

The Ability of Early Warning Scores to Predict in Hospital Mortality and ICU Admission for Patients with Covid 19 Pneumonia in the Emergency Department

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Abstract

Introduction: Early recognition of critical patients in crowded environments such as emergency departments is required in Covid 19 pandemic and many early recognition scoring systems are used. In this study, we aimed to determine the prognostic values of these scoring systems. **Material and method:** This retrospective study was performed between March 2020 -May 2020 and 212 patient who have Covid 19 pneumonia were enrolled the study. National Early Warning Score (NEWS), Modified Early Warning Score (MEWS) and quick Sequential Organ Failure Assessment (qSOFA) scores were calculated at the time of admission to the emergency department. Demographic data, mortality, intensive care unit (ICU) admission rates and the prognostic values of the scores were calculated. Receiver operating characteristic (ROC) analysis was used to determine the diagnostic values of scores and the optimum cut-off values were determined by using Youden Index. **Results:** 23 (10.8%) of 212 patients died and 34 (16%) were admitted to ICU. The AUC values of MEWS, NEWS, and qSOFA for predicting mortality in < 65 years old were 0.852 (95% confidence interval 0.708-0.997), 0.882(0.741-1.000) and 0.879(0.768-0.990) and >65 years old, 0.854(0.720-0.987), 0.931(0.853-1.000), 0.776(0.609-0.944) respectively. For ICU admission AUC values of MEWS, NEWS and qSOFA in <65 years old followed as; 0.882(0.783-0.981), 0.914(0.817-1.000), 0.868(0.764-0.973) and 0.845(0.725-0.965), 0.926(0.854-0.998), 0.815(0.676-0.954) in [?] 65 years old. While < 65 years old; MEWS and qSOFA's optimal cut-off values for mortality were [?]² with %90.0 sensitivity %74.7 specificity and [?]¹ with %90.0 sensitivity %74.7 specificity, for [?] 65 years NEWS optimal cut-off is [?]⁶ with 91.7% sensitivity and 76.7% specificity. **Conclusion:** All these three scores have good predictive value for mortality and ICU admission, but NEWS is better than MEWS and qSOFA especially in [?] 65 years old patient with Covid 19 pneumonia.

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