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**Predicting fluid responsiveness in cardiac postoperative children: what about electrical cardiometry ?**

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Background: Postoperative fluid management is a milestone of post operative period concerning children with congenital heart disease. Electrical Cardiometry (EC), (ICON®, Osypka Medical) is a continuous noninvasive hemodynamic monitor used routinely in our unit.

Objective: This study try to evaluate reliability of one of its parameters, stroke volume variation (SVV), to predict fluid responsiveness of our patients compared to classical parameters.

Design/Methods: Patients were prospectively included in postoperative period. Stroke volume (SV), SVV on EC, cardiac output, central venous pressure, left auricular (LA) pressure, curve variation of invasive blood pressure, central venous pressure, saturation, LA and echography velocity time integral variation were noted. Results are median (interquartile). Responders to volume expansion (VE) had an increase in SV of at least 15% after VE.

Results: 90 patients were included (6.5 months (44), 6.4 kg (9.8)) and 46 had VE. Before VE, SVV (18(9) vs 10(5)  $p<0.0001$ ) and pulse oximetry curve variation (0.55(0.74) vs 0.03(0.18)  $p<0.0001$ ) were significantly higher for patients with than without VE. In our cohort SV is significantly higher ( $p=0.0221$ ) in VE group but not SV weight index as in other team cohorts. Concerning SV difference, it can be explain by patients younger (3 vs 15.5 months) and with significantly low weight (5.2 vs 8.2 kg,  $p=0.0099$ ) in VE group. But, concerning responders vs non responders groups after VE, SVV is the only parameter which is significantly different with area under curve and cut off (figure 1) of 0.696 and 19% ( $p=0.015$ ) versus and 0.809 and 13% ( $p<0.0001$ ) between patients with or without VE.

All others parameters (clinic, echocardiography or invasive measures) have no significant difference and too low AUC, including delta aortic peak flow velocity on echography and delta invasive blood pressure.

These preliminary results (first ones in electrical cardiometry) confirme first ones on other bioimpedance device on reliability of SVV, which seems to be more practical and reliable than classical and invasive parameters.

Conclusions: Noninvasive measures of SVV and SV using ICON seems to give reliable data to guid fluid management in postoperative period. Of course, these are preliminaries data, and larger cohort is necessary.