

had improvement of their respiratory functional tests. All patients had improvement of their right ventricular function (Fig. 1) and none of them developed any chronic lung allograft dysfunction. Median follow-up after lung transplant was 397 months (min: 265; max: 562). One patient died of pulmonary infection complication at 14.5 months after lung transplant.

**Conclusion** DLT followed by percutaneous ASD closure is an efficient therapeutic approach in patients with end-stage ASD associated PAH that may offer an alternative option to HLT.

**Keywords** Lung transplant; Atrioseptal defect; Pulmonary arterial hypertension; Eisenmenger syndrome

**Disclosure of interest** The authors declare that they have no competing interest.

<https://doi.org/10.1016/j.acvdsp.2019.06.016>

## PC 9

### Early detection of left ventricular failure in right ventricular congenital heart diseases

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#### Abstract

**Background** Early detection of left ventricular (LV) failure is crucial to improve prognosis of patients with right ventricular (RV) overload.

**Objectives** We aim to assess whether LV function is precociously affected in 2 surgical porcine models of moderate (Fallot repaired) and severe RV dysfunction (progressive pulmonary hypertension HP) at in vivo and in vitro levels.

**Methods** Three animals of each surgical group were compared with 6 controls/Sham. 4 months after surgeries, LV function was evaluated using echocardiography/strain compared with conductance catheter. At cellular level using isolated cardiomyocytes, calcium transients amplitude with relaxation time associated and sarcomere shortening were recorded using Ionoptix

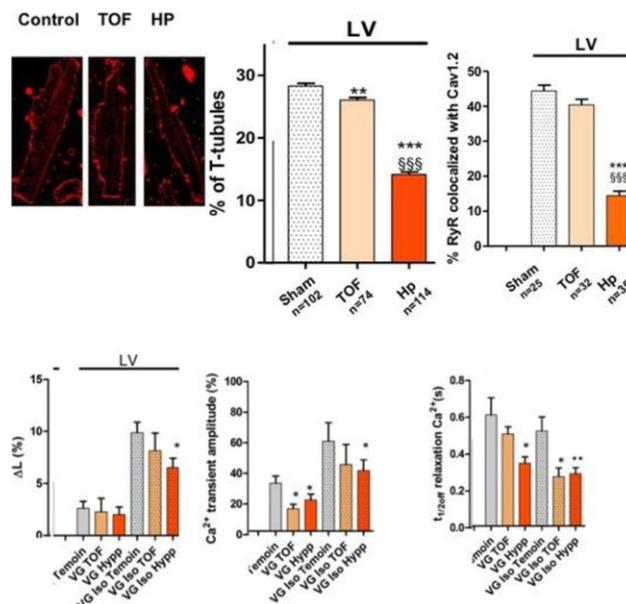


Fig. 1

system. T-tubules network integrity (DI-4-ANEPPS) and colocalization (Immunofluorescence) between main Excitation/Contraction (EC) actors (Ca<sup>2+</sup>+v1.2-Ryr) were analyzed. Contractile reserve was evaluated by adrenergic stimulation in-vivo and in-vitro (Dobutamine-isoproterenol).

**Results** Despite RV dysfunctions in both groups, LV present hemodynamic impairment only in HP group (Longitudinal strain 9 versus 18%. Conductance catheter with dobutamin: Elastance arterial 7.7 versus 1.32, SV 14 versus 75 ml and tau (relaxation) 49 versus 27,  $P < 0.05$ ). In cardiomyocytes, we observe decrease of Ca<sup>2+</sup> transient amplitude and cardiomyocytes contraction, acceleration of Ca<sup>2+</sup> relaxation time, T-tubule network desorganisation and Cav1.2/Ryr decoupling (Fig. 1).

In vivo and in vitro, adrenergic stimulations increase dysfunction.

**Conclusion** In vitro experiments pointed early abnormalities in LV EC particularly after adrenergic stimulation. A better understanding of cellular alterations could lead to survival improvement.

**Disclosure of interest** The authors declare that they have no competing interest

<https://doi.org/10.1016/j.acvdsp.2019.06.017>