

The Effectiveness Of Antimicrobial Choices And Functional Outcome Of Healthcare-Associated Meningitis Or Ventriculitis Following Neurosurgical Procedure In Adult Patient At University Malaya Medical Centre, Kuala Lumpur, Malaysia

Yu Jie Lee¹, Joshua En Sheng Ling², Qi Xuan Ang¹, Song Ying Chong¹, Wei Pin Hung¹, Helmi Sulaiman³, Nadia Atiya⁴, Sheau Fung Sia⁵

¹Faculty Of Medicine, University Of Malaya, Kuala Lumpur, Malaysia/ Faculty Of Medicine, University Of Malaya, Kuala Lumpur, Malaysia/ Malaysia

²Faculty Of Medicine, Newcastle University Medicine Malaysia, Johor, Malaysia/ Faculty Of Medicine, Newcastle University Medicine Malaysia, Johor, Malaysia/ Malaysia,

³Infectious Diseases Unit, Department Of Medicine/ Faculty Of Medicine, University Of Malaya, Kuala Lumpur, Malaysia/ Malaysia,

⁴Department Of Medical Microbiology/ Faculty Of Medicine, University Of Malaya, Kuala Lumpur, Malaysia/ Malaysia,

⁵Division Of Neurosurgery/ Faculty Of Medicine, University Of Malaya, Kuala Lumpur, Malaysia/ Malaysia

Introduction:

Healthcare-associated meningitis or ventriculitis (HCAMV) is a serious complication of neurosurgical procedures.

Methods:

All adult patients aged ≥ 18 years old admitted to our hospital who developed microbiologically confirmed HCAMV following neurosurgical procedure were retrospectively included from July 2012 to August 2017. Patients were identified from the microbiology laboratory database. Data regarding aetiological agents, antibiotic susceptibility patterns and outcome were collected. They were followed up via phone-call interview with standardized questionnaire.

Results:

Fifty-two patients were included. Gram-negative bacilli (GNB) were the most common cause of HCAMV (n=32; 62%). *Acinetobacter baumannii* (AB) was the predominant GNB identified (21/32; 66%). Carbapenem-resistant AB (CRAB) accounted for most of the AB isolates (15/21; 71%) and was the most common aetiological agent overall (29%). The most common Gram-positive bacteria isolated were coagulase-negative staphylococci (CoNS) (n=13) and *Staphylococcus aureus* (SA) (n=6). Most of the CoNS and SA were methicillin-resistant (CoNS=11/13; 85%; SA=4/6; 67%). All the *Staphylococcus* isolates were susceptible to vancomycin. None of the empiric antibiotics given were active against CRAB. Twenty (38.5%) patients were succumbed to HCAMV on admission. Additional seven patients died at one year. Only 8 patients obtained MRS 0 or GOS 5 on 30 months of follow up.

Conclusion:

CRAB was the most common aetiological agent of HCAMV in our cohort. More than half of our cohort were succumbed to HCAMV one year from onset. The commonly prescribed empiric antibiotics for this infection at our hospital are ineffective against it. Therefore, early diagnosis of HCAMV and effective antibiotic treatment are essential.