Model for predicting mortality in diabetic ketoacidosis patients

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Abstract

Background & Aim: Diabetes Mellitus (DM) is a major cause of premature mortality globally. One of its acute complications is Diabetic Ketoacidosis (DKA). DKA is a medical emergency wherein abrupt and correct management could prevent patient mortality. Prediction of mortality from DKA could be done using patient's demographics, clinical profile and laboratory parameters. However, locally, there is no prediction model developed yet to predict mortality. This study aims to create an assessment tool that could accurately predict the risk of mortality among DKA patients within the first 24 hours of admission and correlate patient's demographics, clinical profile and laboratory parameters with improvement of survival rate.

Methods: This is a retrospective, cohort study which included 129 admitted adult DKA patients. Statistical analysis used was logistic binary regression. Receiving operating characteristic (ROC) curve was done to validate prediction models.

Results: 6 variables identified to predict mortality are patient's age ≥60 years, severe DKA, non- insulin dependent status, GCS<15, non-normal platelet count and non-normal estimated creatinine clearance. Prediction models developed included and omitted age profile. Cut-off scores of prediction models were validated with the ROC curve. Cut-off score with age was 5 with sensitivity of 73.91% and specificity of 74.70% and the area under the curve is 0.751 which is significant (p=0.0001). On the other hand, cut-off score of the prediction model without age is 4 with sensitivity of 65.22% and specificity of 67.47% and the area under the curve is 0.719 which is significant (p=0.0001).

Conclusion: This study was able to prove that mortality in DKA can be predicted within the first 24 hours of admission using patient's demographics and significant clinical profile in the prediction models developed.

Biography

Kriz-Ann R Hernandez has completed her Doctor of Medicine degree from University of Santo Tomas, Faculty of Medicine and Surgery in Manila, Philippines. She has completed her 3 year's Residency training in Internal Medicine at Jose R. Reyes Memorial Medical Center in Manila, Philippines. She has served as the Chief Resident from 2011-2012. Her research interests are diabetes mellitus and its related complications. Currently, she serves as a Telemetry Senior House Officer in Asian Hospital and Medical Center since March 2017.