Objective To determine the quality and limitations of this technique to study the intracardiac anatomy in complex outflow tract defects. The secondary objective is to generate the CT scan views in preoperative assessment fitting precisely to the surgical views.

Methods and results We performed CT scans with high resolution in 13 heart specimens with double outlet right ventricle. All 3D images were produced with a 3D reconstruction platform from Paris Descartes University. The 3D view from the right ventricle showed the anatomic details for all hearts. We described the VSD, its localization, borders and surface. We described also the relationship with the aorta and the pulmonary trunk and the conal septum (length and orientation). The 3D view from the right atrium was more difficult then expected and needs to be improved.

Conclusion This study summarizes the role of 3D scan reconstruction in congenital heart diseases as an imaging modality to increase the precision of preoperative assessment.

The author hereby declares no conflict of interest

0229
Intra-aortic balloon pump in children: single-centre experience and overview of practices
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Background Intra-aortic balloon pump (IABP) is a commonly used method of temporary circulatory support in adults. Despite the availability of paediatric size balloons, the use of IABP in children is currently not widespread.

Aims To describe our practice of IABP in children and to review its indications.

Methods Single-centre retrospective study. We reviewed the medical records of all paediatric patients (<18 years) who were supported with IABP from April 2010 to April 2015. We compare our practice with those reported in Pubmed (37 articles).

Results During this period 7 patients (6 boys) had a circulatory support with IABP. Mean age was 12.1 years (10-14) and mean weight was 46.1kg (30-61). All were mechanically ventilated and received isotropic support at the time of IABP deployment. 2 IABP were started before surgery to treat acute heart failure (1 myocarditis and 1 ischemic condition). The major indication for IABP was postoperative hemodynamic deterioration (n=5). 4 of them were related to suboptimal cardioplegia in a context of left ventricular hypertrophy. Mean duration of IABP support was 7.1 days (2-13). All IABP catheters were inserted through the common femoral artery. No local complication was reported. All IABP were inserted by an intensivist without surgical help.

Conclusion IABP is a feasible method in children with acute left ventricular failure. By improving diastolic perfusion of the coronary arteries, IABP is effective especially in case of myocardial ischemia. This life-saving technique has to be associated to conventional medical treatment of refractory low cardiac output. Sometimes, IABP may be an alternative for effective mechanical circulatory support.

The author hereby declares no conflict of interest

0323
Mid-term follow-up and quality of life in patients after Fontan surgery
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Background The Fontan procedure (atriopulmonary Fontan) and total cavo-pulmonary connection are designed to treat univentricular heart.

Whereas peri-operative mortality has declined, the current challenge is long-term outcome.

Objective To evaluate the outcome and quality of life of survivors with Fontan circulation.

Methods This retrospective monocentric study aimed patients who had follow-up after Fontan surgery at the University Hospital of Lille. Data were collected on medical records. The quality of life was evaluated between June and October 2014 by two scales: Paediatric Quality of Life Inventory TM (PedsQL) before 26 years of age and Medical Outcome Study Short Form 36 (MOS SF 36) after 26 years.

Results Among 96 patients who underwent Fontan procedure, median follow-up was 9.6 (6.1-12.5) years after the last intervention. Nine-year global survival was 93%. 95% of patients had total cavo-pulmonary connection and 5% had atriopulmonary connection. Arrhythmia occurred in 27.1%, single ventricle dysfunction in 87.4%, leak of the atrio-ventricular valve in 58.9%. Protein-losing enteropathy affected 4.2% of patients and thromboembolic events appeared in 17.7%. Total score of quality of life was 66.5% according to the PedsQL and 62.5% to the MOS SF36.

Conclusion This French cohort of survivors with Fontan circulation has the same initial characteristics than which described in the literature. The level of quality of life was comparable to general population. The question of global rehabilitation of these patients must be raised.

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0230
Current use of levosimendan in children
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Background Levosimendan is an inodilator agent belonging to the family of calcium sensitizer agents. Its positive inotropic and vasodilating properties make it interesting for the treatment of heart failure. Although this inotropic drug is increasingly used in children, a special license is still needed to obtain it in several countries.

Aims To report our experience of levosimendan and to analyse its effects in children.

Methods It was a single-centre retrospective study. From January 2010 to December 2014, all paediatric patients who received at least one perfusion of levosimendan were included. Levosimendan was administered as continuous infusions at a dose of 0.2 μg/kg/min for 24 hours without any loading dose. Medical records were analyzed for each patient.

Results More than 200 patients received levosimendan during the period and more than 300 infusions were performed. No side effect was reported. Levosimendan significantly improved BNP level. Indications of levosimendan infusion were: 1) treatment of postoperative hemodynamic deterioration, 2) preoperative conditioning, 3) treatment of acute heart failure (myocardial ischemia, myocarditis, decompensated cardiomyopathies), 4) treatment of chronic heart failure (cardiomyopathies and failing Fontan).

Conclusion Because of the long half-life of its active metabolite, levosimendan has a prolonged effect lasting for up to 7 to 9 days after discontinuation of a 24-hour infusion. Using this drug, the potential of arrhythmia is reduced as total intracellular calcium levels are not raised. This inodilator agent is safe and effective for the treatment of heart failure in children and must be part of the conventional therapeutic arsenal.

The author hereby declares no conflict of interest