Reviewer’s report

Title: Age and gender specific normal values of left ventricular mass, volume and function for gradient echo magnetic resonance imaging: a cross sectional study

Version: 1 Date: 28 April 2008

Reviewer: Norbert Watzinger

Reviewer’s report:

General comment
The authors assessed left ventricular (LV) mass, volumes and function by cardiac magnetic resonance imaging in order to provide normal values for these morphological and functional parameters and to show gender- and age-related differences. Although, the topic has already been studied by others as the authors state in their discussion, the major strength of this manuscript lies in the LV volumetric data provided over a large age range from 11 to 81 years. Overall the paper is well written and the data are clearly presented.

Major compulsory revisions
1) Recruitment of the scanned cohort should be described in more detail. Were these volunteers admitted for other reasons or were they actively recruited from the local community? How many individuals and examinations had to be excluded, because of low image quality or other reasons?
2) Data derived from elderly individuals (older than 60 years) rely on measurements in only seven subjects. This should be acknowledged in the limitations.
3) Was testing for normal distribution done in the cohort before applying unpaired Students’s t test or ANOVA? Although, the results might not change that much, tests like the Mann-Whitney rank sum test or ANOVA on ranks are more appropriate in a non-normally distributed population.

Minor essential revisions
Results section, paragraph 1
I should read “Data from 94 of the 96 subjects have,…..”

Results section, paragraph 4 and 5
All volumetric data in the text normalized for body surface area (BSA) should be given in ml/m2 as in tables and figures.

Discretionary revisions
Some data regarding LV mass and wall stress have already been published from this cohort, as the authors state in the results section and the discussion. The authors write in their previous paper (Cain PA, et al. Clin Physiol Funct Imaging 2007; 27: 255), that circumferential wall stress did not change with age in
contrast to LV mass. In the current manuscript a gradual decline in ejection fraction with advancing age is found, mainly ascribed to a lesser decline in endsystolic volumes compared to enddiastolic volumes. Therefore, enddiastolic and endsystolic wall stress calculations could be of interest to clarify the gradual increase of natriuretic peptides with increasing age.

**Level of interest:** An article of importance 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:**

I declare that I have no competing interests