Reviewer's report

Title: Left Ventricular Filling Pressure assessed by Exercise TDI was correlated with Early HFNEF in Patients with Non-obstructive Hypertrophic Cardiomyopathy

Version: 2 Date: 24 March 2014

Reviewer: David MacIver

Reviewer's report:

The aim of this paper was to assess the left ventricular filling pressure indirectly (non-invasively) using E/Em ratio derived from echocardiography.

The study was well designed and executed. There is some overlap with previous studies such as (Nagueh Circ 2003;108:395-398) although I believe the measurements following exercise is new.

Recommended revisions:

The limitations of E/Em in measuring LVFP should be discussed in greater detail.

Exclusion criteria included LVOT obstruction - it should be noted that this was at rest unless LVOTO looked for during or after exercise.

How many patients were screened and excluded from the study?

It is stated that “LVEF was calculated by the Devereux formula”. This should read “LV mass was calculated by the Devereux formula”

Table 2 should include Baseline Sm (and if available Stress Sm) since Sm generally correlate with Em.

Figure 1 only shows the patients whose E/Em rose following exertion, a preselected a relatively group. It would be much better to include all individuals in the study in this figure to assess random variation better.

In the discussion, it states that TDI can diagnose early HFNEF. I think it would be more honest to say that “E/Em may be rise in a minority patients following exercise in which it is normal at rest. This may indicate a rise in filling pressure during exertion and mild HFNEF”.

You state that “diastolic dysfunction ….causing… exercise intolerance”. However, it is also possible that the cause of exercise intolerance is secondary to inability of the stroke volume to increase appropriately (eg. Critoph et al Heart. 2014;100:639-46. Lele et al. Circulation. 1995;92:2886) due to abnormal sarcomeric protein causing abnormal contractility and reduced inotropic reserve.

It should be emphasised that the difference in Stress E/Em appears mainly driven by the lower Em since mitral E wave peak velocity is not statistically different between the groups.

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests’