Evaluation of cefazolin and probenecid for the treatment of uncomplicated skin and soft tissue infections in an outpatient setting.

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**Background:** Uncomplicated skin and soft tissue infections are commonly treated with intravenous antibiotics in the outpatient setting if the patient does not require hospital admission. Common causative organisms include beta-hemolytic Streptococci or methicillin susceptible *Staphylococcus aureus* (MSSA) which are well covered by cefazolin dosed three times daily. A once daily intravenous antibiotic decreases the number of infusion visits and can sometimes lead to the prescribing of broad spectrum, once daily dosed antibiotics such as ceftriaxone or ertapenem out of convenience. On June 1, 2015, the Covenant Health Antimicrobial Stewardship Committee (CHASC) reinstated probenecid and developed a pre-printed patient care order (PPCO) for the combined use of cefazolin and probenecid in the treatment of uncomplicated skin and soft tissue infections (SSTIs) in two combined 620 bed community hospitals (Misericordia and Grey Nuns Community Hospitals). Probenecid reduces the renal elimination of cefazolin which permits extending the dosing interval to once daily but should be avoided in patients with impaired renal function or more complicated infections. The objective of this study was to evaluate the appropriateness of cefazolin and probenecid use and to determine clinical efficacy.

**Methods:** From June 1 to September 30, 2015, patients 18 years of age and older initiated on cefazolin and probenecid either through the Emergency Department or IV Clinic at the Grey Nuns and Misericordia Community Hospitals were reviewed prospectively. Data collected included renal function, indication for use, culture and susceptibility results and patient outcome.

**Results:** The cefazolin and probenecid order set was used for 144 patients. The majority of patients [127/144 (88%)] met the specified criteria for use of cefazolin and probenecid. The remaining 17 patients either had more complicated infections or risk factors for nephrotoxicity which precluded probenecid use. Thirty seven patients had truncated courses of cefazolin and probenecid for various reasons including failure to attend for therapy, allergic reaction, or change in regimen due to culture results, premature abandonment of drug (defined as within 24 hours of starting) or prescriber preference. In the remaining 90 patients, therapy was successful in 76/90 patients (84.4%) including 9 patients with bursitis. Therapy failure, defined as slower than expected clinical improvement or clinical worsening, occurred in 14/90 patients (15.6%). Of the 14 with clinical failure, 12 of these patients were overweight (body mass index 25 to less than 30) or obese (body mass 30 or greater).

**Conclusions:** Cefazolin and probenecid is a treatment option for the management of uncomplicated skin and soft tissue infections with a clinical success rate of 84.4% when used appropriately. This regimen provides a more targeted spectrum of coverage without foregoing the convenience of once daily therapy in an outpatient setting, thereby representing an effective Antimicrobial Stewardship initiative. Caution should be exercised in patients with a body mass index of 25 and over as they experienced higher rates of clinical failure.