Reviewer's report

Title: Echocardiography-based Left Ventricular Mass Estimation. What Does Really Mean Hypertrophy?

Version: 1 Date: 9 May 2005

Reviewer: Maurizio Galderisi

Reviewer's report:

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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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.

Declaration of competing interests:

Very good point of view about echocardiography-based LV mass estimation. The review is very comprehensive and easy to read.

Major Concerns

1. To date, two-dimensional echocardiography has a better feasibility than standard M-mode echocardiographic for determination of LV mass into reference laboratories (see and reference papers of both Devereux and Gottdiener (J Am Coll Cardiol 1995;25:424-430) of the last years). 2D assessment makes possible the calculation of LV mass even in very obese patients (e.g., see data from the Strong Heart Study where the mean BMI is even more than 30 Kg/m2)

2. Please, specify better how the indexation of LV mass for height and derivates (e.g., height powered to 2.7) rises from the need to do not underestimate LVH in overweight and obese patients, both very frequent conditions in the hypertensive population.

3. About reproducibility of LV mass, it is important to give opportune citation of two studies, the PRESERVE (J Am Coll Cardiol 199934(5):1625-1632) and RES (J Hypertens 1999;17:1955-1963), where the variability of measurements for LV mass has been opportune assessed.

4. It is also important report some experiences from different groups (Mujesan ML, Verdecchia P, Devereux RB – LIFE Study) which clearly demonstrated that LVM reduction corresponds to reduction of cardiovascular risk. In particular, recent data from the LIFE Study (Am J Med 2004 and
others) are very comprehensive in this regards and need opportune discussion.

5. A very recent experience has demonstrated the importance to calculate age-normalized values of relative diastolic wall thickness to define correctly left ventricular geometric patterns (Hypertension. 2005 Jan;45(1):64-8. Epub 2004 Nov 22). These findings have to be considered carefully. In addition, it is important also to specify further the impact of LV concentric remodeling, as a pre-hypertrophic stage, on prognosis (Koren M, Ann Intern Med, Verdecchia, JACC).