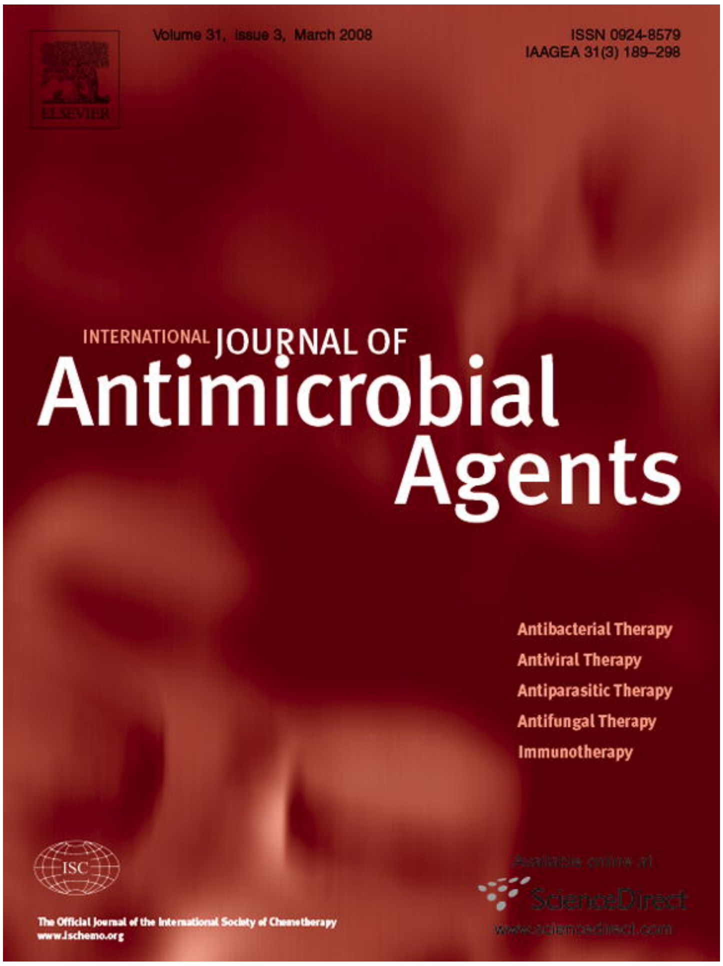
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enterococcal infections [1]. Both species may be resistant to multiple drugs, including vancomycin.

Fosfomycin tromethamine (FT), which is derived from phosphonic acid and affects cell wall synthesis by inhibition of enolpyruvate transferase, has entered the Turkish market very recently. It is active against many urinary pathogens including strains of *Escherichia coli*, *Staphylococcus saprophyticus* and *Enterococcus* spp. Although FT has been on the market for the last 2 years in Turkey, there are no data regarding its activity against vancomycin-resistant *E. faecium* (VREF).

Linezolid is an oxazolidinone group antibiotic that inhibits the formation of the initiation complex constructed with 50S ribosomes, mRNA, initiation factors 2 and 3, and fMetRNA [2]. It has significant activity against Gram-positive bacteria, including VREF.

Treatment of infections caused by VREF is challenging owing to the limited number of effective antimicrobials. In the present study, the in vitro activities of FT and linezolid against VREF were evaluated.

Study strains were isolated from different specimens (89 rectal swabs, 24 blood cultures, 3 tissue biopsy cultures and 1 urine culture) of hospitalised patients between 2000 and 2006. Minimum inhibitory concentrations (MICs) of FT and linezolid were determined by Etest (AB BIODISK, Solna, Sweden). A 0.5 McFarland suspension of the microorganisms in 0.9% saline was inoculated into Mueller–Hinton agar (Oxoid, Basingstoke, UK). Etest strips were placed on the culture plates and the MIC was read after 24 h. Since Etest strips for FT contained glucose-6-phosphate, extra supplementation of the compound in the culture medium was not done. The readings were tabulated and the MICs of 50% and 90% of the organisms (MIC_{50} and MIC_{90} values, respectively) were determined. The breakpoint criteria to determine susceptibility were based on those of the Clinical and Laboratory Standards Institute [3]. All isolates were *E. faecium*. The MIC_{90} and MIC_{50} values were, respectively, 512 mg/L and 192 mg/L for FT and 2 mg/L and 1 mg/L for linezolid. Overall MIC values for linezolid ranged between 0.5 mg/L and 3 mg/L. All isolates were found to be susceptible to linezolid, whereas 113/117 isolates were resistant to FT. Since most antimicrobial agents exhibit poor in vitro activity against enterococci, the options for treatment of severe infections are generally restricted either to a glycopeptide or a β-lactam plus an aminoglycoside. All study isolates had high-level resistance to gentamicin (data not shown). Linezolid was found to be more active than FT in our collection, in agreement with previous reports [1,4,5].

FT was found to have relatively poor in vitro activity against VREF strains in our study. Allerberger and Klare [6] reported FT MICs for VREF isolates in the intermediate sensitivity range, yielding an MIC_{50} of 32 mg/L and an MIC_{90} of 64 mg/L. In contrast, it was reported that FT had high activity against enterococcal strains in some other studies [4,7]. The MIC_{50} and MIC_{90} values of FT in our study strains were much higher than previous reports. Bacterial resistance to FT can be either chromosomal or plasmid-mediated. FT is taken into cells by active transport through the partially constitutive glycerophosphate uptake system and by a secondary transport system that mediates hexose monophosphate uptake. Most chromosomally resistant mutants have an impairment in one or both of these uptake systems. Unfortunately, we do not know the resistance mechanisms of the strains in this study.

In conclusion, in contrast to FT, linezolid had good in vitro activity against 117 isolates of VREF. FT does not appear to be a good choice in VREF urinary tract infections but may be an alternative in infections with low MIC values.

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Ethical approval: Not required.

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Feriha Cilli
Department of Microbiology and Clinical Microbiology, Ege University Faculty of Medicine, Bornova, Izmir, Turkey

Husnu Pullukcu
Department of Infectious Diseases and Clinical Microbiology, Ege University Faculty of Medicine, Bornova, Izmir, Turkey

Sohret Aydemir
Department of Microbiology and Clinical Microbiology, Ege University Faculty of Medicine, Bornova, Izmir, Turkey

Oguz Resat Sipahi *
Meltem Tasbakan
Department of Infectious Diseases and Clinical Microbiology, Ege University Faculty of Medicine, Bornova, Izmir, Turkey

Ajda Turhan
Department of Microbiology and Clinical Microbiology, Ege University Faculty of Medicine, Bornova, Izmir, Turkey

Sercan Ulusoy
Department of Infectious Diseases and Clinical Microbiology, Ege University Faculty of Medicine, Bornova, Izmir, Turkey

* Corresponding author. Tel.: +90 232 390 45 10; fax: +90 232 342 08 71.
E-mail address: oguz.resat.sipahi@ege.edu.tr (O.R. Sipahi)

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