

## Microbiology Congress 2018: The major risk factors and outcomes of extensively drug-resistant *Acinetobacter baumannii* acquisition in a Moroccan surgical intensive care unit - Adel Elmekes - University Cadi Ayyad

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Risk factors for the nosocomial occurrence of Imepeneme-resistant *Acinetobacter baumannii* (IRAB) were determined. A case-control study design was used for a comparison of two groups of *A. baumannii*-positive patients with control patients. Nosocomial IRAB was isolated from the first group of *A. baumannii*-positive patients, and imipenem-susceptible *A. baumannii* (ISAB) was isolated from the second group. The control patients were randomly selected in a 4:1 ratio from the same medical or surgical services from which the *A. baumannii*-positive patients were receiving care when the isolation of IRAB occurred.

Risk factors analyzed included demographic variables, comorbid conditions, variables related to hospitalization, and the antimicrobials used. IRAB was isolated from 104 patients, and ISAB was isolated from 387 patients between January and December 2000. The risk factors for IRAB were a previous intensive care unit (ICU) stay (odds ratio [OR], 21.54; 95% confidence interval [CI], 10.73 to 43.23) and prior exposure to imipenem (OR, 9.18; 95% CI, 3.99 to 21.13) or third-generation cephalosporins (OR, 2.11; 95% CI, 1.13 to 3.95). Risk factors for ISAB were a previous ICU stay (OR, 8.05; 95% CI, 5.67 to 11.44) and exposure to third-generation cephalosporins (OR, 2.07; 95% CI, 1.47 to 2.91). Our results suggest that the nosocomial occurrence of IRAB or ISAB is strongly related to an ICU stay, and IRAB occurrence may be favored by the selection pressure of imipenem.

**Introduction & Aim:** *Acinetobacter baumannii* has emerged as an important nosocomial pathogen causing worldwide hospital outbreaks. This micro-organism can cause a wide range of infections, including bacteremia, pneumonia, urinary tract infection, peritonitis, etc. The aim of this study was to determine the risk factors and outcomes related to the acquisition of extensively drug-resistant *Acinetobacter baumannii* in a Moroccan surgical intensive care unit (ICU).

**Method:** This study was conducted from March 2015 to February 2016, in a 10-bed clinical and surgical tertiary ICU of Ibn Tofail University Hospital Mohammed VI in Marrakesh, Morocco. The adult patients with a first clinical episode of infection were included in the study. The level of antibiotic resistance has been studied by the agar diffusion method, the choice of antibiotic susceptibility testing and interpretation criteria were made as recommended by the Antibigram Committee of the French Microbiology Society (AC-FMS) and standards of the European Committee on Susceptibility (EUCAST, 2015).

**Result:** Obtained results showed that among 225 isolated bacteria, 85 of these isolates were represented by *Acinetobacter baumannii* and all *Acinetobacter baumannii* strains were resistant to Imipenem, which represented 72% of the multidrug resistant bacteria. The increasing and alarming antibiotic resistance levels were observed with Gentamicin 94%, Tobramycin 93%, Ciprofloxacin 95%, Amikacin 75% and only 48% were resistant to Trimethoprim-Sulfamethoxazole. However, all *Acinetobacter baumannii* tested strains were sensitive to colistin.

**Conclusion:** The study also shows that infections associated to these deadly bacteria were mainly represented by Pneumonia 48%, catheter-related bloodstream infection 30% and bacteremia 17%. These findings suggest the requirement of constant monitoring of MDR *Acinetobacter baumannii* in order to decide which patients need isolation and prevent the transmission of this pathogen bacterium in the ICUs.