

Dalbavancin, Oritavancin and Tedizolid are Safe and Effective for Skin Infection Treatment

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Acute bacterial skin and skin structure infections are among the most common reasons for hospitalization of adults (1). These infections are most often caused by *Staphylococcus aureus* and *streptococci* (2). Methicillin-resistant *S. aureus* (MRSA) account for many of these infections and present a particular treatment challenge because current therapies are limited by toxicity, resistance, or the lack of an oral formulation (3). Patients with skin or skin structure infections have three new antibiotic options, which have similar efficacy and safety profiles as vancomycin.

Glycopeptides, such as vancomycin are the most available agents with in vitro and in vivo activity against gram-positive infection. Dalbavancin (Durata Therapeutics) is a lipoglycopeptide antibiotic agent with in vitro and in vivo activity against gram-positive pathogens and a minimal inhibitory concentration (MIC) of this agent is required to inhibit the growth of 90% of the isolates (MIC₉₀) (4). Oritavancin, a synthetic analog of vancomycin that also has activity against gram-positive bacteria. In a double-blind, placebo-controlled study, oritavancin and IV vancomycin were compared for the treatment of patients with acute bacterial skin and skin structure infection (SOLO I); patients were randomly assigned to receive either a single-dose intravenous oritavancin or intravenous vancomycin twice daily and treatment was successful for 82.3% of the oritavancin group and 78.9% of the vancomycin group (5). Tedizolid is a novel oxazolidinone antibacterial drug designed to provide enhanced activity against gram-positive pathogens. The efficacy and safety of intravenous and oral tedizolid for treatment of patients with acute bacterial skin and skin-structure infections has been established by some studies. Intravenous to oral once-daily tedizolid 200 mg for 6 days is non-inferior to twice-daily linezolid 600 mg for 10 days for treatment of patients with acute bacterial skin and skin-structure infections. Tedizolid could become a useful option for the treatment of acute bacterial skin

and skin-structure infections in the hospital and outpatient settings (6). Studies have shown that the efficacy of dalbavancin administered once weekly, Oritavancin single dose and tedizolid 200 mg daily for 6 days are not inferior to that of a conventional twice daily antibiotic regimen with vancomycin or other glycopeptides and the early primary end point of cessation of the spread of infection and the absence of fever showed a consistent treatment effect regarding a reduction in the area of infection (4-6). Patients treated with dalbavancin had fewer adverse events than those treated with vancomycin and linezolid. However, further evaluation and monitoring is necessary as more patients are exposed to these agents; according to preliminary data, the adverse-effect profile of oritavancin and dalbavancin of these lipoglycopeptides is generally similar to that of drugs currently used to treat severe gram-positive infections (7). In the recent years, despite of suitable treatments in terms of cost benefit and availability for gram-positive infections in Iran, it seems that the old treatment of gram-positive infection such as vancomycin is still prescribed by Iranian physicians. Studies comparing new and old treatments can lead Iranian physicians to optimal choice for treatment of gram-positive infections.

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