

## Children with juvenile arthritis have higher rates of bacterial infection

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Children with juvenile idiopathic arthritis (JIA) have higher rates of hospitalized bacterial infection than children without JIA according to an observational study appearing in *Arthritis & Rheumatism*, a journal published by Wiley-Blackwell on behalf of the American College of Rheumatology (ACR). The findings show that the risk of infection among JIA patients was significantly increased with use of high-dose glucocorticoids (steroids). Methotrexate (MTX) and tumor necrosis factor alpha (TNF) inhibitors were not found to increase infection risk in this pediatric population.

Arthritis is an inflammation of the joints that causes pain, swelling, stiffness and can lead to disability. JIA refers to chronic <u>arthritis</u> diseases that attack young patients and the ACR estimates close to 300,000 children in the U.S are affected. While immunosuppressant therapies such as steroids, MTX, and TNF inhibitors are used to treat JIA, it is unclear how they impact infection risk.

To compare bacterial infection incidence in children with and without JIA, a research team led by Dr. Timothy Beukelman from the University of Alabama at Birmingham used U.S. Medicaid data from 2000 to 2005. The team identified 8,479 JIA patients with 13,003 person-years of follow-up and a group of 360,489 children with attention-deficit hyperactivity disorder (ADHD) for comparison. Pharmacy claims were used to determine exposure to MTX, TNF inhibitors, and oral steroid medications. Infections were identified using hospital discharge diagnoses.



Researchers determined that 42% of JIA patients used MTX and 17% used TNF inhibitors to manage their disease. JIA patients without current exposure to MTX or TNF inhibitors had an increased rate of bacterial infection compared to patients with ADHD, even after adjusting for steroid use. "Patients with JIA who were not currently treated with MTX or TNF inhibitors had a 2-fold increase in hospitalized bacterial infection rates compared to children without arthritis," explains Dr. Beukelman, "This finding suggests the inflammatory or autoimmune process may predispose children to infection regardless of therapy."

Among children with JIA, the rate of infection associated with MTX or TNF inhibitor use was similar. After adjusting for MTX and TNF inhibitor use among children with JIA, high-dose steroid use—10 mg or more of prednisone daily—more than doubled the rate of subsequent infection compared to patients not taking steroids. Dr. Beukelman concludes, "A steroid-sparing treatment strategy may reduce the risk of serious infection in children with JIA."

**More information:** *Arthritis & Rheumatism*; Published Online: May 1, 2012 DOI: 10.1002/art.34458

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