

HEART RATE REDUCTION STRATEGY IMPROVES SURVIVAL IN CHILDREN WITH SEVERE DILATED CARDIOMYOPATHY

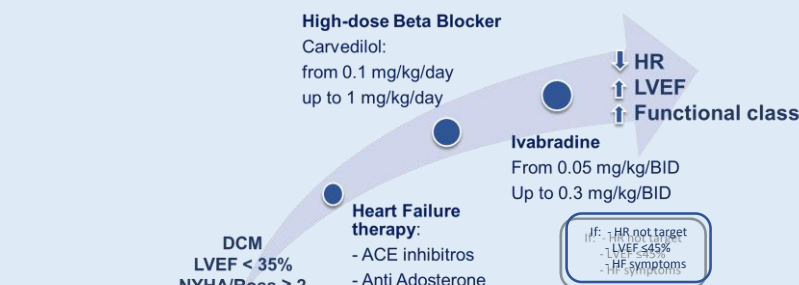


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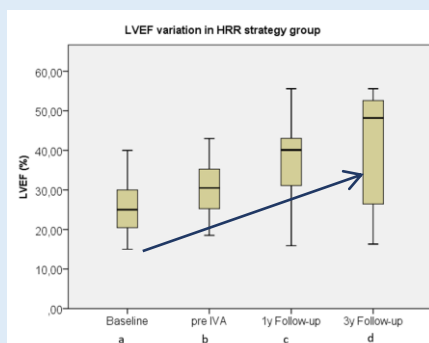
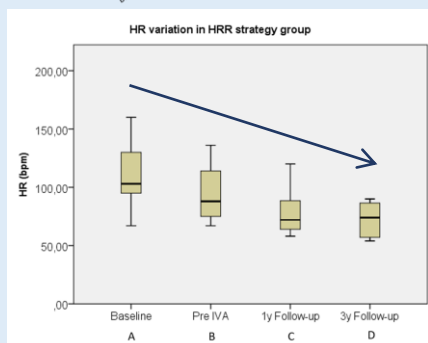
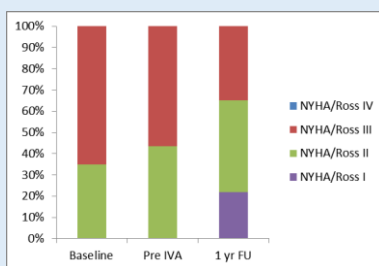
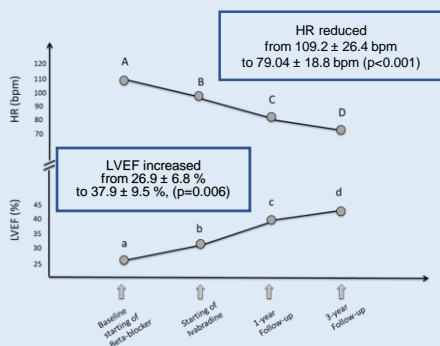
Background: chronic HF due to dilated cardiomyopathy (DCM) remains a significant medical challenge in pediatric population. There is paucity of evidence about pharmacological management of this population.

Purpose: assess the long term cardiovascular outcomes of heart rate reduction strategy (HRR) using ivabradine in children affected by chronic heart failure (HF).



Methods: We conducted a retrospective cohort study including all children with end-stage DCM and severe LV dysfunction (LV ejection fraction < 35%) treated with HRR strategy. We analyzed medical records before starting treatment, at 1 year, and at 3 years after reaching the maximum therapeutic dosage.

Results: 38 patients were treated with ivabradine in HRR strategy. After 1 year, HRR strategy significantly reduced heart rate from a mean value of 109.2 ± 26.4 bpm to a value of 79.04 ± 18.8 bpm ($p < 0.001$). The ejection fraction increased from $26.9 \pm 6.8\%$ to $37.9 \pm 9.5\%$ at 1 year ($p = 0.006$) of follow up. NTproBNP levels have been reduced from a mean value of 4013,26 pg/ml pre ivabradine start, to a mean value of 580,5 pg/ml after 1 year of follow up in medical therapy ($p = 0.2$). Clinically, functional class was improved: the 42% of patients were in NYHA class III-IV before ivabradine start, versus 11% after ivabradine treatment. Long-term cardiovascular outcome was significantly improved with HRR strategy, when compared to a group of patients treated with conventional treatment ($p < 0.0001$).



Conclusion: Treatment with HRR strategy, in addition to standard HF therapy, seemed to be effective in reducing the incidence of acute adverse events, improving ventricular function and functional NYHA classe in children with DCM and chronic HF.