

**TITLE:** EPIDEMIOLOGICAL AND MICROBIOLOGICAL PROFILE OF DIABETIC FOOT INFECTIONS IN A REFERENCE HOSPITAL, VITÓRIA, BRAZIL.

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**ABSTRACT:**

Diabetic foot infection (DFI) is one of the main and most serious clinical complications observed in diabetic patients. Currently, the major problem with the treatment of these infections is the resistant microorganism that contribute to increase of amputation and mortality rates. In addition, different profiles of microorganisms causing DFI have been described in worldwide. The aim of this study was to analyze the microbiological and epidemiological aspects of DFI in patients admitted in a reference hospital in Vitória, Brazil. Demographic and clinical data of patients with DFI were obtained between August 2016 and April 2017. The antimicrobial susceptibility test was performed according CLSI. Twenty-four patients presenting DFI and the most of them were men (62.5%), elderly ( $65 \pm 11$ ) and with associated hearth diseases (45.8%). Mean times of hospitalization and antimicrobial therapy were respectively, 20 and 27 days. A total of 36 bacterial strains were obtained and the most frequent species were: *Staphylococcus aureus* (25.0%, 9/36), *Proteus mirabilis* (25.0%, 9/36), *Proteus vulgaris* (22.2%, 8/36), *Pseudomonas aeruginosa* (13.9%, 5/36), *Enterobacter cloacae* (2.8%, 1/36) and *Enterobacter aerogenes* (2.8%, 1/36). Forty-two percent of the patients had polymicrobial infections and time of hospitalization these patients was nine days longer than patients with infections caused by just one microorganism. Amputation occurred in 16 patients (66.7%) most frequently minor amputation (54.5%). A high multidrug-resistant (47.2%) rate was found among isolates. Prevalence of methicillin-resistant in *S. aureus* was 60.0%. *Proteus* spp. were more resistance to aztreonam (77.8%) and also demonstrated resistance to fourth and fifth-generation cephalosporins (83.3%). All these isolates were sensitive to carbapenems. Thirty three percent (1/5) of *P. aeruginosa* were resistant to carbapenems. All strains of *Enterobacter* spp. were resistance to aztreonam, ceftazidime, ceftriaxone and sensitive to carbapenems. Generally, members of the family *Enterobacteriaceae* and *Pseudomonadaceae* were most resistant to betalactams (except carbapenems) and fluoroquinolones. In this study, Gram-negative bacteria were predominant in DFI (72.2%) different from that observed in others regions of the world. Furthermore, polymicrobial infections and bacterial resistance to antimicrobials may have contributed to high rates of hospitalization time and amputations.

**Keywords:** diabetic foot infection, epidemiology, antibiotic resistance

**Development Agency:** Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)