



SDI Review Form 1.6

Journal Name:	Journal of Advances in Medical and Pharmaceutical Sciences
Manuscript Number:	2014_JAMPS_14459
Title of the Manuscript:	Evaluation of Right Ventricular Diastolic Function in Patients with Chronic Obstructive Pulmonary Disease Using Pulsed Doppler Tissue Imaging
Type of the Article	Original Research Article

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	1. Even if the comparison between the 2 groups is relevant in the present study, the readers would appreciate to see the same analysis in COPD-associated pulmonary hypertension patients (as a third group). 2. Do the values of fractional shortening and ejection fraction reported in Table 2 refer to RV or LV systolic function? This should be specified. I would expect to see RV systolic function parameters such as RVFAC, RVEF or TAPSE. 3. The right ventricular myocardial performance index (RVMPI) is a global functional value reflecting both systolic and diastolic functions, independently from RV geometry. The authors do not report any significant difference in RVMPI between groups 1 and 2, whereas diastolic function is impaired in COPD patients. Since RV systolic is not different between groups, I would expect a lower RVMPI in COPD patients. That needs to be explained more clearly in the <i>Discussion</i> of the revised manuscript. 4. Even if right catheterization is not recommended in stable COPD patients, the lack of hemodynamic values in the present study is a major limitation. Moreover cardiac echo is not associated with 100% sensitivity for PH diagnosis. It is well known that under moderate exercise conditions, mean pulmonary artery pressure may rise significantly in COPD patients.	1. Our study population has a mean PAP of 29.0 ± 5.3 mmHg, and there were no patients with PHT determined by echocardiography 2. Table 2 is divided into two parts according to the other reviewer comment. RV segmental systolic functions determined by Sm were given at tables 4-7. As all the Sm parameters were within normal limits we did not evaluate other parameters of RV function 3. The reason for the indifferent RVMPI might be the small sample size which is added to the discussion part. 4. We agree with the reviewer. However this study was not primarily designed to investigate the predictors of mortality. 5. The aim of our study is to compare the global and segmental RV diastolic function by using pulsed TDI in patients with stable COPD without PHT based on echocardiography findings to normal control subjects. We think that it may be a strong



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	The development of PH is usually late in COPD history. However, mean PAP up to 25 mm Hg is a stronger predictor of mortality in COPD compared to FEV1 or gas exchange variables. This should be more underscore in the present manuscript. 5. The authors do not provide any explanation nor hypothesis for their TDI findings. Why is RV diastolic function impair in stable COPD patients? Is it really an early state before the development of PH? Or might it be a consequence of the modified load conditions in COPD patients?	suggestion to give an explanation or a hypothesis for our TDI findings. We added the reviewer comment to conclusion part
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<u>Minor</u> REVISION comments	1. Coronary artery disease (CAD) was considered as an exclusion criteria in this study. Since it is a frequent associated morbidity in COPD patients, was CAD systematically detected (exercise testing) or not? 2. How were measured the diameter of the right ventricle and the right atrium? (end-diastolic time? On which view?) 3. Absolute <i>P</i> values should be displayed in all Tables, not only values <0.05. 4. The load-dependency of the TDI indices used in the present study is not enough underscored. This should be stated at the end of the <i>Discussion</i>. 5. I completely agree with the authors about the usefulness of segmental assessment of RV wall. In the pathophysiology of RV failure, it has never been shown that one segment is more affected than another one on a functional view. 6. The reference list needs to be updated with recent publications, especially considering the field of RV function and PH. I would suggest first to include the paper from Seeger W. et al. about PH classification in Chronic Lung Disease (J Am Coll Cardiol 2013;62:D109-116). Moreover guidelines for echographic assessment of the right heart in adults have been published in 2010 by Rudski LG et al (J Am Soc Echocardiogr 2010;23:685–713).	1. Cooronary artery disease was excluded as during routine examination. If there is susspession of CAD further tests such as exercise testing or MPS were planned. However we did not mentioned this in the manuscript to keep it less. 2. RV and RA diameters were measured from apical 4 chamber view. 3. P values were provided under tables. Since it looked too busy with too many numbers (including $p>0.05$), only significant p values were given underneath, and others were addressed as non-significant 4. There is an on-going debate on load-dependency of TDI indices (Shan K et al. Relation of tissue Doppler derived myocardial velocities to myocardial structure and -adrenergic receptor density in humans. J Am Coll Cardiol. 2000;36:891– 896. Oki T et al. Clinical application of pulsed Doppler tissue imaging for assessing abnormal left ventricular relaxation. Am J Cardiol 1997;79:921–928 Rozich JD, et al. Am J Kidney Dis 1991;17:277-85 Abid L et al Saudi J Kidney dis and transplantation 2014;25: 756-61). Since it is controversial yet and there was no significant difference in terms of blood pressure and PAP between groups, this issue was not considered 6.Done
<u>Optional/General</u> comments	The authors report a clinical observation comparing right ventricular diastolic function in stable COPD patients and in controls. They sought to investigate global and segmental RV diastolic function by using pulse tissue Doppler imaging in COPD patients without pulmonary hypertension. The main finding is that RV diastolic	



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	function may be early impaired in these patients. RV assessment through transthoracic cardiac echo is challenging in COPD patients mainly because of pulmonary hyperinflation. TDI may be more sensitive than conventional cardiac echo to show diastolic dysfunction. The manuscript is well written. I have some comments.	
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