Rituximab for the treatment of fatigue in primary biliary cholangitis (formerly primary biliary cirrhosis): a randomised controlled trial

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Plain English summary

The RITPBC trial

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Plain English summary

Primary biliary cholangitis [formerly primary biliary cirrhosis (PBC)] is a liver disease, and approximately half of the patients with this disease experience fatigue as one of the symptoms, which can significantly affect their quality of life. PBC patients have antibodies (which are molecules produced by their immune system), namely anti-mitochondrial antibodies. Mitochondria are parts of human cells in which energy-producing reactions take place. Studies have shown that abnormalities in the muscle energy regulation in fatigued PBC patients are linked to these antibodies. Rituximab (MabThera®, Roche Products Ltd) is a drug that works against these antibodies. This drug has been in use in other conditions for over two decades. Data from pilot studies using rituximab in fatigued PBC patients suggested some beneficial effects of the drug in symptom improvement. Based on this background, we designed a trial to assess whether or not rituximab improved moderate or severe fatigue in patients with PBC. We monitored safety and the tolerability of rituximab in patients with PBC. Fifty-seven adult participants (aged $\geq$ 18 years) with PBC and moderate or severe fatigue (assessed using a PBC-40 fatigue questionnaire) were recruited into the trial. They were randomised to receive either rituximab infusion (trial drug) or saline infusion (placebo) on two occasions. They were then followed up over a period of 12 months. Analysis of the results showed no significant difference in fatigue score at 3 months (primary outcome) between the rituximab and placebo groups. There was also little difference in any of the secondary outcomes between groups, although anaerobic threshold (a quantitative measure of exercise) improved significantly in the rituximab group compared with the placebo group. A suggestive improvement in some liver tests was observed. Rituximab was found to be safe, with no serious adverse events reported in the patients who received the drug. We concluded that rituximab is ineffective for the treatment of fatigue in unselected PBC patients.

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