C5-7: Intravenous Administration Issues: A Comparison of Peripheral Intravenous Catheter Complications in Vancomycin vs. Other Antibiotics

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Abstract:
Introduction: Ensuring reliable intravenous access is critical for reaching optimal patient outcomes including decreasing costs of care and length of stay for patients. Many factors contribute to the growing numbers of patients with venous depletion. One factor is the long-term use of vancomycin. As vancomycin is one of the most acidic IV antibiotics and consequently one of the most damaging to patients’ veins, there is an urgent need to assess cost and complications of its administration. The purpose of the study was to compare and quantify adverse outcomes between two groups of surgical patients with peripheral intravenous catheters (PIVs), those receiving vancomycin versus those receiving other antibiotics.

Method(s): Nurses on a 32-bed surgical unit observed IV sites on two groups of patients, vancomycin vs. other antibiotics. Data were collected on number of PIV attempts, phlebitis and infiltration scores, nursing time and missing or late doses. The purposive sample included 153
orthopedic and trauma patients hospitalized between November 2008 and May 2009. Numerical and categorical variables were summarized and ANOVAs were run on each outcome, comparing the vancomycin group to the group receiving other antibiotics.

**Results:** Increased adverse outcomes were found in the vancomycin group, including insertions (p=.038), number of attempts (p=.018), infiltration (p=.020) and nursing time in room (p=.005). Phlebitis (p=.683) and minutes dose delayed (p=.562) were not found to be significant contributors to the analysis.

**Discussion & Conclusions:** Patients receiving vancomycin through a PIV developed more complications than those receiving other antibiotics. Additionally, nurses spent more time in the room starting PIVs, diverting work from other patient care. Despite the usual limitations of a study conducted on a busy patient care unit that depends on nursing staff data collection and limited generalizeability, this pilot study provides important information to nursing and patient care. Providing patients with information when discussing the benefits and risks of central catheters versus peripheral catheters becomes increasingly important as nurses make recommendations for venous catheters.

**Abstract History:**
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