

Many with lupus at high risk for adverse reactions to pneumocystis pneumonia drug

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New research shows that adults with systemic lupus erythematosus, who receive trimethoprim-sulfamethoxazole (TMP-SMX), a prophylactic therapy to help prevent pneumocystis pneumonia, are at high risk for adverse reactions to the drug, particularly if they are also positive for anti-Smith (anti-Sm) antibodies. Details of the study was presented at ACR Convergence, the American College of Rheumatology's annual meeting (ABSTRACT #1830).

Systemic lupus erythematosus, referred to as SLE or lupus, is a chronic (long-term) [disease](#) that causes systemic inflammation which affects multiple organs. In addition to affecting the skin and joints, it can affect other organs in the body such as the kidneys, the pleura [tissue](#) lining the lungs, or the heart and brain. Many patients with lupus experience fatigue, weight loss and fever.

Pneumocystis [pneumonia](#), is an infection that can be life-threatening for people whose immune systems are suppressed by medications for [autoimmune diseases](#), including connective tissue diseases. These patients may be treated with

drugs like steroids or other immunosuppressants. One way to help prevent [pneumocystis](#) pneumonia infection is prophylactic treatment with the [drug](#) TMP-SMX, which is an antibiotic used to treat a variety of bacterial infections. It is effective but can cause [adverse drug reactions](#) in people with connective tissue diseases, and past research shows that people with SLE are at especially high risk for these serious reactions to the drug.

"Patients with moderate to severe SLE usually require a high dose of corticosteroid and various types of immunosuppressants, creating a risk of developing pneumocystis pneumonia," says the study's co-author, Shinji Izuka, MD, a rheumatologist and researcher at the National Centre for Global Health and Medicine in Tokyo. "Unlike patients with HIV, who are also at high risk of pneumocystis pneumonia, patients with connective tissue diseases such as SLE are at risk for fatality when developing this infection so prophylaxis is important. Moreover, due to the COVID-19 pandemic, it is important to prevent pneumocystis pneumonia for patients on immunosuppressants, because the symptoms and image findings are similar to COVID-19. Fortunately, TMP-SMX can prevent pneumocystis pneumonia effectively."

Because past studies suggested that lupus patients were at higher risk of [adverse reactions](#) to the drug, Dr. Izuka's group launched this study to confirm the risk and discover any specific risk factors. among people with SLE and other connective tissue diseases.

The researchers examined their hospital's in-patient database for records of patients with connective tissue diseases who were administered TMP-SMX as a prophylactic agent against pneumocystis pneumonia between January 2009 and April 2020. The baseline data was obtained at the time that TMP-SMX was started. They excluded patients with HIV and anyone who did not suffer adverse drug

reactions within one month. They compared adverse reaction prevalence between people with lupus and those with other connective tissue diseases and also analyzed the data for any specific risk factors in lupus patients.

The 427 patients in the study included 164 with lupus, while the rest had another connective tissue disease, such as polymyositis or dermatomyositis, Sjögren's syndrome, systemic sclerosis, mixed connective tissue disease and different forms of vasculitis. Forty, or 9.4%, of patients developed an adverse drug reaction to TMP-SMX, including 10 with thrombocytopenia, nine with skin rash, seven with a liver function test abnormality, seven with fever, and 12 with other reactions.

People with lupus were more likely to have an adverse drug reaction: 13.4% compared to 6.9% in the control group patients. Their odds ratio of developing an adverse drug reaction was 2.12. When the researchers performed univariate analysis to look for risk factors, they found that lupus patients with anti-Sm, anti-RNP and anti-Ro/SS-A antibodies were significantly associated with higher risk of an adverse drug reaction. Then, they performed multivariate analysis and found that only anti-Sm antibodies was significantly associated with higher risk in people with lupus.

Due to these increased risks, patients with SLE who receive prophylactic TMP-SMX should be carefully monitored for any adverse reaction to the drug, especially those with anti-Sm antibodies, the researchers concluded.

"In these cases, it might be better to choose other options," says Dr. Izuka. "The important thing is, however, that there were no patients in our study who developed severe conditions, such as Stevens-Johnson syndrome, due to adverse drug reactions to TMP-SMX. We should not hesitate to initiate TMP-SMX for those who require it. The mechanisms of the association between adverse drug reactions and anti-Sm antibody remains unclear. Further study to identify them and other unrevealed factors is needed. Also, we should clarify the best way to prevent pneumocystis pneumonia for SLE [patients](#) with anti-Sm antibody and other autoantibodies for safety and efficacy."

More information: acrabstracts.org/abstract/adverse-drug-reactions-in-lupus-patients-taking-tmp-smx-antibodies-are-associated-with-higher-risk-of-adverse-drug-reactions

Provided by American College of Rheumatology

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