

**TITLE:** ASSOCIATION BETWEEN BACTERIA ISOLATED IN INFECTED DIABETIC FOOT ULCERS WITH THE RISK OF MAJOR AMPUTATION AND DEATH

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**ABSTRACT:**

Patients with diabetes mellitus present high rates of amputation. Eighty percent of non-traumatic lower limb amputations are preceded by foot ulcers and 40% to 80% of ulcers develop into infection. The objective of this study was to evaluate the association between bacteria genera and risk for major amputation and death in patients with infected diabetic foot ulcer. This is a retrospective study, two case-control studies. Case-control # 1 compared patients who underwent to major amputation (cases) or not (controls). Case-control # 2 compared patients that underwent major amputation and death (cases) to those who survived to major amputation (controls). The sample was recruited at the Vascular Surgery Unit of Hospital Risoleta Tolentino Neves, from January 2007 to December 2012. Data were submitted to descriptive analysis and logistic regression. In case-control # 1 (n=189) the most common bacteria genera, in deep infection of patients with mayor amputation, were *Acinetobacter spp.* (24.4%) (p<0,01), *Morganella spp.* (24.4%) (p=0,08), *Proteus spp.* (23.1%) (p=0,18) and *Enterococcus spp.* (19.2%) (p=0,15). The genera *Acinetobacter spp.* (OR=3.32; IC=1.25-8.77; p=0.02) and *Klebsiella spp.* (OR=9.82; IC=0.96-100.7; p=0.05), level creatinine serum  $\geq 1.3$  mg/dL (OR=1.23; IC=0.99-1.52; p=0.05) and level hemoglobin serum  $< 11$  g/dL (OR=20.5; IC=4.30-97.4; p<0.01) were predictive for major amputation. In case-control study # 2 (n=78), the most common bacteria genera in deep infection of patients from case group were *Acinetobacter spp.* (33.3%) (p=0.31), *Morganella spp.* (33.3%) (p=0.31) and *Proteus spp.* (27.8%) (p=0.59) and species were *Acinetobacter baumannii* and *Morganella morgani*. No bacteria genera was predictive for death. Level creatinina serum  $\geq 1.3$  mg/dL (OR=17.8; IC=2.12-149.5; p<0.01) and transfemoral amputation (OR=4.55; IC=1.32-15.7; p=0.02) were predictive for death. In patients submitted to major amputation, the genera *Acinetobacter spp.* and *Klebsiella spp.*, level creatinine serum  $\geq 1.3$  mg/dL and level hemoglobin serum  $< 11$  g/dL were predictive for major amputation. In patients submitted to major amputation who death, no bacteria genera was predictive for death. Level creatinina serum  $\geq 1.3$  mg/dL and transfemoral amputation were predictive for death.

**Keywords:** amputation, bacteria, death, diabetic foot, infection.

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