

Postoperative Infections: Etiology, Incidence and Risk Factors among Neurosurgical Patients in Mthatha, South Africa

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Abstract

Background: Despite progress in hospital care, infections continue to represent one of the major complications among hospitalized patients.

Objectives: The study sought to determine the etiology and incidence of hospital-acquired infections and their associated risk factors following neurosurgical procedures.

Methods: A retrospective study was conducted from October 2013 to September 2014. Data including, demographics, hospitalization period, type of operations, and primary diagnosis, were collected. Post-surgical infections were confirmed microbiologically. SPSS v.23 was used for statistical analysis.

Results: A total of 1,688 patients who underwent neurosurgical operations were enrolled. The incidence of post-surgical infections was 4.2% per year. Post-surgical infections were significantly associated with craniotomy ($p < 0.0001$), prolonged stay (≥ 30 days) in the ward ($p = 0.008$), and patients' age ≥ 35 years ($p = 0.05$). *Staphylococcus aureus* (19.7%) was the most frequently isolated pathogen followed by *Klebsiella pneumoniae* (12.7%). A total of 42.9% of *S. aureus* isolates were MRSA (methicillin-resistant *S. aureus*), but all these isolates were susceptible to vancomycin; 44.4% of *K. pneumoniae* isolates were ESBL (extended spectrum beta-lactamase) positive but were susceptible to carbapenems, piperacilline-tazobactam and amikacin.

Conclusion: Post-surgical infections remain an important problem in neurosurgery. Increased resistance to causative pathogens is a major concern.

Keywords: Causative agents, Neurosurgery, post-surgical infections, risk factors.

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