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Pediatric ceftriaxone dose rounding protocol

Statement of the Problem: Ceftriaxone is a 3rd generation cephalosporin that works by binding to penicillin binding proteins to inhibit bacterial cell wall synthesis. Ceftriaxone is commonly used to treat infections caused by *S.pneumoniae* such as community-acquired pneumonia or meningitis and *E.coli* which is commonly identified in urinary tract infections. Ceftriaxone is widely distributed in the lungs, bone, bile, and CSF. It is primarily excreted unchanged in the urine. Ceftriaxone exhibits time-dependent bactericidal activity. Patient-specific doses for ceftriaxone are labor intensive to prepare in the central pharmacy. Doses between 1g and 2g are unable to be reused if the patient's medication is discontinued after the dose is prepared. Doses of 1g or 2g can be stored properly and reused prior to the beyond use date. The purpose of this protocol is to round ceftriaxone doses to minimize errors and waste while maintaining appropriate doses.

Discussion: A study in a children's medical center looked at improving pediatric outcomes through medication standardization. By implementing these changes, the pharmacy was able to increase productive interdisciplinary communication, decrease errors and expedite medication procurement. A second study evaluated antibiotic dosing errors in pediatric patients before and after implementation of a standard dosing table, which included ceftriaxone. The antibiotic dosing standardization significantly reduced the incidence of dosing errors for inpatient pediatric patients from 65.8% to 5.06%.

Findings: Pharmacist will automatically adjust the final dose per the dose rounding table.

Conclusion & Significance: This protocol applies to the pediatric patients weighing >20kg at Community Health Network. Patients <20kg will follow standard dosing and medication dispensing per current practice. The dose-rounding table provides dosing that is potentially greater than the 5% variance approved by pharmacy policy but is within appropriate dosing ranges for the various indications.

Biography

Sarah Nierman is the Pediatric/PICU/NICU Clinical Pharmacy Specialist at Community Health Network and a Clinical Instructor at Butler University in Indianapolis, Indiana. She is a member of the health system's antimicrobial stewardship program committee.

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