and fewer patients were studied than planned. This limited the strength of analysis for secondary outcomes and mechanistic studies. We now plan to characterise the metabolite(s) from existing samples to design future trials to study if there can be effective targeting of treatment in Behçet syndrome.

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