

# Combination antibiotics effective against chlamydia-induced arthritis

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Dr. John D. Carter of the University of South Florida College of Medicine led the NIH multicenter trial investigating combination antibiotics for Chlamydia-induced arthritis. Credit: © University of South Florida

Combination antibiotics effectively treat Chlamydia-induced reactive arthritis - a major step toward management, and possibly cure, of this disease, a federal multicenter clinical trial led by the University of South Florida College of Medicine found.

The trial, sponsored by the National Institute of Musculoskeletal and Skin Diseases, is reported in the May 2010 issue of *Arthritis and Rheumatism*, a journal of the American College of Rheumatology. The paper is accompanied by an editorial in which an internationally-recognized research group from Germany calls the study results

"impressive."

"Our findings lend hope that eradication of this persistent infection is attainable and a possible cure exists," said John D. Carter, MD, associate professor of medicine in the USF Health Division of Rheumatology and lead author of the study.

Reactive arthritis (ReA), also known as Reiter's syndrome, is an autoimmune disorder that develops in response to an infection elsewhere in the body. This type of arthritis is most commonly caused by the bacteria [Chlamydia trachomatis](#), usually acquired through sexual contact, or *Chlamydia pneumoniae*, which can trigger [respiratory infection](#). The organism migrates from the initial site of infection - typically the genitourinary or respiratory tract - through the blood to the joint tissue. Pain and swelling in the sacroiliac joints, knees, ankles and feet are common.

Data suggests that the incidence of ReA rivals or even surpasses that of [rheumatoid arthritis](#) (an estimated 125,000 new cases a year), Dr. Carter said, but less is known about ReA, which is often misdiagnosed.

Most people recover fully from the initial flare-up of arthritis symptoms, but about 20 percent of those with ReA experience long-lasting symptoms. Studies have shown that the presence of metabolically-active *Chlamydia* in the joints of these individuals causes inflammation even years after the initial infection. That begged the question: could antibiotics treat *Chlamydia*-induced ReA? Previous clinical trials with single antibiotics were negative or failed to demonstrate any definitive effect.

A nine-month study by Dr. Carter and colleagues, published in 2004 in the *Journal of Rheumatology*, was the first to compare combination antibiotic therapy (doxycycline and rifampin) with monotherapy

(doxycycline only). It showed a dramatic response to the combination in patients with Chlamydia-induced arthritis.

Based on these promising early results, the USF-led research team devised a new prolonged course of combination antibiotic treatment, which attacked two different pathways allowing Chlamydia infection to persist in the joints.

In the latest double-blind, placebo-controlled multicenter trial, 42 patients were randomly assigned to one of three treatment groups -- rifampin plus doxycycline, rifampin plus azithromycin, or placebo. All the patients tested positive for Chlamydia trachomatis or [Chlamydia pneumoniae](#). They received combination antibiotics or placebo for six months and were followed for three months post-treatment.

Patients treated with the combination antibiotics improved significantly more in measures of the swelling and tenderness of joints and symptom assessment. In fact, the researchers report, 22 percent of patients receiving combination antibiotics experienced complete remission of ReA, while none in the placebo group did. Significantly more patients receiving combination antibiotics tested negative for [Chlamydia](#) bacteria in their blood or joint tissue following treatment. Adverse side effects, mostly gastrointestinal, were mild.

In an editorial appearing in the same issue as the USF-led study, Dr. Markus Rihl of Hannover Medical School in Germany writes, "the positive results using combination antibiotics are very promising to open a new way of treatment not only for Chlamydia-induced ReA but also for Chlamydia-induced spondylarthritis."

The editorial states the approach warrants further study to elucidate which antibiotic combination, dosing, and duration of therapy is most effective while minimizing the risk of bacterial resistance.

**More information:**

Article: "Combination Antibiotics as a Treatment for Chronic Chlamydia-Induced Reactive Arthritis." J. D. Carter, L. R. Espinoza, R. D. Inman, K. B. Sneed, L. R. Ricca, F. B. Vasey, J. Valeriano, J. A. Stanich, C. Oszust, H. C. Gerard, and A. P. Hudson. *Arthritis & Rheumatism*; Published Online: April 29, 2010; Print Issue Date: May 2010.

Editorial: "Combination Antibiotics for Chlamydia-Induced Arthritis: Breakthrough to a Cure?" Markus Rihl, Jens G. Kuipers, Lars Kohler, Henning Zeidler. *Arthritis & Rheumatism*; Published Online: April 29, 2010; Print Issue Date: May 2010.

Provided by University of South Florida

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