Author's response to reviews

Title: No Relationship Between Left Ventricular Radial Wall Motion and Longitudinal Velocity and The Extent and Severity of Noncompaction Cardiomyopathy

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Version: 2 Date: 22 February 2012

Author's response to reviews: see over
Dear prof. Picano,

Please find our revised manuscript entitled “No Relationship Between Left Ventricular Radial Wall Motion and Longitudinal Velocity and The Extent and Severity of Noncompaction Cardiomyopathy”:

Kadir Caliskan, Osama I Soliman, Attila Nemes, Ron T van Domburg, Maarten L Simoons and Marcel L Geleijnse.

The revision was performed according to the comments of the reviewers and editors, what we found very useful. Indeed we accepted all issues raised by the reviewers and we modified the manuscript accordingly. The changes in
the revised manuscript were highlighted with ‘track changes’ and checked for confirmation to the journal style. We
do believe that the paper improved significantly and merits place at the journal name.

Yours sincerely,

Kadir Caliskan

Marcel L Geleijnse

On behalf of the authors
Reviewer's report

Title: No Relationship Between Left Ventricular Radial Wall Motion and Longitudinal Velocity and The Extent and Severity of Noncompaction Cardiomyopathy

Version: 1 Date: 11 January 2012

Reviewer: Albert Varga

Reviewer's report:

The Authors of the present manuscript analyzed the radial wall motion and longitudinal wall velocity in patients with non compaction cardiomyopathy according to the extent and severity of non compaction. They studied 29 consecutive patients suffering of non compaction cardiomyopathy with echocardiography. They principal finding was that that in patients with NCCM both radial and longitudinal LV wall motion is impaired but not related to the extent and severity of non compaction. The study is interesting. I have the following comments and questions:

Major Compulsory Revisions

1. In the abstract, the Authors stated, that “The study comprised 29 patients in sinus rhythm (age 41 ± 15 years, 15 men), who fulfilled stringent diagnostic criteria for NCCM and compared to 29 age and gender matched healthy controls”. The control groups served for the derivation of normal systolic wall velocities. The Authors calculated a “normalized Sm values”. Please give an explanation why it was necessary. It would be good to know the absolute values in the patients group, as well.

Because systolic wall velocities are different in the different LV walls in normal subjects the values were normalized (that is reported as a percentage from normal velocity in that specific wall). By doing this in Figure 3 it is possible to recognize immediately that some NCCM patients have normal function and others impaired function (1.0 is normal). If absolute values are used in Figure 4, it may be that an incorrect relation (or non-relation) is found between NC score and function as assessed by TDI because walls with lower NC scores (septal!) have lower TDI values normally. Absolute Sm values were now added to Table 1.

2. The exact assessment of the radial left ventricular wall motion/thickening could be difficult in segments affected by non compaction. According to my opinion, a more qualitative analysis is warranted in this case. What was the inter and intraobserver variability regarding the wall motion analysis?
We agree that the exact assessment of the wall motion analysis is subject to observer variability. We calculated the interobserver variability both in noncompacted and compacted LV segments. Results were not different (segmental agreement 0.76 vs. 0.76 and kappa value 0.60 vs. 0.56, respectively) and comparable to an earlier report of our group in a general echocardiographic population (segmental agreement 0.76, kappa 0.59). This is now added in the Results section and discussion (including a reference).

3. The patients were selected according to the Jenni criteria. One of the requirements of these selection is “a NC/C myocardial thickness ratio #2 measured at the moment of maximal thickness in end-systole at the parasternal short axis”. However, when the NC/C ratio was created, the Authors considered segments with NC/C ratio >1.0 but <2.0, with a given a score 1. Presumably, not all NC segments had a NC/C ratio more the 2, but the description of the methodology in this fashion is a little bit superficial, and therefore needs more elaboration. In addition, the definition of maximal NC/C ratio is not clear enough.

We clarified this remarks in the section methods, describing the extent and severity of noncompaction.

4. The number of heart failure patients is not clear. In table I: presentation heart failure N=16, but 18 patients were either in NYHA II or III stadium, and in table II heart failure n=17. Please, clarify.

The numbers both in table 1 and 2 were corrected.

5. The patients without heart failure had a Normalized mean Sm close to 100%. Maybe it would be interesting to comment this data in the discussion.

This is now added this in the discussion.

6. The discussion section is weak. The Authors should discuss the results in regard to the clinical implications of the new findings and it would be desirable to notice the limitations of the study, as well.

We added some additional remarks and limitations of the study in the Discussion.

Minor Essential Revisions

1. NCCM patients had a wall motion score index of 1.68 ± 0.43. Mean or average
Mean ± SD. We added this to Table 2.

2. *NCCM patients had a normalized Sm of 82 ± 20%. Mean or average*

Mean ± SD. We added this to Table 2.

3. *There are some typographical errors throughout the manuscript.*

The manuscript is thoroughly revised by a native English speaker for the English language usage and topographical errors and his contribution is mentioned in the Acknowledgements.

4. *It would be desirable to add some clips/movies to the manuscript*

This is added as movie 1A and B.

*Level of interest: An article of limited interest*

*Quality of written English: Needs some language corrections before being Published*

The manuscript is thoroughly revised by a native English speaker for the English language usage and his contribution is mentioned in the Acknowledgements.
Reviewer's report

**Title:** No Relationship Between Left Ventricular Radial Wall Motion and Longitudinal Velocity and The Extent and Severity of Noncompaction Cardiomyopathy

**Version:** 1  **Date:** 20 January 2012  **Reviewer:** Rolf Engberding

**Reviewer's report:**

This manuscript covers a very important issue. Although increasing numbers of papers addressing the left ventricular function in case of noncompaction cardiomyopathy have been published, the information about regional function in noncompacted left ventricular segments compared to compacted segments is limited and even controversial.

The data presented in this manuscript are new. The methods used to assess regional left ventricular function carry the known limitations. But there are only limited alternatives using ultrasound techniques. The limitations are adequately discussed. The paper can be strongly recommended for publication with minor alterations.

We thank the reviewer for his kind remarks.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Declaration of competing interests:**

'I declare that I have no competing interests'