

Short-term biologic treatment does not affect immune response to vaccination

Patients with rheumatoid arthritis should be up to date with routine vaccinations before beginning treatment with biologic medicines.

INTRODUCTION

Rheumatoid arthritis is a chronic inflammatory disease that affects a person's joints, causing pain and disability. Patients with rheumatoid arthritis naturally have an increased risk of developing infections due to the underlying disease, as well as some of the medicines that are used to treat it. Making sure that patients receive vaccinations to prevent against infections is very important. But some medicines called biologic disease-modifying antirheumatic drugs (bDMARDs) that are used to treat rheumatoid arthritis may affect how a person's immune system responds to vaccination (their immune response), and may mean that people are not properly protected by the vaccine.

Vaccines may be live or non-live. Live vaccines are made from living organisms or viruses that have been altered so they cannot cause illness, but they can still replicate. Non-live vaccines used killed organisms or viruses, or certain parts of their structure.

WHAT DID THE AUTHORS HOPE TO FIND?

Before this study there was limited information available about the use of vaccines in people with rheumatoid arthritis who were receiving tocilizumab, a bDMARD that blocks the inflammatory effects of a molecule called interleukin-6. The authors hoped to improve understanding by comparing the immune responses to vaccines in people receiving tocilizumab plus another drug called methotrexate compared to those who were treated with only methotrexate on its own.

WHO WAS STUDIED?

The study included 91 people with rheumatoid arthritis. All patients were aged between 18–64 years, had been diagnosed with rheumatoid arthritis for at least 6 months and had not seen an improvement with another group of bDMARDs called TNF inhibitors. All patients were already taking methotrexate.

HOW WAS THE STUDY CONDUCTED?

This was an open-label, randomised clinical trial, which means that patients were assigned by chance to one of two treatment groups to receive either tocilizumab plus methotrexate or methotrexate on its own. Using chance in this way means that the groups will be similar and will allow the variable or treatment under investigation to be compared objectively. During the treatment both patients and their doctors knew which group they were in.

After 3 weeks, the participants in each group were given two non-live vaccines: one against pneumococcal pneumonia and one against tetanus. Blood samples were taken before the vaccinations and 5 weeks later to measure how well the immune system had responded.

WHAT WERE THE MAIN FINDINGS OF THE STUDY?

The study found that overall there were no differences between the two groups in their response to either the pneumonia vaccine or the tetanus vaccine.

ARE THESE FINDINGS NEW?

Yes, this is the first controlled study to evaluate the effect of tocilizumab on patients' immune responses to routine vaccines.

HOW RELIABLE ARE THE FINDINGS?

When patients on tocilizumab were vaccinated, they had only received one dose of the tocilizumab beforehand. It is possible that longer treatment would have shown different results. These studies were done using non-living vaccines, and the results cannot be expanded to live vaccines. Live organism vaccines have not been studied and should not be given to people who are receiving bDMARDs, including tocilizumab.

WHAT DO THE AUTHORS PLAN ON DOING WITH THIS INFORMATION?

These studies suggest that short-term exposure to tocilizumab does not affect vaccine responses, but the authors recommend that vaccines are given before the biologic therapy is started according to local guidelines. No additional studies are planned.

WHAT DOES THIS MEAN FOR ME?

If possible, people with rheumatoid arthritis should receive routine vaccines before starting treatment with a bDMARD. It is important to tell your doctor that you are receiving a bDMARD if you go for any vaccinations. People with rheumatoid arthritis can continue to receive non-live vaccinations even when they are taking tocilizumab, but live vaccines should be avoided.

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Date summary prepared: June 2015

Summary based on research article published on: 21st January 2014

From: Bingham, C. *et al.* Humoral immune response to vaccines in patients with rheumatoid arthritis treated with tocilizumab: results of a randomised controlled trial (VISARA). *Ann Rheum Dis* 2015;74:818–22. doi:10.1136/annrheumdis-2013-204427LaySummary

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