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The value of individual variables of BODE index and GOLD spirometry in stratifying the severity of COPD

Wondu Reta
Jimma University, Ethiopia

Co-Authors
Samuel Tadessa and **Elsah Tegene**
Jimma University, Ethiopia

Background: Chronic obstructive pulmonary disease (COPD) is a preventable and treatable disease characterized by partially reversible airflow limitation. BODE index is a multi-dimensional tool stands as pneumonic composing the four individual variables [B-the body mass index (BMI), O-the degree of airway obstruction (post-bronchodilator FEV1% predicted), D-Dyspnea scale and E- Exercise capacity measured by 6-minute walk distance test (6M WDT)]; giving the total points of 10; divided into four quartiles. It is used to diagnose, grade the severity, evaluate systemic comorbidities, evaluate the response to intervention and predict the mortality due to the disease.

Purpose: The main purpose of this study is to assess the severity of COPD by using BODE index and its individual variables, and GOLD stage; correlate their values to each other and determine their validity in stratifying the severity of COPD.

Patients & Methods: A hospital based cross-sectional study was conducted among a sampled 80 consecutive COPD patients visiting chest clinic of Jimma University Medical Center (JUMC) located at Jimma town, South west Ethiopia; from May 18 to August 18, 2017 G.C; and the measurement of all individual variables of BODE index were performed according to the American Thoracic Society (ATS), their results were entered into EPI data (3.1) and exported to SPSS (20) for further analysis. Chi square (X^2) test, Spearman correlation, kappa measure of agreement, receiver operator characteristic (ROC) and area under curve (AUC) was applied to determine the correlation and validity of variables/tools in grading the severity of the disease.

Results: Eighty (80) COPD patients were enrolled in the study, Mean of Age (55.1±13.66), BMI (19.98±3.43), 6M WDT (283±84.5), BODE index point (6.17±2.55), FEV1% predicted (42.5±15.6) and Dyspnea scale (2.2±0.7) were achieved. Majority of COPD patients were belonged to quartile IV, relatively increased through the stages if classification was made by BODE index and its components (FEV1% predicted and 6M WDT) but was higher among stage 3/severe if it was based on GOLD stage and dyspnea score. All variables used to grade COPD were positively correlated with each other except with BMI score (inversely correlated). The validity of the variables/tools used in grading severity of the disease was ranked as BODE index, 6M WDT, FEV1%, GOLD stage and dyspnea score in descending order while BMI score had the least/poor validity to predict the aim of the study based on specific results of their sensitivity, specificity, AUC with 95% CI and p-value.

Conclusion: All variables except BMI score were valid to predict severity of COPD.

Biography

Wondu Reta was graduated from Jimma University, Institute of Health in BSc degree in Junior Anesthesiology professional in June 2012 GC and Master's degree in Medical Physiology in October 2017 G.C. He was currently serving Jimma University, Institute of health as Anesthesia care provider, researcher and lecturer of Medical Physiology and Anesthesiology. He was also reviewing different papers related to his professionals on different journals

majore04@gmail.com

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