

Appropriate Use of Vancomycin in a Cardiac Surgical Unit

Dr. Sanaa Mekdad

King Fahad Medical City, Riyadh, Kingdom of Saudi Arabia

Abstract:

Antibiotic resistance is a rapidly growing problem. Methicillin-resistant *staphylococcus aureus* (MRSA) and vancomycin-resistant enterococci (VRE) are major worries, particularly in developing nations where cost-effectiveness is essential. Use of vancomycin must be restricted to prevent resistant to it. Examining the appropriateness rate of vancomycin use in light of the recommendations of the Infectious Disease Society of America (IDSA) in the cardiac surgery ward was the aim of this study.

Methodology: This study was a retrospective analysis of the medical records of patients who received vancomycin over the previous year, from January 2023 to December 2023. The collected patient data included demographics, indications for vancomycin use, culture and sensitivity test results, concurrent antibiotic medications, vancomycin serum levels, and diagnoses. The appropriateness of vancomycin use was classified according to the recommendations of the Infectious Diseases Society of America (IDSA).

This study was a retrospective analysis of the medical records of patients who received vancomycin over the previous year, from January 2023 to December 2023. The collected patient data included demographics, indications for vancomycin use, culture and sensitivity test results, concurrent antibiotic medications, vancomycin serum levels, and diagnoses. The appropriateness of vancomycin use was classified according to the recommendations of the Infectious Diseases Society of America (IDSA).

Results: A total of 294 patients received vancomycin. The appropriate use of vancomycin was significantly higher than its inappropriate use ($p = 0.001$). Approximately 41% ($n = 120$) of patients were administered vancomycin for treatment purposes, while the remainder received it empirically, but not as surgical prophylaxis. Appropriate use of vancomycin was observed in 89.1% ($n = 262$) of patients. However, there remained a notable rate of inappropriate vancomycin use ($n = 32$, 10.9%). The most common reason for inappropriate use was the continuation of vancomycin beyond 72 hours without further evidence of a Gram-positive infection ($n = 21$, accounting for 65.6% of all inappropriate use).

Conclusions: The current study demonstrated that 89.1% of vancomycin use was appropriate, while approximately 10% was inappropriate, potentially contributing to vancomycin resistance. The majority of inappropriate use stems from frequent empirical prescribing, which requires further review and monitoring.

Keywords:

Antibiotic, antimicrobial, β -lactam, Gram-positive, MRSA, Resistance, VRE.