

**Clinical outcome and echographic features of patients with repaired tetralogy of Fallot and biventricular pacing.**

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**Introduction:** Right heart failure is a common feature in patients with repaired tetralogy of Fallot (TOF), right ventricular (RV) dysfunction and right bundle branch block (RBBB). Biventricular pacing (BVP) has been described as a potentially useful therapeutic in some cases. We aimed to investigate the clinical outcome and dyssynchrony echocardiographic characteristics of patients with repaired TOF and BVP.

**Methods:** A systematic retrospective study of all of the patients of CHU de Bordeaux with repaired TOF and BVP was realized. Clinical NYHA status and exercise test performance were retrieved before and 6 months after BVP. All patients benefited from an echocardiography with dyssynchrony measures in spontaneous rhythm, RV pacing and BVP.

**Results:** 10 patients (7 male,  $36,6 \pm 13$  years old) were retrieved from our database. Surgical repair had occurred at the age of  $7,4 \pm 5,8$  years. BVP was effective since  $18 \pm 10$  months.

After 6 months of BVP were noted a significant improvement in NYHA class ( $1,3 \pm 0,4$  vs  $1,8 \pm 0,6$ ,  $p=0,05$ ) and exercise test capacity ( $93 \pm 22$  W vs  $78 \pm 14$  W,  $p<0,05$ ).

In spontaneous rhythm (SR), a significant inter-ventricular dyssynchrony was found ( $41 \pm 13$  ms,  $p<0,01$ ) as well as late activation of RV lateral wall (electrosystolic delay:  $42 \pm 22$  ms vs lateral LV wall and  $49 \pm 30$  ms vs interventricular septum;  $p<0,01$  for both). This dyssynchrony is corrected in biventricular pacing (inter-ventricular delay  $8,6 \pm 6,4$  ms electrosystolic delays respectively  $25,5 \pm 13$  ms and  $12 \pm 9$  ms,  $p<0,01$  vs SR). RV pacing is responsible for late activation of LV lateral wall ( $36,5 \pm 30$  ms)

**Conclusion:** BVP pacing in selected patients with repaired TOF, BVP significantly improves dyssynchrony parameters. This is associated with significant improvement of clinical status.