Reviewer's report

Title: Current Clinical Applications of Spectral Tissue Doppler Echocardiography (E/E’ ratio) as a Noninvasive Surrogate for Left Ventricular Diastolic Pressures in the Diagnosis of Heart Failure With Preserved Left Ventricular Systolic Function

Version: 2 Date: 22 March 2007

Reviewer: Quirino Ciampi

Reviewer's report:

General
The authors described the current clinical application of tissue Doppler echocardiography as non-invasive surrogate for pulmonary capillary pressure measurement in the diagnosis of acute and chronic heart failure with preserved left ventricular systolic function.
The authors have consolidated experience in this subject.
The paper is very interesting and well written.
The authors analyzed clearly and in detail the link between pulmonary capillary hypertension and congestive heart failure, the reliability of tissue Doppler as a non-invasive surrogate measurement of left ventricular diastolic pressure, and the usefulness of tissue Doppler ultrasound in predicting exercise tolerance. In fact, the authors showed that poorer exercise capacity was related to elevated LV filling pressure, irrespective of systolic function.
The authors, moreover, underlined the accuracy of tissue Doppler echocardiography in the emergency diagnosis of acute heart failure with preserved systolic function similarly to BNP, with independent prognostic information and complementary role in the nondiagnostic middle range of BNP.
However, there are some suggestions:

Major Compulsory Revisions
1. It is very hard to analyze the severity of diastolic dysfunction in patients with permanent atrial fibrillation. Spectral tissue Doppler ultrasound may play an important role in this subset of patients. Moreover it may highlight the role of diastolic dysfunction in the patient population presenting with acute dyspnoea and normal systolic function. The authors should describe the role of tissue Doppler ultrasound in the evaluation of diastolic dysfunction in patients with permanent atrial fibrillation.
2. In clinical studies the investigators used septal or lateral or average E/Ea ratio. The authors should suggest, in a clinical implication session, which parameter (septal or lateral or average E/Ea) should be assessed in clinical practise.

Minor Essential Revisions
1. Page 6, line 4 E/Vp and E/Ea, the abbreviations are not indicate in the text.
2. Page 9, line 23 > 10 may be in parenthesis.
3. References: please, correct in reference 28 Peptide with peptide; in reference 29 papazachou with Papazachou; in reference 72 relationship with Relationship (first word), in reference 89 Peptide with peptide; in reference 96 dyssinchrony with dyssynchrony. Why only reference 91 has all authors?

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.