MedicalXpress

Study suggests reducing use of broad-spectrum antibiotics for acute kidney infections

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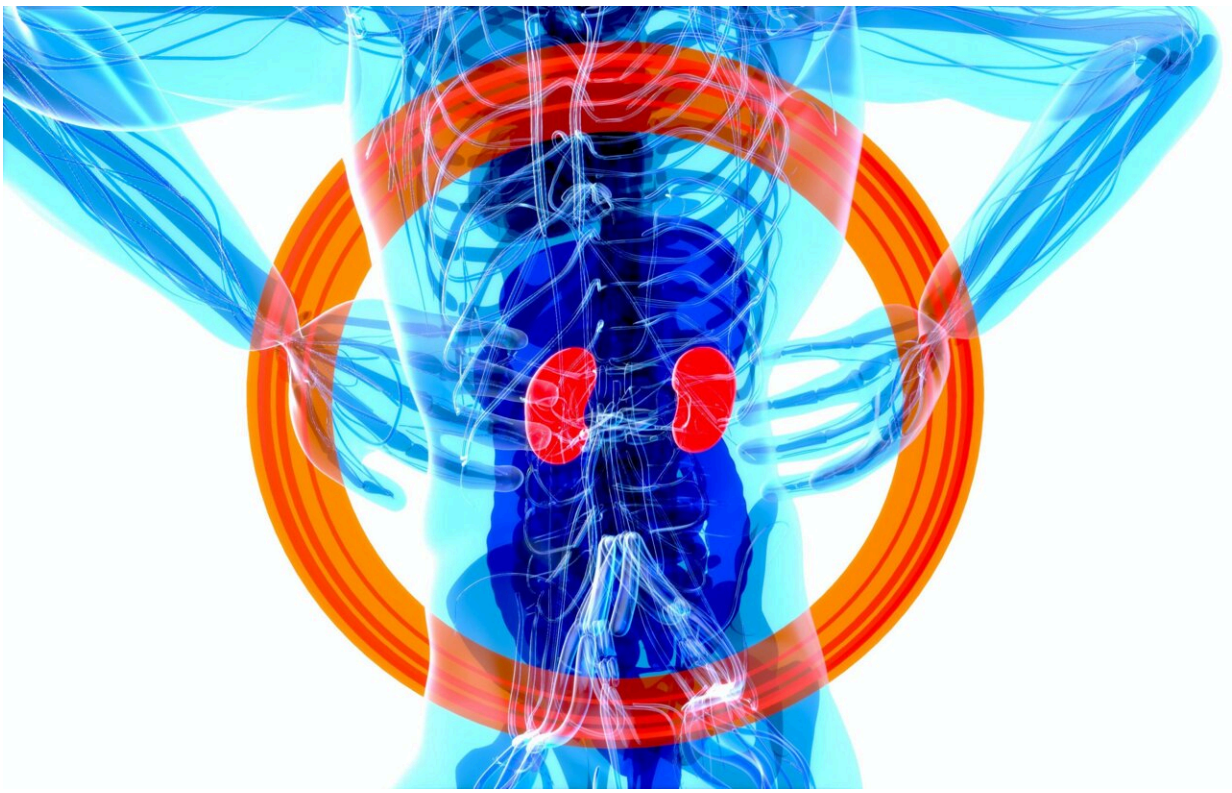

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A new study led by Ochsner infectious diseases clinical pharmacist Kevin Lin, PharmD, was recently published in *PLoS One*, suggesting that

oral cephalosporins are as safe and effective as the standard of care fluoroquinolones (FQs) for the treatment of acute kidney infections. Cephalosporins belong to a family of antibiotics called beta-lactams which are generally regarded as "narrower-spectrum" meaning they don't kill as much of our good bacteria and have a much safer side effect profile when compared to FQs.

Lin, a clinical pharmacist at Ochsner since 2019, conducted much of the research while he was in an infectious diseases pharmacy residency at Parkland Health & Hospital System in Dallas, Texas.

"This research began as a residency project that stemmed from a lack of substantial clinical data in the space of oral beta-lactams for invasive infections," said Lin. "From an antimicrobial stewardship perspective, the more we can reduce the use of broad-spectrum antibiotics such as fluoroquinolones, which is generally the mainstay of treatment for kidney infections, the better it is for patients and slowing the development of antimicrobial resistance in the long run."

Reducing the use of antibiotics, and specifically broad-spectrum antibiotics, in the outpatient realm has started to gain more traction in recent years since an estimated 60% of all antimicrobial expenditures for human use are related to care received outside the hospital from primary care clinics, urgent cares, etc., and is now a major focus of antimicrobial stewardship programs for many health care systems.

Studies describing high yield antimicrobial stewardship interventions are uncommon so this study gives additional support to using narrower-spectrum oral antibiotics for uncomplicated infections that can be treated in the outpatient space.

"The biggest advantage of oral cephalosporins is the narrower bactericidal spectrum which would lead to lower rates of antimicrobial

resistance over time," said Lin. "In addition, the side effect profile of oral cephalosporins and other oral beta lactams are far superior to fluoroquinolones so they can be used as a much safer and equally efficacious alternative."

Infectious diseases pharmacy grew into a passion for Lin when he was in pharmacy school, and he continues in this field at Ochsner Health.

"Learning about the constantly changing world of microorganisms and their ability to change and adapt to our efforts to control them is fascinating," said Lin. "From a hospital pharmacy perspective, there are a multitude of areas to assist medical teams and I get the privilege of working closely with our infectious diseases physicians to help optimize antimicrobial use and contribute to improved patient safety and outcomes."

More information: Kevin Lin et al, A retrospective review of oral cephalosporins versus fluoroquinolones for the treatment of pyelonephritis, *PLOS ONE* (2022). DOI: 10.1371/journal.pone.0274194

Provided by Ochsner Health System