

PREDICTION OF THE NEED FOR NIV IN PATIENTS WITH ACUTE EXACERBATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE: A COMPARATIVE STUDY BETWEEN DECAF AND MODIFIED DECAF SCORE

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Background: Exacerbation of chronic obstructive pulmonary disease (COPD) leads to multiple hospital admissions, longer hospital stays, increased treatment costs as well as increased morbidity and mortality. Currently, no optimal scoring system exists that can predict need for NIV in patients with acute exacerbation of COPD. Accurate prognostic tool can help physicians to select the appropriate level of care and preparedness. To compare DECAF [(D) dyspnoea, (E) eosinopenia, (C) consolidation, (A) acidemia, (F) atrial fibrillation] and modified DECAF score [(D) dyspnoea, (E) eosinopenia, (C) consolidation, (A) acidemia, (F) frequency of hospital admission] in predicting the need for NIV in patients with acute exacerbation of chronic obstructive pulmonary disease. **Methods:** This cross-sectional study was conducted in the Department of Respiratory Medicine, NIDCH, Mohakhali, Dhaka from June 2021 to August 2022. A total of 91 patients with acute exacerbation of COPD were enrolled in this study. All patients were subjected to complete medical history taking, chest examination, dyspnoea assessment by extended modified Medical Research Council Dyspnoea (eMRCD), complete blood count, chest radiograph, ECG, and arterial blood gas analysis. Both DECAF and modified DECAF score were calculated and the need for NIV was documented. All collected data were analysed using appropriate statistical formula and SPSS programme.

Results: Out of 91 patients, 20 patients (21.97%) required non-invasive ventilation. The area under the ROC curve of DECAF and modified DECAF score was 0.973 and 0.974 respectively in predicting the need for NIV. The sensitivity, specificity, PPV and NPV of DECAF score were 84.21%, 94.44%, 80.00% and 95.77% respectively at a cut off value of 3. The sensitivity, specificity, PPV and NPV of modified DECAF score were 84.52%, 100%, 100% and 96.51% respectively at a cut off value of 4. **Conclusion:** Both DECAF score and the modified DECAF score are practical and can be calculated easily using simple questions and routine investigations available during the initial admission. Both were good predictors, but modified DECAF was superior in predicting need for NIV in patients with acute exacerbation of COPD

Keywords: COPD, DECAF score, modified DECAF score

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