Efficacy of Oral Quinolones and Beta-Lactams as Stepdown Therapy for Enterobacteriaceae Bloodstream Infections (EB-BSI)

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Introduction

- Bacteremia is a common complication of Enterobacteriaceae (EB) infection
- Oral PO stepdown therapy improves quality of care
- Available data for Gram-negative BSI supports the use of fluoroquinolones (FQ) class
- FQs have multiple BSI indications
- Due to risk of serious adverse events

Methods

- This was an IRB-approved retrospective, single-center cohort at Maine Medical Center, a 637-bed tertiary care center from 2013 to 2016
- The purpose of this study was to compare safety and efficacy between quinolone and beta-lactam as stepdown therapy for EB-BSI
- Inclusion criteria: patients aged ≥ 18 years, initiated on IV antibiotics for EB-BSI, ≥ 5 total days of antibiotic therapy
- PO stepdown therapy with FQ or BLM
- Initiated on IV antibiotics for EB-BSI
- Serious adverse events
- Warning fluoroquinolone

Variables associated with clinical success

- Notable risk factors in our study included: length of therapy, total duration of therapy, age, Charlson score, baseline characteristics
- The presence of urinary abnormalities, diabetes with complications, hemiplegia, and urinary abnormalities were associated with lower clinical success

Results

- Baseline characteristics
- Eligible patients: 140
- Patients received FQ (n = 63) or BLM (n = 77)
- Baseline characteristics: age, gender, race, ethnicity, payer, mortality

- Baseline characteristics
- FQ vs BLM

- Clinical outcomes
- Beta-lactam vs fluoroquinolones

- Treatment outcomes
- Clinical success
- FQ vs BLM

- Summary
- Stepdown PO BLM for EB-BSI was non-inferior to PO FQ
- More adverse events occurred in the PO FQ group with significant differences in individual patient outcomes and cause of clinical failure
- Patients with early stepdown and short course (3-7 days) had comparable outcomes in comparison to longer DOD
- The presence of urinary abnormalities and Diabetes with complications were negative predictors of clinical success
- The retrospective nature and inability to review events and admissions outside of our EHRs were limitations, prospective studies are warranted

Acknowledgments & Disclosures

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References