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ePoster Viewing

Severe bacterial infections

Bacteriological study of diabetic foot infections

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Objectives: Foot infections are the most common diabetes-related cause of hospitalization and frequently enhance the risk for lower extremity amputation. Although easily diagnosed clinically, antibiotic treatment should be based on cultures' results and antimicrobial susceptibility until resolution of infection. These infections are often polymicrobial in nature so correct isolation and identification, as well as prompt initiation of appropriate antibiotic therapy are important steps toward a successful outcome. We aimed to study the pathogens associated with diabetic foot infections in our hospital.

Methods: We included 374 consecutive diabetic patients presenting with foot infection and who did not receive antibiotics in the last month. Clinical specimens collected from patients were inoculated onto appropriate plates for standard aerobic and anaerobic cultures and incubated at 37^0 C for 24h and 48h, respectively. A gram-stained smear from each specimen was examined under microscope to obtain valuable information about the types of microorganisms present. The isolated pathogens were identified using the automated system VITEK 2 (BioMerieux, Marcy l'Etoile, France).

Results: The mean age of the patients was 57.1 years (range 35-77), 222 (59.4%) males and 152 (40.6%) females. A total of 626 pathogens were isolated: 296 aerobic gram-negative rods representing 47.3% of all pathogens, 230 aerobic gram-positive cocci (36.7%), 91 (14.6%) anaerobic bacteria and 9 Candida isolates (1.4%). Among the gram-positive cocci, *Staphylococcus aureus* was more frequently isolated (78.8%), *Proteus mirabilis* was more frequently isolated among the gram-negative rods (30.1%) and Bacteroides species represented the 85.7% of all anaerobic bacteria isolated. Out of the 374 patients studied, 179 (47.9%) patients had one microorganism, 107 (28.6%) had 2 pathogens, 54 (14.4%) had 3, 26 (7.0%) patients had 4 pathogens and 8 (2.1%) patients had 5 pathogens isolated from their foot ulcers.

Conclusion: Most of the diabetic foot infections included in our study were polymicrobial and Gram-negative bacteria were the most frequent aetiological agents. Accurate identification of the pathogens involved is paramount to reduce the spread of infection and diminish any unnecessary tissue loss.