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COMPARISON BETWEEN THE ASSESSMENT OF RIGHT VENTRICLE AND LEFT VENTRICLE IN HEALTHY ADULT BY REAL-TIME THREE-DIMENSIONAL ECHOCARDIOGRAPHY

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Objectives Using real-time three-dimensional echocardiography (RT-3DE) to compare the assessment of right ventricle and left ventricle in healthy adult in order to further prove the feasibility of this method and discuss the relationship between these two ventricles.

Methods Full-volume of RT-3DE was performed in 58 healthy adults to collect the 3D database of heart. Then the database was transmitted to the workstation and was analysed. The right ventricular end-diastolic volume (RVEDV), end-systolic volume (RVESV), stroke volume (RVSV) and ejection fraction (RVEF) were obtained in TomTec workstation. The left ventricular end-diastolic volume (LVEDV), end-systolic volume (LVESV), stroke volume

(LVSV) and ejection fraction (LVEF) were obtained in Qlab workstation.

Results RVEDV, RVESV, RVSV and RVEF were 85.8 ± 20.8 ml, 41.9 ± 10.5 ml, 44.0 ± 12.1 ml and $51.0 \pm 5.6\%$, respectively. LVEDV, LVESV, LVSV and LVEF were 69.4 ± 17.8 ml, 26.5 ± 8.3 ml, 42.9 ± 11.7 ml and $62.0 \pm 6.5\%$, respectively. Correlations were found between the corresponding parameters of RV and LV ($r=0.78$, 0.62 , 0.82 and 0.44 , respectively). There was high correlation ($r=0.82$) and no significant difference ($p=0.273$) between RVSV and LVSV. RVEDV and LVEDV were higher than LVEDV and LVESV, respectively ($p<0.001$). But RVEF was lower than LVEF ($p<0.001$).

Conclusions The fact, there was high correlation and no significant difference between the stroke volume of right and left ventricle measured by RT-3DE, further proved the feasibility of RT-3DE to evaluate the volume and function of right and left ventricle. The correlation of the volume and function between right and left ventricle could prove the significant relationship and interaction between them.