**BACKGROUND**

- *Pseudomonas aeruginosa* meningitis is a rare condition which is usually associated with pathology in the ORL field, neurosurgery or local neurologic manipulations.

**OBJECTIVE**

- The aim of this study is the description of the characteristics of the neurosurgical meningitis due to *Pseudomonas aeruginosa* emphasizing the factors influencing their outcome.

**METHODS**

- All patients adults with nosocomial postsurgical meningitis due to *Ps aeruginosa* diagnosed between 1990-2014 were retrospectively reviewed.
- Nosocomial meningitis was defined according to the CDC. A positive CSF culture or Gram stain with normal levels of glucose, proteins and cell count in absence of clinic was considered as a contamination and discarded.
- The treatments included the following parenterally administered antibiotics: imipenem 1 gr/8 hours, meropenem 2 gr/8 hours, cefotaxime 3 gr/8 hours, amikacin 500 mg/8 hours, sodium colismethate 5 mg/kg/day administered in three doses in patients with normal renal function. In some cases the treatment were administered intrathecal: colistin (10mg/12 hours), or gentamycin, or tobramycin (both at 10 mg/24 hours respectively) or intrathecal amikacin (20 mg/24 hours).
- Cure was achieved when two successive cultures were negative and clinical signs of infection (fever, meningismus) were absent.
- To assess survival, patients were followed up until they died in the hospital or were discharged.

**RESULTS**

- 51 CSF cultures for *Pseudomonas aeruginosa* were found in 51 different patients (58.8% men, mean age of 50 [18] years. The mean time elapsed between the surgery and the onset of the infection was 22[20] days (range 3-112). The mean of permanence of IVC before the diagnosis was 21 [19]. The characteristics of CSF were: white cell count 6,964 [33,569] cell/mm3, protein 321[314] g/dl and glucose 49[37] mg/dl. The most frequent underlying disease were: hemorrhage (33,3%), neoplasm (33,3%), head trauma (27,5%) and hydrocephaly (5,9%). Seventy-six percent of patients had a intraventricular catheter, 17% a CSF leakage and 6% a peritoneal device. Polymicrobial meningitis was found in ten patients.

- There is not differences in sex, time, of, mixed cultures, in dead and survival patients. Mortality was higher in patients with neoplasm (70%) but without significantly differences (p=0.125) Mortality was significantly associated with older age (53[17], vs 49[18], p=0.001), lack of removal of the intraventricular catheters p= 0.006, OR: 5.74 [1.51-12.29] and an inadequate empiric treatment (p= 0.010, OR 3.14 [3.33-15.6] ). The mortality was lower in patients treated with colistin intravenous and intrathecal (0 vs 17, p=0,075 OR= 1.61 [1.28-2.02].

- **CONCLUSIONES**

- Nosocomial meningitis by *Pseudomonas aeruginosa* is an infection with high mortality associated with lack of removal of the intraventricular catheters, older age and absence of intrathecal therapy.
- The use of colistina intravenous and intrathecal combined with carbapenems or cephalosporins is a useful and safe option.

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