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# Performance the SOFA and APACHEII Scoring System to Predicate the Mortality of the ICU Cases

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**Abstract :** Introduction: There is a higher mortality rate for unplanned transfer to intensive care units. It also needs a longer length of stay and makes the intensive care unit beds cannot be effectively used. It affects the immediate medical treatment of critically ill patients, resulting in a drop in the quality of medical care. Purpose: The purpose of this study was using SOFA and APACHEII score to analyze the mortality rate of the cases transferred from ED to ICU. According to the score that should be provide an appropriate care as early as possible. Methods: This study was a descriptive experimental design. The sample size was estimated at 220 to reach a power of 0.8 for detecting a medium effect size of 0.30, with a 0.05 significance level, using G-power. Considering an estimated follow-up loss, the required sample size was estimated as 242 participants. Data were calculated by medical system of SOFA and APACHEII score that cases transferred from ED to ICU in 2016. Results: There were 233 participants meet the study. The medical records showed 33 participants' mortality. Age and sex with QSOFA , SOFA and sex with APACHEII showed $p>0.05$. Age with APCHHII in ED and ICU showed $r=0.150$, 0,268 ($p < 0.001$**). The score with mortality risk showed: ED QSOFA is $r=0.235$ ($p < 0.001$**), $exp(B)=1.685$($p = 0.007$); ICU SOFA 0.78 ($p < 0.001$**), $exp(B)=1.205$($p < 0.001$). APACHII in ED and ICU showed $r= 0.253$, 0.286 ($p < 0.001$**), $exp(B) = 1.041$,1.073($p =$ 0.017,0.001). For SOFA, a cutoff score of above 15 points was identified as a predictor of the 95% mortality risk. Conclusions: The SOFA and APACHE II were calculated based on initial laboratory data in the Emergency Department, and during the first 24 hours of ICU admission. In conclusion, the SOFA and APACHII score is significantly associated with mortality and strongly predicting mortality. Early predictors of morbidity and mortality, which we can according the predicting score, and provide patients with a detail assessment and proper care, thereby reducing mortality and length of stay.

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