

Study suggests preoperative antibiotic treatment in pediatric elbow fracture surgery is not necessary

June 5 2024



Credit: Pixabay/CC0 Public Domain

Antibiotic treatment prior to surgical repair of a pediatric elbow fracture does not reduce the risk for post-operative infection, according to new findings from a team of researchers and surgeons from the University of Missouri School of Medicine.

A humerus bone fracture near the elbow is a common injury among children who fall. The typical surgical approach for repairing pediatric elbow fractures is a procedure called closed reduction percutaneous pinning (CRPP). It involves inserting pins or wires through the skin to promote stability and healing of the bone.

CRPP is a minimally invasive, safe and effective procedure, but post-operative infections can occur in a small number of cases. As a result, some physicians will pre-treat the patient with antibiotics hoping to prevent infections from occurring after surgery.

In a recent randomized trial, MU researchers tested whether preoperative, preventative treatment with antibiotics resulted in lower rates of [infection](#) following CRPP. What they found was that it didn't matter whether the patient was treated with [prophylactic antibiotics](#) or not when it came to rates of post-operative infection.

Sumit Gupta, MD, division chief, Pediatric Orthopaedics and associate professor of orthopaedic surgery at the School of Medicine helped lead the study, which involved 160 patients randomly assigned to either receive pre-surgical antibiotics or a placebo. His team found that the infection rate in those treated with the placebo was only 0.1% higher than in the treatment group. In both groups, the infection rate was very low; only 1.2% to 1.3% respectively.

"The evidence suggests there is no need for pre-surgical [antibiotic treatment](#) in these types of cases," said Gupta. "As [antimicrobial resistance](#) continues to rise, the importance of antibiotic stewardship is

essential to preserving the efficacy and benefits of these lifesaving drugs."

The current clinical practice guidelines developed by a joint panel from the American Society of Health-System Pharmacists, the Infectious Diseases Society of America, the Surgical Infection Society, and the Society for Healthcare Epidemiology of America acknowledged that the need for pre-surgical antibiotics is not well established.

"The results of our study provide important data that can be used in the development of new, evidence-based guidelines to aid surgeons in their appropriate use of antibiotics," said Daniel Hoernschemeyer, MD, medical director of Pediatric Procedural Services and associate professor of clinical orthopaedic surgery at the School of Medicine. "It is increasingly clear that we should only be using antibiotics to treat infections that are actually occurring."

"Effect of Antibiotic Prophylaxis on Infection Rates in Pediatric Supracondylar Humerus Fractures Treated with Closed Reduction and Percutaneous Pinning: A Prospective Double-Blinded Randomized Controlled Trial" was recently [published](#) in the *Journal of the American Academy of Orthopaedic Surgeons*.

In addition to Gupta and Hoernschemeyer, the research team from the University of Missouri included Emily Leary, Ph.D., director of orthopaedic biostatistics in the Department of Orthopaedic Surgery; Ennio Rizzo Esposito, MD, Rachel Phillips, MD, and Pierre-Emmanuel Schwab, MD, also of the Department of Orthopaedic Surgery.

More information: Sumit K. Gupta et al, Effect of Antibiotic Prophylaxis on Infection Rates in Pediatric Supracondylar Humerus Fractures Treated with Closed Reduction and Percutaneous Pinning: A Prospective Double-Blinded Randomized Controlled Trial, *Journal of*

the American Academy of Orthopaedic Surgeons (2024). [DOI: 10.5435/JAAOS-D-23-00795](https://doi.org/10.5435/JAAOS-D-23-00795)

Provided by University of Missouri

Citation: Study suggests preoperative antibiotic treatment in pediatric elbow fracture surgery is not necessary (2024, June 5) retrieved 11 July 2024 from <https://medicalxpress.com/news/2024-06-preoperative-antibiotic-treatment-pediatric-elbow.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.