

Echocardiography and N-terminal-pro-brain natriuretic peptide in assessment of left ventricular diastolic dysfunction in stable COPD in relation to disease severity

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Abstract

Introduction: Left ventricular diastolic dysfunction (LVDD) is found to be frequent in COPD patients. Relationship between airflow obstruction and cardiovascular risk can be explained by inflammation which is considered one of systemic manifestations of COPD.

Objective: To assess the LVDD in COPD patients in relation to disease severity using echocardiography, N-terminal pro-B-type natriuretic peptide (NT-proBNP) and high sensitive C-reactive protein (hs-CRP).
Patients and methods: This prospective study was carried out on 60 stable COPD patients who were recruited from outpatient chest clinics, Tanta University Hospitals. Diagnosis of COPD was made according to criteria of the Global Initiative for Chronic Obstructive Lung Disease. Patients were subjected to medical history and physical examination, chest X ray, pulmonary functions, ECG and echocardiography. Blood samples were withdrawn for assessment of NT-proBNP and hs-CRP.

Results: Diastolic function of the heart was evaluated by echocardiography using: isovolumetric relaxation time (IVRT), deceleration time of early transmitral flow, ratio of the peak velocity of the early E wave/A wave which suggested that LVDD was recorded more in severe/very severe compared to mild/moderate COPD. Significant positive correlations were found between Nt-pro BNP and hs-CRP, IVRT, deceleration time of early transmitral flow and E/A wave ratio. Sensitivity, specificity and accuracy were 83.1, 90 and 0.94% for Nt-pro BNP.

Conclusions: Evaluation of NT-proBNP was important for detection of LVDD in COPD patients, which was correlated with disease severity. Echocardiographic assessment of COPD patients, especially in combination with NT-proBNP can be considered as good diagnostic tools of LVDD in COPD.

Key words: COPD, Left ventricular diastolic dysfunction, NT-proBNP, hs-CRP, Echocardiography



Biography:

Gehan H. AboEl-Magd finished her MD in 2009 from Tanta University in Egypt, has 18 published papers and now works as a professor in Chest Diseases Department, Faculty of Medicine, Tanta University, Egypt. She is a reviewer in many reputed journals

Speaker Publications:

- 1.The utility of maximal oxygen uptake testing as cardiovascular disease risk marker in female patients with rheumatoid arthritis without associated lung disease.
- 2.Treatment outcomes of tuberculosis among new smear-positive and retreatment cases: a retrospective study in two Egyptian governorates.
- 3.Diagnostic yield and safety of medical thoracoscopic versus computed tomography-guided percutaneous tru-cut pleural biopsy.
- 4.Outcomes and safety of bronchial artery embolization in control of massive hemoptysis.
- 5.The prevalence and pattern of pneumonia among Hajj pilgrims: a study of two successive Hajj seasons.

[10th International Conference on COPD and Lungs](#)

Prague, Czech Republic, August 17-18, 2020

Abstract Citation:

Gehan H. AboEl-Magd, Echocardiography and N-terminal-pro-brain natriuretic peptide in assessment of left ventricular diastolic dysfunction in stable COPD in relation to disease severity, 10th International Conference on COPD and Lungs Prague, Czech Republic, August 17-18, 2020

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