Objectives

Primary

• Determine the target trough attainment rate (15-20 mg/L) of initial vancomycin dosing in IVDUs.

Secondary

• Describe the dosing regimens and other patient specific variables associated with reaching target trough concentrations.
• Compare nephrotoxic outcomes of patients who achieved target trough concentrations and patients who did not achieve target trough concentrations at any time during their hospitalization.
• Determine average pharmacokinetic (PK) parameters (volume of distribution, elimination rate constant, half-life, clearance and AUC) of IVDUs where two vancomycin concentrations were obtained in a dosing interval.

Disclosures and Funding

• All authors have no relevant conflicts of interest to report.

Methods

Study Design

Retrospective analysis of IVDUs admitted from July 1, 2011 to October 1, 2016 to examine the association of vancomycin regimen to target trough attainment.

Participants

Inclusion

• ≥18 years old
• Admission to the internal medicine service at the University of Utah Hospital
• Suspected or confirmed IVDU history at the time of admission documented in the medical record per the primary team
• Received vancomycin at a consistent maintenance dose for 36 hours (including the loading dose)
• At least 1 appropriate vancomycin concentration obtained after 30 hours of the first dose (within 2 hours of the next scheduled dose)
• Admission CrCl >60 ml/min (calculated using the Cockcroft-Gault estimation)

Exclusion

• Pregnant
• Receiving dialysis, ECMO, plasmapheresis
• Cystic fibrosis (CF) diagnosis
• Transferred from an outside acute care facility

Data Elements

• Intravenous drug of abuse
• Comorbidities
• Source of infection
• All vancomycin serum concentrations obtained
• All vancomycin doses and times of administration
• Concomitant nephrotoxic agents

Outcome Definitions

• Vancomycin Trough Attainment4
  • 15 – 20 mg/L
  • Nephrotoxic Event4
  • Occurrence of increase in serum creatinine by 0.5 mg/dL or ≥50% after at least 3 days of therapy
• Probability of vancomycin associated nephrotoxicity
• Naranjo Score >4 (i.e. “probable” or “definite”4)

Data Analysis

• Bivariate analysis using median and interquartile range were used
• Naranjo Score >4 (i.e. “probable” or “definite”)

References