

Session: P100 Bacterial meningitis: diagnosis and epidemiology

**Category: 2e. Skin, soft tissue, bone & joint & central nervous system infections**

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## Nonfermenting Gram-negative bacilli meningitis in neurosurgical elderly patients with intraventricular catheters

Carlos Rodríguez Lucas<sup>1</sup>, Jonathan Fernandez-Suarez<sup>2</sup>, Jose Boga<sup>3</sup>, Marco Álvarez<sup>1</sup>, Candela Menendez<sup>4</sup>, Fernando Vazquez<sup>3</sup>, Mauricio Telenti<sup>1</sup>, Azucena Rodriguez-Guardado<sup>\*5</sup>

<sup>1</sup>*Hospital Universitario Central de Asturias*

<sup>2</sup>*Hospital Universitario Central de Asturias; Huca \_; Microbiología Y Parasitología*

<sup>3</sup>*Hospital Universitario Central de Asturias; Microbiology*

<sup>4</sup>*Hospital Universitario Central de Asturias; Internal Medicine*

<sup>5</sup>*Hospital Universitario Central de Asturias; Infectious Diseases*

**Background:** Nonfermenting gram-negative bacilli (NFGNB) have emerged as important healthcare-associated pathogens. Its treatment is a serious therapeutic problem due to the emerging resistance. We describe the clinical features and the outcome of nosocomial neurosurgical meningitis in an elderly patients group.

**Material/methods:** All patients older than 65 years with nosocomial postsurgical meningitis due to NFGNB diagnosed at the Hospital Universitario Central de Asturias (Oviedo, Spain) between 1990 and 2015 were retrospectively reviewed. Nosocomial meningitis was defined according to the CDC definitions. Continuous values were expressed as mean and compared using Student t test or U of Man-Whitney. Categorical values were expressed as absolute and relative frequencies and were compared using Fisher's exact test or  $\chi^2$  test. A p value less than to 0.05 was considered as statistically significant. A binary logistic regression analysis using a step-wise (Wald) to determine the factors influencing the mortality of the infection was performed.

**Results:** At least one NFGNB was isolated in 33 CSF (57.6% men, mean age of 69 [5] years). The mean time elapsed between the surgery and the onset of the infection was 30[27] days. The most frequent underlying disease was hemorrhage (51.5%) followed by neoplasm (33.3%), head trauma (9%) and hydrocephaly (6%). Seventeen (51.5%) patients had a *Pseudomonas aeruginosa* infection and the rest *Acinetobacter baumannii* infection (45.5%).. The most frequent symptom was fever (100%) followed by altered mental status (27 %%). Eight patients had meningeal signs. Although all

patients received empirical treatment, this treatment was adequate in 22 cases. All patients received intravenous monotherapy with antipseudomonal cephalosporins (11 cases), carbapenems (9) or ampicillin-sulbactam (1 case). In 3 cases a combined parenteral therapy with aminoglycosides and ceftazidime (1 case) or carbapenems (2 cases) was used. Nine patients received a combined intravenous and intrathecal therapy with colistin. In 18 cases, treatment was associated with removal of the intraventricular catheter. Thirteen (39,4%) patients died as a direct consequence of the infection, seven of them were infected by *Pseudomonas*. Mortality was significantly high in absence of catheter removal (9 cases versus 4,  $p= 0.012$ , OR 3.040 [0.877-10.544]). None of the colistin-treated patients died (0 versus 13  $p= 0.035$  OR 0.519 [0.361-0.746]).

**Conclusions:** Nosocomial meningitis by nonfermenting gram-negative bacilli is an infection with high mortality in elderly patients without intrathecal therapy or treatment with colistin. The use of intravenous and intrathecal colistin is a safe option