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Paper Poster Session
Surgical site infection

Nosocomial meningitis in a neurosurgery department during a-13 year period

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Background: Nosocomial meningitis (NM) is a complication of neurosurgical invasive procedures such as craniotomy, external or internal ventricular shunt placement, laminectomy, and others. Shunt infections (SI) are major part of nosocomial meningitis. The aim of the study was to evaluate the NM in our hospital.

Material/methods: In this report, NM cases hospitalized neurosurgery department from January 2004-December 2015 period were retrospectively evaluated.

Results: We described 85 NM cases, 60 (70.5%) were shunt infection (SI) and 25 (29.4%) were nonshunt infection (nSI). Mean age were 9.9 years in SI (0-53) and 32 years in nSI (9-70). A total 134 microorganism were isolated from NE, 32 were polymicrobial and/or reinfection. Total 84 Gram-positive (62.7%) and 47 (34.3%) Gram-negative microorganisms, and 3 fungus were isolated from cerebrospinal fluid (CSF) cultures. Most frequent causative pathogens in NM were methicillin resistant coagulase negative staphylococci (MRCNS) (n=57, 42.5%), *Acinetobacter spp.* (n=17, 12.6%), methicillin sensitive coagulase negative staphylococci (MSCNS) (n=12, 8.9%) (Table 1). Overall mortality rates of 85 case were 22.3% (n=19), 18.3% in SI (n=11) and 32% in nSI (n=8). In fatal cases polymicrobial infection and/or reinfection rate was 63.1% (12/19).

| Gram Positive Microorganism | n (%) | Gram Negative Microorganism | n (%) | Fungus | n (%) |
|-----------------------------|------------------|-----------------------------|-----------------|----------------------|------------|
| MRKNS | 57 (42.5) | <i>Acinetobacter spp.</i> | 17(12.6) | <i>Candida spp</i> | 3 (2.2) |
| MSKNS | 12 (8.9) | <i>Enterobacter</i> | 11 (8.2) | | |
| MRSA | 3 (2.2) | <i>P.aeruginosa</i> | 8 (6.0) | | |
| MSSA | 6 (4.4) | <i>E.coli</i> | 5 (3.7) | Polymicrobial | 32 |
| VSE | 4 (2.9) | <i>Citrobacter</i> | 3 (2.2) | | |
| VRE | 2 (1.5) | <i>Klebsiella spp.</i> | 3 (2.2) | | |
| Total | 84 (62.7) | | 47(35.0) | | 134 |

Conclusions: NM was an important complication after invasive neurosurgical procedures. Most frequent causative agents were coagulase negative staphylococci and *Acinetobacter spp.* Mortality rates were high especially in polymicrobial infection or reinfection, and in MDR Gram-negative infections. Infection control prevention should be strictly applied for MDR bacteria. To decreasing NE new techniques such as antibiotic coated catheter should be developed.