Atrial electromechanical delay in patients with chronic obstructive pulmonary disease in acute and stable periods

Gokhan Perincek[1],
Sema Avci[2],
Ferdi Kahraman[3]*

[1]Kars Harakani State Hospital, Department of Chest Diseases, Kars, Turkey
[2]Amasya University Sabuncuoglu Serefeddin Research and Training Hospital, Department of Emergency Medicine, Amasya, Turkey
[3]Gebze Fatih State Hospital, Kocaeli, Turkey

KEYWORDS: atrial electromechanical delay, chronic obstructive pulmonary disease, strain.

CITATION: Cardiol Croat. 2019;14(9-10):229. | https://doi.org/10.15836/ccar2019.229

***ADDRESS FOR CORRESPONDENCE**: Ferdi Kahraman, Gebze Fatih State Hospital, Kocaeli, Turkey.
Phone: +90 530 843 13 63 / E-mail: dr.ferdikahraman.cm@gmail.com

ORCID: Gokhan Perincek, https://orcid.org/0000-0003-2400-6346 • Sema Avci, https://orcid.org/0000-0002-0992-4192
Ferdi Kahraman, https://orcid.org/0000-0002-8546-3252

Objective: The aims of this study were to evaluate atrial electromechanical delay (AEMD) of patients with chronic obstructive pulmonary disease (COPD) in acute and stable periods[1-3] and echocardiographic changes of these patients.

Patients and Methods: A prospective cross-sectional study. *Setting*: Kars Harakani State Hospital Subjects: 45(22 females, 23 males) patients with acute COPD exacerbation and the control group was stable period of the same patients. *Interventions*: The first echocardiography was performed in the first 24 hours. The second echocardiographic examination was performed after 3-month. *Main outcome measures*: Atrial conduction times and systolic-diastolic functions of the right-left heart were evaluated conventional and tissue Doppler Imaging. Plasma levels of CAR and other inflammatory markers were recorded. Statistical analysis was carried out using SPSS software.

Results: At the end of 3-month, lateral/tricuspid, lateral/mitral and septal AEMD were significantly reduced; right ventricle basal, mid and vertical diameters, tricuspid annular plane systolic excursion, Amax tricuspid, tricuspid regurgitant velocity, systolic pulmonary arterial pressure and systolic motion tricuspid; left atrium diameter, left ventricle end-diastolic diameter, interventricular septum thickness, mitral Ea/Aa ratio, systolic motion mitral, systolic motion septal and heart rate differed; CRP, CAR, and neutrophil to lymphocyte ratio were significantly reduced.

RECEIVED:
August 27, 2019
ACCEPTED:
September 16, 2019

LITERATURE

1. Rawy AM, Fathalla D. Left ventricular diastolic dysfunction in patients with chronic obstructive pulmonary disease (COPD), prevalence and association with disease severity: Using tissue Doppler study. Egypt J Chest Dis Tuberc. 2015;64:785-92. https://doi.org/10.1016/j.ejcdt.2015.06.010
2. Ozben B, Eryuksel E, Tanrıkulu AM, Papila N, Ozyigit T, Celikel T, et al. Acute Exacerbation Impairs Right Ventricular Function in COPD Patients. Hellenic J Cardiol. 2015 Jul-Aug;56(4):324-31. **PubMed:** https://www.ncbi.nlm.nih.gov/pubmed/26233773
3. Freixa X, Portillo K, Pare C, Garcia-Aymerich J, Gomez FP, Benet M, et al; PAC-COPD Study Investigators. Echocardiographic abnormalities in patients with COPD at their first hospital admission. Eur Respir J. 2013 Apr;41(4):784-91. https://doi.org/10.1183/09031936.00222511