Bacterial species and antimicrobial susceptibility of wound culture, obtained from diabetic gangrene patients who underwent limb amputation at a Japanese university hospital

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**Background:** Numbers of patients with diabetic gangrene is increasing. Antimicrobial treatment is commonly used, however, limb amputation cannot be avoided in severe cases. For prophylaxis at operation, basic antimicrobial agents such as cefazolin are often administrated, however, severe infection could occur if resistant strains were cultured especially in immunosuppressive patients such as diabetes. The purpose of this study is to clarify bacterial species and their susceptibility to antimicrobial agents for patients of diabetic foot gangrene.

**Methods & Materials:** Twenty-four patients (nine females) who had amputation on their legs for treating diabetic gangrene were enrolled from year 2002 to 2012. Among them, fifteen patients had diabetic history for over ten years, eleven patients were having repetitive hemodialysis. Their ages were 40–81 (mean 67), average hospitalization period were 81.6 days.

**Results:** As results, fifty-seven strains were isolated. Among them, 62% strains were Gram-positive cocci, 33% were Gram-negative rods, 5% were Gram-positive rods. Two or more strains were detected in fifteen patients. Indigenous bacteria of skin such as MSSA were most commonly cultured (n = 10). MRSA was found only in one patient. Sixty-seven percent of Peptostreptococci (n = 7), and seventy-five percent of E.coli (n = 4) were resistant to new quinolones. All Enterococci (n = 6) were susceptible to penicillin. Seventy percent of operated patients had no complications and discharged normally. Others had re-operation, including two cases dead due to heart disease. Most commonly used antimicrobial agents for prophylaxis were cefazolin (n = 8). However, sixty percent of all operated cases had resistant bacterial strain against cefazolin.

**Conclusion:** We conclude that in order to avoid inappropriate anti-microbial therapy, it is important to confirm antimicrobial susceptibility with bacterial culture before operation. Use of cefazolin as the first choice prophylaxis antimicrobials should be re-considered for diabetic gangrene amputation.

The species distribution and resistance pattern of vancomycin resistant enterococci from bloodstream infections in Istanbul, Turkey

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**Background:** Vancomycin-resistant enterococci, particularly Enterococcus faecium, are still one of the major causes of nosocomial infections worldwide, due to its typical multi-drug resistance profile and the tendency to create serious infections in critically ill patients. The aim of this study is to determine species distribution and resistance pattern of vancomycin resistance enterococci isolates from bloodstream infections at Istanbul University Cerrahpasa Medical Hospital.

**Methods & Materials:** Between January 2014 and October 2015, a total of 97 enterococci were isolated from blood samples of hospitalized patients with true bacteremia in intensive care units and in other departments of our hospital. Blood cultures were analyzed with the BACTEC 9120 system (Becton Dickinson, USA). The identification and antimicrobial resistance of isolates were determined by Phoenix automated system (BD Diagnostic Systems, Sparks, MD).

**Results:** The species distribution of enterococci was as follows: Enterococcus faecalis 53 (54.6%) and Enterococcus faecium 44 (45.4%). Resistance to vancomycin was detected in 16% of E. faecium isolates. None of E. faecalis isolates were resistant to vancomycin. Resistance rates of E. faecium and E. faecalis isolates to the antibacterial agents, respectively, were as follows: ampicillin 75% and 6%, high-level gentamicin 27% and 26%, high-level streptomycin 25% and 41.5%, linezolid 2% and 0%, norfloxacin 25% and 34%. None of the isolates were resistant to daptomycin and quinupristin/dalfopristin.

**Conclusion:** Our results showed that sixteen percent of our bloodstream E. faecium isolates were resistant to vancomycin and this situation highlights the importance of strict implementation of antibiotic policies to prevent emergence and spread of vancomycin resistant enterococci.

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