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**Comparison of Echocardiography Indexes and Heart Failure Plasma Biomarkers in Young Adults with Single Ventricle after the Total Cavopulmonary Connection**

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**Objectives:** We aimed to clarify correlation between echocardiography volumetric and hemodynamic indexes, myocardial function by tissue doppler imaging and level of Heart Failure (HF) Plasma Biomarkers (N-Terminal Pro-Brain Natriuretic Peptide, Galectin-3) in young adults with Fontan circulation.

**Methods:** From 01.Jan.2005 to 31.Dec.2016 132 patients underwent Fontan, TCPC, external conduit. Eighteen young adults (> 18 y.) were included (10 males, 8 female, mean age  $21.3 \pm 1.9$  y, 18-23 years). EDV, ESV, EDI, EF (Simpson's method) estimated by Echo and MRI. Peak S, E, A, ratio E/A, E/E', Myocardial Performance Index (MPI) estimated by Echo (TDI).

**Results:** The peak S ( $9.2 \pm 1.8$  mm) by TDI and EF ( $51 \pm 5\%$ ) had direct significant correlation NT-proBNP -134 pg/mL, range 78 to 284 pg/mL ( $r=+0.6$ ,  $p<0.05$ ). MPI by TDI ( $0.51 \pm 0.03$ ) and EF ( $51 \pm 5\%$ ) had direct significant correlation Galectin-3 – 9.5 ng/mL, interquartile range 9.9 to 15.0 ng/mL ( $r=+0.3$ ,  $p<0.05$ ).

**Conclusions:** HF Plasma Biomarkers (NT-proBNP, Galectin-3) are reliable tests for estimation HF in young adults with Fontan circulation, specifically with right ventricular morphology. Echo indexes (peak S, MPI) could be used for assessment of SV myocardial function with good correlation with NT-proBNP, Galectin-3. HF Plasma Biomarkers may be an extremely useful, quick, and simple prognostic tests for identification high risk patients after TCPC.