Reviewer's report

**Title:** Relationship between B-type natriuretic peptide levels and echocardiographic indices of left ventricular filling pressures in post-cardiac surgery patients

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**Reviewer:** Quirino Ciampi

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The authors described the value of treadmill stress echocardiography in a patient with exercise-induced LV outflow tract gradient.

The authors concluded that the treadmill stress echocardiography may be useful in the clinical evaluation and therapeutic decision in patients with hypertrophic cardiomyopathy without LV outflow tract obstruction at rest.

It is very interesting the use of exercise stress echocardiography in hypertrophic cardiomyopathy, for assess the presence of exercise-induced hypotension (risk factor for sudden cardiac death in young patients (Olivotto J et al J Am Coll Cardiol 1999; 33: 2044-51) or new wall motion abnormalities (Okeie K et al J Am Coll Cardiol 2000) exercise induced LVOT gradient (Marwick TM et al Am J Cardiol 1995, Henein MY et al Am J Cardiol 1997)

However there is an important problem: the use of double chamber pace-maker in hypertrophic cardiomyopathy.

1. Implantation of a dual-chamber pacemaker has been proposed as a therapeutic alternative obstructive hypertrophic cardiomyopathy. The mechanism of the therapeutic effect derived from pacing is unclear, but it is proposed that the initiation of the electrical impulse in the apex of the right ventricle alters the systolic contraction sequence of the basal septum, leading to a reduction in the outflow gradient.

2. The use of pacemakers in this setting has been dampened by results of randomized clinical trials showing a large placebo effect and no significant reduction in LVOT gradient and no significant improvement in symptoms (the degree of improvement is less than that achieved with the other therapies). Thus, dual-chamber pacing is limited to patients who have coexisting illnesses that are contraindications to other therapies or those who require pacing for bradycardia. (Nishimura RA et al N Engl J Med 2004, 350;25)

3. The M-Pathy study demonstrated that pacing cannot be regarded as a primary treatment for obstructive hypertrophic cardiomyopathy, in fact with randomization, perceived symptomatic improvement was most consistent with a substantial placebo effect, modest reduction in outflow gradient was achieved in most patient.

4. Betocchi et al (Am J Cardiol 1996;77:498-502) demonstrated that pacing impaired active diastolic function and increases filling pressures: these latter
effects were potentially detrimental in patients with HC in whom diastolic dysfunction was present.

5. About the relationship between double chamber pace-maker in hypertrophic cardiomyopathy and exercise tolerance, Nishimura et al (J Am Coll Cardiol 1997;29:435–41) demonstrated that there was no significant difference in the exercise time between the AAI arm and the baseline state, exercise duration in the DDD pacing arm was not significantly different from that in the AAI backup mode and maximal oxygen consumption achieved in either the DDD mode or the AAI mode was not significantly changed from the baseline value.


Level of interest: Reject as not of sufficient priority to merit publishing in this journal

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