

Tuberculosis screening needed for methotrexate users in at-risk locales

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New research presented at ACR Convergence, the American College of Rheumatology's annual meeting, shows that tuberculosis (TB) screening and ongoing clinical care is needed for people on methotrexate who live in areas where the highly infectious illness is common. Methotrexate users who also take corticosteroids or other immunosuppressant therapies are at particular risk and need adequate TB screening (ABSTRACT #0223).

Methotrexate is one of the most effective and commonly used medications in the treatment of rheumatoid arthritis and other forms of inflammatory arthritis in both adults and children. Methotrexate is part of a group of arthritis treatments called disease-modifying antirheumatic drugs (DMARDs).

Methotrexate effectively control [rheumatic diseases](#) and more people around the world are being prescribed this treatment. In many areas, TB is endemic and a serious health risk for local populations. Since methotrexate suppresses a person's immune system, the researchers wanted

to know if they are at increased risk of TB infection. Current guidelines for the management of rheumatic diseases do not address TB risk for people who take methotrexate. To learn more, researchers in Canada conducted a [systematic review](#) of published literature on TB rates among people who take less than 30 milligrams of methotrexate per week.

"Methotrexate is the foundation medication for treatment of many rheumatic diseases, especially rheumatoid arthritis (RA). Our concern is that methotrexate can affect cell-mediated immunity, which may increase susceptibility to infections, including tuberculosis," says the study's co-author, Carol Hitchon, MD, Associate Professor of Medicine at the University of Manitoba. "TB is endemic across Africa and other parts of the world. Existing guidelines do not address the possible increased risk of TB in these areas. As one step in developing recommendations for the use of methotrexate intended for these areas, we wanted to review the literature on methotrexate use, and the incidence and new diagnosis of TB in people taking methotrexate."

The researchers reviewed published studies from January 1990 to May 2018 that contained the words methotrexate and tuberculosis, as well as citations from review articles. They identified titles, abstracts or full manuscripts from 4,707 different reports, which were then independently screened to pull out studies on TB in patients taking methotrexate. They collected data on TB incidence, or new TB diagnosis versus reactivation of latent TB infection; TB outcomes, such as pulmonary symptoms, dissemination and death; and the safety of isoniazid, the antibiotic used to treat TB. After removing duplicates and studies with insufficient information, 31 moderate-quality studies were used for the review. Only 27% reported data from low to moderate human development index countries.

Based on the case control studies, the review

showed that there is a modest increased risk of TB for patients on methotrexate, and that rates of TB in people with rheumatic disease who are treated with either methotrexate or biologic drugs are generally higher than the general population. Two cohort studies reported TB incidence in Moldova and China, where the disease is endemic. They showed 12 TB cases in 44 patients in Moldova and nine cases in 114 patients in China. Based on other studies on TB infection rates in countries like Spain, South Africa and Canada, the researchers found that infection rates were higher if patients were prescribed methotrexate along with corticosteroids or other immunosuppressants. They also found that methotrexate users had higher rates of TB that was extra-pulmonary, or disease that spreads beyond a patient's lungs, compared to the general population.

Five studies from China, the U.S., Japan and Belgium all evaluated the safety of using methotrexate and isoniazid together. Based on this data, the researchers found that isoniazid-related liver toxicity and neutropenia, or low white blood cell count, were more common when people took the antibiotic along with methotrexate, but these effects were usually reversible.

"This work has important implications for physicians using methotrexate in areas of the world with high rates of TB and for travelers returning from regions with high TB rates," says Dr. Hitchon. "TB reactivation should be considered for anyone with possible prior TB exposure. This is especially true for patients who are also on steroids. Overlapping toxicity profiles, such as liver toxicity, for [methotrexate](#) with TB treatments indicate a need for close monitoring."

More information: [acrabstracts.org/abstract/safe... and-tuberculosis-tb/](https://acrabstracts.org/abstract/safe-...-and-tuberculosis-tb/)

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