

Methicillin-resistant *Staphylococcus aureus* and Vancomycin-resistant Enterococci: Emerging Problems and New Prospects for Management

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Abstract

Introduction: Infections due to multidrug-resistant Gram-positive bacteria are a growing worldwide problem, particularly among seriously ill patients. A number of studies have demonstrated that patients infected with either methicillin-resistant *Staphylococcus aureus* (MRSA) or vancomycin-resistant enterococci (VRE) are at higher risk for mortality and medical resource expenditures. **Methods:** A non-systematic evidence-based review of linezolid, the first commercially available oxazolidinone, and quinupristin/dalfopristin, the first injectable streptogramin, for management of these multidrug-resistant infections was conducted. **Results:** As infections due to VRE increase and vancomycin-insensitive MRSA emerge, vancomycin is becoming less effective for managing Gram-positive infections. Preclinical comparative studies demonstrated that linezolid and quinupristin/dalfopristin are highly effective in eradicating both susceptible and resistant staphylococci, streptococci, and enterococci. Clinical experience, including phase III and compassionate-use data, with these newer agents in the treatment of MRSA and VRE infections are discussed. **Conclusions:** The clinical experiences thus far with linezolid and quinupristin/dalfopristin for MRSA and VRE infections have demonstrated efficacy, making these agents important additions to the limited number of therapeutic alternatives for Gram-positive infections.

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Key words: Gram-positive, Linezolid, Oxazolidinone, Quinupristin/dalfopristin, Resistance, Review, Staphylococci, Streptogramin