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# A randomized, controlled trial of prulifloxacin as conversion therapy after intravenous carbapenem in the treatment of acute pyelonephritis caused by third generation cephalosporin resistant pathogens: A pilot study

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**Abstract**

The efficacy of converting to oral fluoroquinolones after initial intravenous antibiotics for the treatment of acute pyelonephritis (APN) caused by the third-generation cephalosporin resistant Enterobacteriaceae (3-GCrEC) needs to be investigated. The objective was to compare the clinical and bacteriological outcome of oral prulifloxacin with intravenous ertapenem for the treatment of APN caused by 3-GCrEC. A pilot, randomized controlled trial of patients with APN caused by 3-GCrEC was conducted at two hospitals from August 2015 to December 2020. Any intravenous antimicrobial drug was initially permitted for empirical therapy. On day 4, adult patients (aged >18 years) with either non-bacteremic or bacteremic APN were eligible for the study if their infection was caused by 3-GCrEC susceptible to the study drugs. The patients were randomly assigned to receive either oral prulifloxacin or intravenous ertapenem. The total duration of antimicrobial therapy was 14 days. Of the 21 enrolled patients, 11 were treated with prulifloxacin, and 10 were treated with ertapenem. At the test of cure visit, there was no statistically significant difference between the patients with overall clinical success who were treated with prulifloxacin (90.9%) and those treated with ertapenem (100%, $p = 0.999$). In addition, there was no statistically significant difference in microbiological eradication between the prulifloxacin and ertapenem groups (100% vs. 100%, $p = 0.999$). The converting to oral prulifloxacin after intravenous antibiotics therapy appears to be an alternative option for treatment of APN caused by 3-GCrEC. A further large randomized controlled trial should be investigated.