

**Long term results of heart rate reduction by beta blockers in children affected by left ventricular dysfunction**

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**Objectives:** Heart rate is strongly related to prognosis in heart failure (HF). Although beta blockade showed significant benefit in adult population, these drugs did not show the same benefit in children with HF. No data are currently available on baseline heart rate and treatment reduction in HF children. Aim of the study was to assess the long term effect of heart rate reduction (HRR) on cardiac function and remodelling in children.

**Methods:** We evaluated retrospectively the effect of long term HRR by beta blockade in children affected by left ventricular dysfunction. NYHA/Ross class, weight, and height, HR, blood pressure, echocardiographic parameters (LVEDD, LVESD, SF, EF) were recorded before treatment, after 1 month of maximal dose tolerated, at 1 year, at 3 year.

**Results:** 90 patient (48% male) are included in this analysis. Median age at the beginning was 6.5 yrs (range 0-18 yrs). 66% of children had idiopathic cardiomyopathy, 15% after surgery. At the beginning 80% were in Ross/NYHA classe > II and growth failure was present in 60%. Beta blockade significantly reduced HR > 20% in the 3 months after beginning of treatment without significant reduction of blood pressure. LVEDD and LVESD significantly reduced at 1 year after treatment with significant increase of EF (34.3% + 8.2 % vs 45.2 + 7.6 %, p< 0.001) and after 3 year (34.3% + 8.2 % vs 48.3 + 6.9 %, p< 0.001).

**Conclusions:** In children with left ventricular dysfunction, long term HRR induced by beta blockade improves LV function. Further studies are required to evaluate heart rate in children with HF and its prognostic value.