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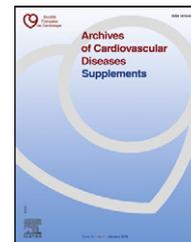
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Vendredi 13 septembre de 9h à 9h45

PC 1

Impact of skin and nasal decontamination before cardiac surgery on postoperative Staphylococcus infection rate in children



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Abstract

Background Postoperative infections occur in about 10% of pediatric cardiac surgeries, involving Staphylococcus aureus in most of the cases. Nasal decontamination of Staphylococcus aureus with mupirocin has been reported to reduce postoperative Staphylococcus aureus infections after cardiac surgery in adults, but the effect of preoperative decontamination in children undergoing cardiac surgery has not been enough studied to determine a consensus.

Aims We tried to evaluate the impact of systematic preoperative decolonization with intra nasal mupirocin application and chlorhexidine soap skin washing, on postoperative Staphylococcus infection in children undergoing cardiac surgery.

Methods We conducted a monocentric retrospective study including children from 7days-old to 18 years-old undergoing cardiac surgery. Our population was divided in three groups according to decolonization protocol (group N: no decolonization, group T: targeted decolonization in Staphylococcus aureus carriers only, and group S: systematic decolonization).

Results Three hundred and ninety three children were included between October 2011 and August 2015 (122 in group N, 148 in group T and 123 in group S). Staphylococcus infection rate significantly decreased in group S compared to group N (0.8% vs. 7.7%; $P < 0.05$) and tended to decrease in group S compared to group T (0.8%

vs. 4.7%; $P = 0.06$). Systematic decontamination also significantly reduced the rate of infections starting from the skin (including surgical site infections and bloodstream infections), but had no effect on the rate of pulmonary infections. The lack of decontamination was associated with a higher risk of postoperative Staphylococcus infection (15% vs. 41%, $P < 0.05$).

Conclusion Our study suggests that systematic preoperative skin and nasal decontamination decrease postoperative SI in children undergoing cardiac surgery.

Keywords Staphylococcus; Postoperative infection; Cardiac surgery; Antibiotic prophylaxis; Mediastinitis; Children; Congenital heart disease

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

<https://doi.org/10.1016/j.acvdsp.2019.06.009>

PC 2

Oxygen uptake efficiency slope in children with congenital heart disease versus healthy children



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Abstract

Background Cardio-pulmonary exercise test (CPET) provides accurate evaluation of physical capacity and disease severity in children with congenital heart disease (CHD). However, in clinical practice, full participation to obtain optimal measure of VO2max may be difficult. As an alternative, the oxygen uptake efficiency slope (OUES) is a reproducible and reliable parameter measured

during CPET, which does not require a maximal exercise to be interpretable. This study aimed to evaluate the OUES of a large cohort of children with CHD, and to compare the results with those of healthy controls. We also intended to identify, in this specific population, the clinical and CPET variables associated with the OUES.

Methods and results This cross-sectional multicenter study enrolled 709 children (407 CHD and 302 healthy controls). The association of clinical characteristics with weight-normalized OUES (OUES_{Sk}) was studied using a multivariable analysis. The mean OUES_{Sk} was significantly lower in CHD than in healthy controls (respectively 38.6 ± 8.5 and 43.9 ± 8.5 ; $P < 0.001$). The OUES_{Sk} was predominantly affected in the most severe CHD. The OUES_{Sk} correlated well with VO₂max ($r = 0.85$, $P < 0.001$). The decrease of OUES_{Sk} was associated with increased age, increased BMI, number of cardiac catheter or surgical procedures, female gender and decreased FVC (Z-score).

Conclusion The OUES is significantly impaired in children with CHD and strongly correlates with VO₂max. The OUES has the same clinical determinants as VO₂max and therefore may be of interest in submaximal exercise.

Keywords Cardio-pulmonary exercise test; Congenital heart disease; Oxygen uptake efficiency slope; OUES; Pediatrics

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

<https://doi.org/10.1016/j.acvdsp.2019.06.010>

PC 3

Mid-term outcomes after percutaneous pulmonary valve implantation in complex right ventricular outflow tracts using the “folded” Melody® valve technique

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Abstract

Background Percutaneous pulmonary valve implantation (PPVI) using Melody® valve has been validated as a valuable therapeutic option for the management of right ventricular outflow tract (RVOT) dysfunction but remains challenging [1–3]. The “Folded” modification of the Melody® valve has been reported as a safe and feasible technique in complex RVOT [4]. We sought to evaluate mid-term outcomes in a multicentre cohort who underwent PPVI using the “folded” Melody® valve technique.

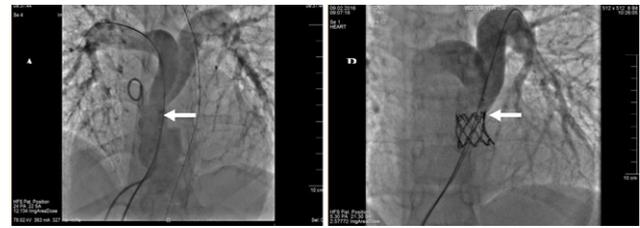


Fig. 1 Folded Melody valve implantation in a patient with Truncus arteriosus type 2A with short RVOT and early PA bifurcation. (A) Angiogram showing short RVOT with early PA bifurcation (white arrow) and free PR; (B) Angiogram after Folded valve implantation showing good valve function (white arrow). PA, pulmonary artery; PR, pulmonary regurgitation; RVOT, right ventricular outflow tract.

Methods Patients who underwent PPVI using a Foled Melody® between April 2012 and November 2018 in 6 European tertiary Centers were retrospectively included.

Results “Folded” Melody® valve technique was successfully performed in 28 patients (mean age = 17.7 ± 10 years old). Indications were: short RVOT and early bifurcation of pulmonary arteries in 12 (42.8%) (Fig. 1), bioprosthetic valves in 10 (35.7%), coronary arteries proximity in 4 (14.3%) and prevention of retrosternal compression in 2 (7.2%). No complication occurred during procedures. All patients had excellent hemodynamic results. Mean transvalvular peak velocity decreased from 3.8 ± 0.86 m/s before PPVI to 2.4 ± 0.55 m/s in the immediate post-PPVI period. Only 5 patients had trivial pulmonary regurgitation (PR) at discharge. After a median follow-up (FU) of 27 ± 17.9 months, all patients were alive, and all, but 3 patients, were free from reintervention: 1 patient (3.5%) developed Melody® valve infective endocarditis 3 months after PPVI and underwent RVOT surgical replacement; Two underwent pulmonary artery stenting 2 and 4 years after of PPVI, but the lesions were not related to the Folded valve. At last FU mean transvalvular peak velocity was 2.6 ± 0.66 m/s and only 5 (17.8%) patients had mild or less PR. No stent fractures were observed.

Conclusion The “folded valve technique” is a safe and feasible modification of the Melody® valve which provides favourable mid-term results without increased rate of valve related complications.

Keywords Transcatheter valve; Pulmonary valve; Stent; Complex right ventricular outflow tract

Disclosure of interest AE, MG, JBT and YB act as proctors for Medtronic Inc.; ZJ is consultant for Medtronic. Other authors have no conflict of interest to declare.

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<https://doi.org/10.1016/j.acvdsp.2019.06.011>