Reviewer’s report

Title: Left Ventricular Outflow Tract Velocity Time Integral Outperforms Ejection Fraction and Doppler-derived Cardiac Output for Predicting Outcomes in a Select Advanced Heart Failure Cohort

Version: 0 Date: 14 Mar 2017

Reviewer: Bruno Pinamonti

Reviewer’s report:

Interesting paper of potential clinical and practical impact on patient management. An "old" method of non-invasive hemodynamic assessment is revisited and demonstrated prognostic significance in a few patients with severe heart failure and low output.

Some comments/queries:

1 - methods:

- why patients with tachycardia were excluded from the study?

- no echo-Doppler data on diastole were assessed. Why?

- cause of death was not analyzed? How were managed patients who died of non cardiac causes?

- reproducibility of echo-Doppler parameters?

2 - statistical analysis: Univariate cox regression analysis... set of predefined variables... In results also other variables were considered. Please clarify

3 - discussion

- the hemodynamic difference between ejection fraction (ratio of LV total stroke volume and end-diastolic volume) vs LVOT VTI (index of antegrade LV stroke volume) could be helpful to discuss, thus explaining the superiority of the second on predicting adverse prognosis in HF

- a potential limitation of the study is in my opinion the fact that no data about evolution of echo-Doppler parameters during follow-up and their potential prognostic significance were available?

4 - table 1: if all study patients were in advanced HF, why there were some in NYHA class I-II? Presence of aortic regurgitation was an exclusion criteria. So how do you explain that AR was present in 16% of patients??

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