

A Risk Scoring Tool for Cesarean Organ/Space Surgical Site Infections

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ABSTRACT

Background: Organ/space surgical site infections (SSIs) are serious complications after cesarean section in several settings. However, no scoring tool for prediction of cesarean organ/space SSIs have yet been developed. This study aimed to develop a risk scoring tool to predict cesarean organ/space SSIs.

Methods: Data of case vs. non-case from a tertiary care-hospital in Thailand were analyzed using a total of 243 cases of cesarean organ/space SSIs and 4,745 cases without cesarean organ/space SSIs during January 1, 2007 and December 31, 2012. Stepwise multivariable logistic regression was used to select the best predictors' combination and their coefficients were transformed into risk scoring system. We recruit data of all 951 patients in year 2015 for temporal validation.

Results: The best model's predictors comprised ethnic minorities, hemoglobin <11 g/dL, ≥ 4 pelvic examinations before the operation, wound class ≥ 3 , being referred from local settings, and the presence of foul-smelling amniotic fluid. This scoring tool had area under the receiver operating characteristic (ROC) curve of the tool for prediction of cesarean organ/space SSIs in the development data of 87.04% compared to 93.55% in validation data. The likelihood ratio of positive (LR+) and 95% confidence interval (CI) of low, medium and risk categories were 0.11 (95% CI, 0.07-0.19), 1.03 (95% CI, 0.89-1.18), and 13.25 (95% CI, 10.87-16.14), respectively.

Conclusion: This scoring tool showed high predictive ability on cesarean organ/space SSIs both development and temporal validation phase. It may help practitioners prioritize management and care of their patients depending on risk category. This may affect to decrease SSI rate.

Keywords: Cesarean, Organ/space SSIs, Prediction, Scoring tool

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