Mortality Predictor for Acute Post-operative Critically Ill Patients in Neurosurgical Intensive Care Unit.

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Abstract

Background: According to the unique characteristic of acute post-operative critically ill patients in neurosurgical intensive care unit (ICU), the general clinical mortality predictors were recently found less valid. Therefore, this retrospective study was performed to discover the parameters which associated with the hospital mortality and their predictive performances in a large single tertiary neurosurgical ICU.

Material and methods: All acute post-operative neurosurgical patients fulfilled with the ICU admission criteria during February 1–July 31, 2011 were recruited. The demographics and the parameters related to clinical were collected within 30 minutes after admission by the certified neurosurgical registrar nurses. The observed hospital death rate was compared. The Generalized linear models were analyzed.

Results: There were 258 patients admitted, 94.57% were elective cases and 78.29% were diagnosed cerebral tumor. The observed hospital mortality was 3.49%. The body temperature was associated with the hospital mortality with the adjusted odds ratio (95%CI) of 1.22 (1.01-1.50) as well as blood glucose level, 0.93 (0.86-0.99); eye subscale in Glasgow coma scale score (GCSe), 0.19 (0.04-0.84); and length of stay before ICU admission, 1.15 (1.05-1.27) accordingly. The area under the receiver operating characteristic curve (95%CI) was 0.971 (0.923-1.000).

Conclusion: The body temperature, blood glucose level, GCSe and length of stay before ICU admission may be an alternative to predict hospital mortality among acute post-operative critical patients in neurosurgical intensive care unit. Finally, the variability, feasibility and cost effectiveness should be considered prior to select each tool.

Keywords: Temperature; length of stay; Glasgow coma scale score; emergency admission; performance

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