Conclusions When we evaluate the peak systolic radial rate in children by speckle tracking echocardiography, age and heart rate effects must be considered.

[gw22-e0381] **QUANTIFICATION OF REGIONAL LEFT VENTRICULAR RADIAL STRAIN RATE IN HEALTHY CHILDREN BY SPECKLE TRACKING ECHOCARDIOGRAPHY: REFERENCE VALUES, THE EFFECT OF AGEING AND HEART RATE**

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Objective The objectives of this report are as follows: To establish reference values for peak systolic radial strain rate (SrR) in healthy children, and evaluates the relationship between age and SrR, also, assesses the effect of heart rate on SrR in healthy children.

Method Transthoracic two-dimensional echocardiographic examinations were performed on a total of 164 healthy children. Left ventricular short axis views at the basal level, middle level and apex were performed and the dynamic 2-dimensional gray images in 3 heart cycles were obtained. All images were analysed off-line in GE EchoPAC workstation and regional SrR were acquired.

Results (1) Comparison of SrR in different left wall segments at the same level: At the base level and the middle level, there were no statistically significant except the basal anterior septum (basantsept) and the middle anterior septum (midantsept). There were no statistically significant of SrR in apex level. (2) Comparison of SrR in different level segments in the same wall: significant difference were found in most segments which were in the same wall but at the different levels. (3) Simple linear regression analysis: Except apex segments of anterior septum and anterior wall, SrR of other segments correlated with age ($p < 0.05$, R^2 0.014–0.163). SrR of all segments correlated with heart rate ($p < 0.05$, R^2 0.048–0.191). (4) Stepwise multiple linear regression analysis: SrR of all segments at the basal level correlated with heart rate ($p < 0.05$, R^2 0.066–0.123). SrR of all segments at the middle level correlated with heart rate or age ($p < 0.05$, R^2 0.088–0.268). SrR of all segments at the apex correlated with heart rate ($p < 0.05$, R^2 0.048–0.127). (5) Intraobserver variability and the inter-observer variability were 4.2% and 8.6%.