Unknown and suspected Staphylococcus aureus brain abscess:

Vancomycin: covers MRSA.15 mg/kg IV q8-12 hours to achieve through 15-20 mg/dl.

+

3rd generation cephalosporin (ceftriaxone)

+

Metronidazole.

The clinical effectiveness of tertiary-generation cephalosporin+vancomycin+metronidazole for bacterial brain abscess was 88%. Therefore, combined antibiotics in cases with no evidence of positive culture in brain abscess are strongly recommended [1].

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retrospective cohort study observed outcomes pre- and post-implementation of an EOP prophylaxis protocol which involved the administration of a single dose of ceftriaxone 2 g around the time of intubation. The study included patients ≥ 18 years who were admitted to the University of North Carolina Medical Center (UNCMC) neuroscience intensive care unit (NSICU) between April 1, 2014, and October 26, 2016, and intubated for ≥ 72 h.

RESULTS: Among the 172 patients included, use of an EOP prophylaxis protocol resulted in a significant reduction in the rate of microbiologically confirmed EOP compared to those without prophylaxis (7.4 vs 19.8%, p = 0.026). However, EOP prophylaxis did not decrease the combined incidence of microbiologically confirmed or clinically suspected EOP (32.2 vs 37.4%, p = 0.523). No difference in the rate of late-onset pneumonia (34.6 vs 26.4%, p = 0.25) or virulent organism growth (19.8 vs 14.3%, p = 0.416) was observed. No difference was observed in the duration of intubation, duration of intensive care unit (ICU) stay, duration of hospitalization, or ICU antibiotic days within 30 days of intubation. In Hospital mortality was found to be higher in those who received EOP prophylaxis compared to those who did not receive prophylaxis (45.7 vs 29.7%, p = 0.04).

CONCLUSIONS: The administration of a single antibiotic dose following intubation may reduce the incidence of microbiologically confirmed EOP in patients with neurologic injury who are intubated ≥ 72 h. A prophylaxis strategy does not appear to increase the rate of virulent organism growth or the rate of late-onset pneumonia. However, this practice is not associated with a decrease in days of antibiotic use in the ICU or any clinical outcomes benefit [2].

1)
Song L, Guo F, Zhang W, Sun H, Long J, Wang S, Bao J. Clinical features and outcome analysis of 90 cases with brain abscess in central China. Neurol Sci. 2008 Dec;29(6):425-30. doi: 10.1007/s10072-008-1019-x. Epub 2008 Nov 11. PubMed PMID: 19002652.
2)
Lewis TD, Dehne KA, Morbitzer K, Rhoney DH, Olm-Shipman C, Dedrick Jordan J. Influence of Single-Dose Antibiotic Prophylaxis for Early-Onset Pneumonia in High-Risk Intubated Patients. Neurocrit Care. 2018 Jan 8. doi: 10.1007/s12028-017-0490-8. [Epub ahead of print] PubMed PMID: 29313312.