A475 - Simple predictive score for pulmonary complications in mechanically ventilated patients in surgical intensive unit

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Introduction:
Various scores are developed to predict pulmonary complications such as ARISCAT for patients at-risk of postoperative pulmonary complication [1] and LIPS for patients at-risk of lung injury [2]. The aim of this study was to compare these scores with ours for predicting pulmonary complications in mechanically ventilated patients in SICU.

Methods:
This prospective observational study was conducted in SICU at a university hospital. Adult patients admitted to SICU and required mechanical ventilation >24 hours were included. Primary endpoint was the composite of pulmonary complications including pneumonia, ARDS, atelectasis, reintubation, and tracheostomy. Multivariate analysis was performed to identify risk factors of pulmonary complications and the predictive score was developed. The ROC analysis was performed to compare power of ARISCAT, LIPS and our newly developed score for predicting pulmonary complications.

Results:
276 patients were included in this study. Pulmonary complications occurred in 86 (31.2%) patients. Independent risk factors for pulmonary complications included age >65 years old (OR 1.80, 95% CI 1.02-3.19), P/F ratio <300 (OR 2.32, 95% CI 1.31-4.13) and abnormal chest radiograph (OR 2.72, 95% CI 1.48-5.01). The AUROC of ARISCAT, LIPS and our score for predicting pulmonary complications were 0.51 (95% CI 0.44-0.59), 0.58 (95% CI 0.51-0.65) and 0.70 (95% CI 0.63-0.77), respectively. For our predictive score, 0.6, 0.8 and 1.0 point were assigned for presenting of age >65 years old, P/F ratio <300, and abnormal chest radiography, respectively. The score of 0.7 yielded sensitivity and specificity of 62.8% (95% CI 51.6%-72.8%) and 64.7% (95% CI 57.4-71.4%), respectively.

Conclusion:
Compared to ARISCAT and LIPS, our simple score had better power for predicting pulmonary complications in mechanically ventilated patients in SICU.

References: