

# Studies reveal how shingles vaccine should be used in arthritis patients

28 August 2017

New research indicates that the live varicella-zoster vaccine—which is given to protect against shingles—elicits robust immune responses in patients when administered several weeks prior to the start of treatment with the arthritis drug tofacitinib. The *Arthritis & Rheumatology* findings are encouraging because patients with rheumatoid arthritis have a higher risk of developing shingles than other adults, and tofacitinib and certain other disease-modifying antirheumatic drugs are thought to further increase this risk. Importantly, however, the virus should not be given to patients who have not had the chicken pox in the past.

Kevin Winthrop MD, MPH of the Oregon Health and Science University and his colleagues conducted the research, which consisted of two studies. In one study, 112 patients with active rheumatoid [arthritis](#) were vaccinated and then randomized to receive either tofacitinib (a Janus kinase inhibitor) or placebo, initiated 2-3 weeks post-vaccination.

Patients developed robust immune responses to the [vaccine](#), and the start of tofacitinib after vaccination had no negative impact on the established immune response. In fact, patients treated with tofacitinib had similar or even higher immune responses to the vaccine compared with placebo-treated patients, perhaps because they had better control of their rheumatoid arthritis.

"We showed that the vaccine was adequately immunogenic in patients whether they were starting tofacitinib or placebo in a few weeks, and the immunogenicity and the response to the vaccine were similar to what we've seen outside the rheumatoid arthritis setting in general population studies," said Dr. Winthrop.

One patient experienced disseminated varicella infection after starting tofacitinib. The investigators discovered that this patient was the sole participant who did not have [chicken pox](#) in the past. The

finding emphasizes the importance of only giving the vaccine to patients who have had chicken pox because shingles arises when the [chicken pox virus](#) that remains dormant in the body is reactivated. Arthritis drugs that suppress the immune system put patients at an elevated risk of disseminated varicella infection following vaccination.

The second study by the group looked to see if concomitant use of what are called conventional synthetic disease-modifying antirheumatic drugs (csDMARDs, such as methotrexate and chloroquine) or corticosteroids contribute to the increased risk of shingles linked to tofacitinib. The study involved an analysis of 19 clinical trials involving a total of 6192 patients with rheumatoid arthritis.

Shingles rates were lowest for patients taking tofacitinib without csDMARDs or corticosteroids and highest for those taking tofacitinib with csDMARDs and corticosteroids. The investigators noted that similar efficacy has been observed with tofacitinib in phase III clinical studies regardless of whether it is administered as monotherapy or in combination with csDMARDs and/or corticosteroids. Therefore, the use of tofacitinib alone for the treatment of rheumatoid arthritis should be considered to help reduce the risk of shingles in vaccinated patients, provided that the patient's arthritis remains controlled on the drug.

"If you want to lower shingles risk for [rheumatoid arthritis](#) patients, there are two strategies: one is vaccinating them and the other is getting them off steroids and methotrexate if you can," said Dr. Winthrop.

**More information:** "The Safety and Immunogenicity of Live Zoster Vaccination in Rheumatoid Arthritis Patients Before Starting Tofacitinib: A Randomized Phase II Trial." *Arthritis & Rheumatology* (2017). [DOI: 10.1002/art.40187](https://doi.org/10.1002/art.40187)

Provided by Wiley

APA citation: Studies reveal how shingles vaccine should be used in arthritis patients (2017, August 28) retrieved 15 November 2019 from <https://medicalxpress.com/news/2017-08-reveal-shingles-vaccine-arthritis-patients.html>

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