Title: Evaluation of sequential organ failure assessment (SOFA) based models for predicting mortality in ICU patients

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Objective: To evaluate optimal recurrence of SOFA acquisition in severity of organ dysfunctions and the associated mortality rates in critically ill patients. Method: A prospective observational study was conducted from Jan 1 to June 30, 2011. Including randomly selected patients (age >18) admitted to the SICU and MICU of tertiary care hospital, for whom SOFA score was calculated after every 24 hours till 72 hours. Initial, highest and mean SOFA scores obtained during their ICU stay and their correlations with mortality.

Result: Initial, highest and mean SOFA scores correlated well with mortality. Highest score of 11 and mean score of more than 7 indicates mortality > 80% (p<0.001). Highest and mean SOFA scores has more stronger correlation with mortality than initial SOFA score. While analyzing trends in SOFA score during first 72 hours, the mortality rate increases up to 50% when the score increases, 27% to 35% when score remains unchanged and less than 27% when it decreases. Differences in mortality were better predicted during first 72 hours of ICU admission, independent of the ICU stay. Except for initial scores of more than 11 (mortality rate >90%) a decreasing score during the first 72 hours is associated with mortality rate of less than 15%, while an unchanged and increasing score is associated with a mortality rate of 37% when the score was 2 or 7 and 60% when the score was 8 to 11. Conclusion: SOFA score during the first three days of ICU admission is a good indicator of prognosis. This study conducted for the first time in Pakistan and have comparatively same results as done in Belgium.