Reviewer's report

Title: Prediction of Left Ventricular Reverse Remodeling after Therapy with Angiotensin-Converting Enzyme Inhibitors or Angiotensin II Receptor Blockers and beta Blockers in Patients with Idiopathic Dilated Cardiomyopathy

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Reviewer: Bogdan Alexandru Popescu

Reviewer's report:

Matsumura et al sought to identify predictors of LV reverse remodeling (LVRR) after therapy with ACE-I/ARBs and beta blockers in a group of 44 patients with idiopathic dilated cardiomyopathy.

I have several comments related to this article. The idea is not new, the authors themselves have published before on this topic and the number of patients is relatively limited.

Major Compulsory Revisions

1. It is not clear why the LVRR in this setting was defined as normalization of left ventricular size and contractility (LV end-diastolic dimension # 55 mm and fractional shortening # 25% at the last echocardiogram) since the same group reported in 2013 that LVRR, even if it is not marked, is associated with a favorable prognosis in this setting. (Matsumura et al. Am J Cardiol 2013;111:106-10).

The same conclusion was also reported before by Merlo et al. in 244 patients (Prevalence and prognostic significance of left ventricular reverse remodeling in dilated cardiomyopathy receiving tailored medical treatment. J Am Coll Cardiol 2011;57:1468-76.) The main result of their study was the observation that about one-third of patients with IDC surviving 2 years showed LVRR at mid-term follow-up on tailored medical therapy and there was not only a clear prognostic value of the complete left ventricular contractility and dimension restoration, but also a role for progressive improvement of left ventricular dysfunction and dilation during the mid-term follow-up for all the major cardiovascular events related to IDC.

2. Moreover, since the timing of the follow-up visits in the current study was quite variable (mean follow-up period of 4.7 ± 3.3 years, range 5 months to 12 years) it would have been more suitable to define LVRR as a percentile decrease in LV size and increase in LV function.

3. It is also not clear why the authors decided to use LV diameters in absolute values and LV FS as ecocardiographic criteria for the diagnosis of IDC and LVRR instead of using indexed LV diameters/volumes and LVEF? This should be explained and the analysis repeated.

4. The statement that „this is the first article that presents a predictor of LVRR in patients with IDC after therapy with ACE inhibitors or ARBs” does
not hold true. Kubanek et al. published in 2013 a study on predictors of LVRR in 44 pts with IDC M and more than 90 % of these pts were receiving ACE and betablockers. (Kubanek M, et al. Novel predictors of left ventricular reverse remodeling in individuals with recent-onset dilated cardiomyopathy. J Am Coll Cardiol 2013;61:54-63.)

5. The correlation between atrial fibrillation and LVRR was not statistically significant in the present study (“The prevalence of atrial fibrillation tended to be higher in patients with LVRR than in those without, 40% vs. 14%, p = 0.067”) and the pathophysiological scenario proposed by the authors as an explanation for their finding is not very convincing. A higher sample size would be needed to clarify this issue.

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

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.