

# TNF inhibitors don't appear to increase malignancy risk in juvenile arthritis patients

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Tumor necrosis factor inhibitors, a group of biologic drugs used to treat children with juvenile idiopathic arthritis, are not associated with a significantly increased risk of cancer, according to new research findings presented this week at the American College of Rheumatology Annual Scientific Meeting in Washington.

Juvenile idiopathic arthritis (JIA) is a systemic, chronic disease that produces joint inflammation and may also cause fevers, rashes and eye inflammation. Children and adolescents with JIA need to see a pediatric rheumatologist to treat their symptoms, control inflammation and prevent joint or organ damage.

Treatment with [tumor necrosis factor](#) inhibitors (TNFi) has been linked to a possible increased risk of [malignancy](#) in other conditions, but this association is uncertain, especially in JIA. So researchers at the University of Alabama at Birmingham studied cancer rates of JIA patients who were treated with TNFi compared to [children](#) with JIA who were treated differently.

"TNFi are highly effective and have greatly improved disease outcomes for most children with JIA. Nevertheless, lingering concerns about a possible increased risk of malignancy may limit the use of TNFi in clinical practice," said Timothy Beukelman, MD, MSCE, Associate Professor of Pediatrics in the Division of Rheumatology at the University of Alabama at Birmingham and a lead author of the study.

The researchers used physician diagnosis codes and medication prescriptions from U.S. Medicaid claims from 2000-2010 and U.S. MarketScan claims from 2010-2014 to identify JIA patients. They also examined children with attention-deficit hyperactivity disorder (ADHD) as a check on their ability to accurately identify cancers in the claims data. Children who had previously been diagnosed with a malignancy prior to follow-up were excluded. Use of any JIA medications ever was determined and categorized into methotrexate, TNFi, and other.

Malignancies were identified through diagnosis and treatment codes. They calculated expected cancer rates using SEER cancer surveillance data according to the age, sex and race of the patient cohorts, and calculated standardized incidence ratios (SIR) for the observed cancer outcomes compared to those SEER estimates.

The investigators identified 27,621 children with JIA. Among all children with JIA, there were 20 incident malignancies with a corresponding SIR of 2.4 [1.5-3.7]. Among children who did not receive treatment with methotrexate, TNFi or other medications, the SIR was 2.4 [1.1-4.5]. The investigators identified seven incident malignancies in 15,220 person-years of observation following any use of TNFi; the corresponding SIR was 2.9 [1.2-6.0]. The investigators reported that their approach to identifying malignancies was accurate, because the SIR for children with ADHD was 1.03 [0.96-1.11]. They also concluded that use of TNFi was not associated with a significantly increased risk of incident malignancy in children with JIA.

"These findings suggest that TNFi are not associated with a significantly increased risk of malignancy in children with JIA," said Dr. Beukelman. "Similar results have been reported in several large studies of adults with rheumatoid arthritis. Because childhood malignancy is very rare, it is difficult to attain the final, definitive answer, but I believe that the initial worries about TNFi and malignancy have been sufficiently diminished."

Provided by American College of Rheumatology

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