

3rd International Conference on

NURSING & MIDWIFERY

May 23-24, 2018 | New York, USA

Surgical site infections after craniotomy: a matched health care cost and length of stay study

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Background: The progression of surgical site infection after neuro-surgery is considered as a common problem and a life-threatening situation that may be fatal if medical intervention is delayed. No studies have been conducted in Jordan to investigate the health care cost and the length of stay associated with surgical site infections post craniotomy.

Aims: The principal purpose of this study was to assess the extra health care cost and length of stay resulting from surgical site infection, as well as to identify the most frequent etiologic microorganisms of surgical site infections among Jordanian patients who have undergone craniotomy surgery.

Methods: A retrospective nested 1:1 matched case-control design was used. A computerized list of patients who had undergone craniotomy surgery during the period between May 2009 and March 2015 was generated from the information technology department in the targeted hospital. The financial affairs department was contacted to determine the final bill for every selected patient.

Results: The surgical site infection-group had significantly higher mean of health care cost by \$7,899.08, $P=0.001$ and hospitalization period by a mean of 23.17 of additional days more than the non-surgical site infection group. Furthermore, *Acinetobacter baumannii* and *Staphylococcus aureus* were determined as the most predominant causative agents of surgical site infection with a percentage of 39.1% and 26.1 respectively.

Conclusion: The results can be considered as baseline data for national benchmarking to evaluate the quality of care provided to the targeted patients. This study encourages nurse administrators to adopt protocols and strategies that promote infection control measures, as well as to develop new methods of surveillance for the universal precautions adherence. This may lead to limiting pathogens contamination to the surgical wound, shortening the length of stay and decreasing the health care cost.

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