



Resistance to New Anti-enterococcal Agents

Walter Wilson

Division of Infectious Disease
Mayo Clinic, USA

The prevalence of glycopeptide resistant enterococci (GRE) is increasing dramatically worldwide. Currently, prevalence of GRE in Europe ranges from 0.4-12% and worldwide from 10-60%. In the United States, there has been a 40-fold increase in the prevalence of GRE in the last decade. The frequency of nosocomial GRE in the United States has also significantly decreased. Currently, in intensive care units, the prevalence of GRE is at least 22% and in non-intensive care units more than 15%.

In general, the virulence of enterococci is low. Mortality correlates with infection site. Urinary tract infections and prostatitis are associated with a low mortality, intra-abdominal, biliary, or wound infections with an intermediate mortality, and endocarditis, endovascular infections, and sepsis, particularly in immunocompromised hosts, with a high mortality. Effective antimicrobial therapy against GRE is urgently needed.

The options for antimicrobial therapy against GRE are limited. Linezolid, quinupristin-dalfopristin (Synercid), daptomycin, imipenem-ampicillin, and a new antimicrobial tigecycline have been the most widely used. Unfortunately, resistance is developing rapidly to quinupristin-dalfopristin, especially in immunocompromised hosts, such as transplant recipients. Additionally, the frequency of linezolid resistant strains of GRE is increasing worldwide. Daptomycin is a novel, cyclic lipopeptide antimicrobial which is active against GRE. However, there is limited clinical experience with the use of daptomycin in patients with GRE infections. Moreover, daptomycin resistant strains of GRE have been reported. Tigecycline is a new glycycline class of antibiotic which should be available for use worldwide in the near future. Tigecycline is active against most gram-positive cocci, including GRE. There are limited clinical data with the use of tigecycline in the treatment of GRE infections. As more experience is gained with the use of tigecycline, the potential for development of GRE resistant strains will become more clear.