

The ductus venous blood flow indices in fetus with right-sided congenital heart defects (CHD)

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Objectives

To study the dynamics of angle-independent indices in the ductus venosus of fetuses with congenital heart defects (CHD).

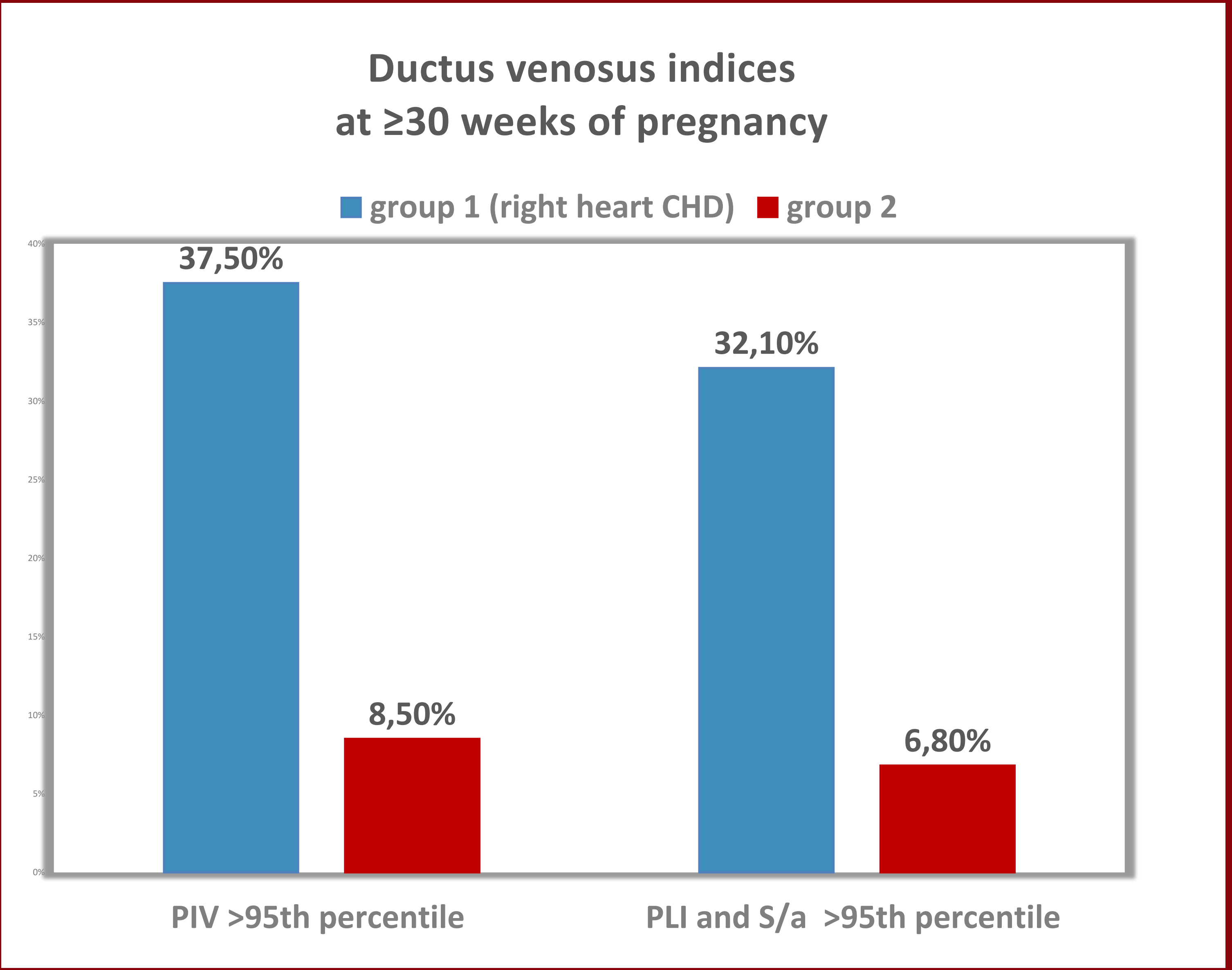
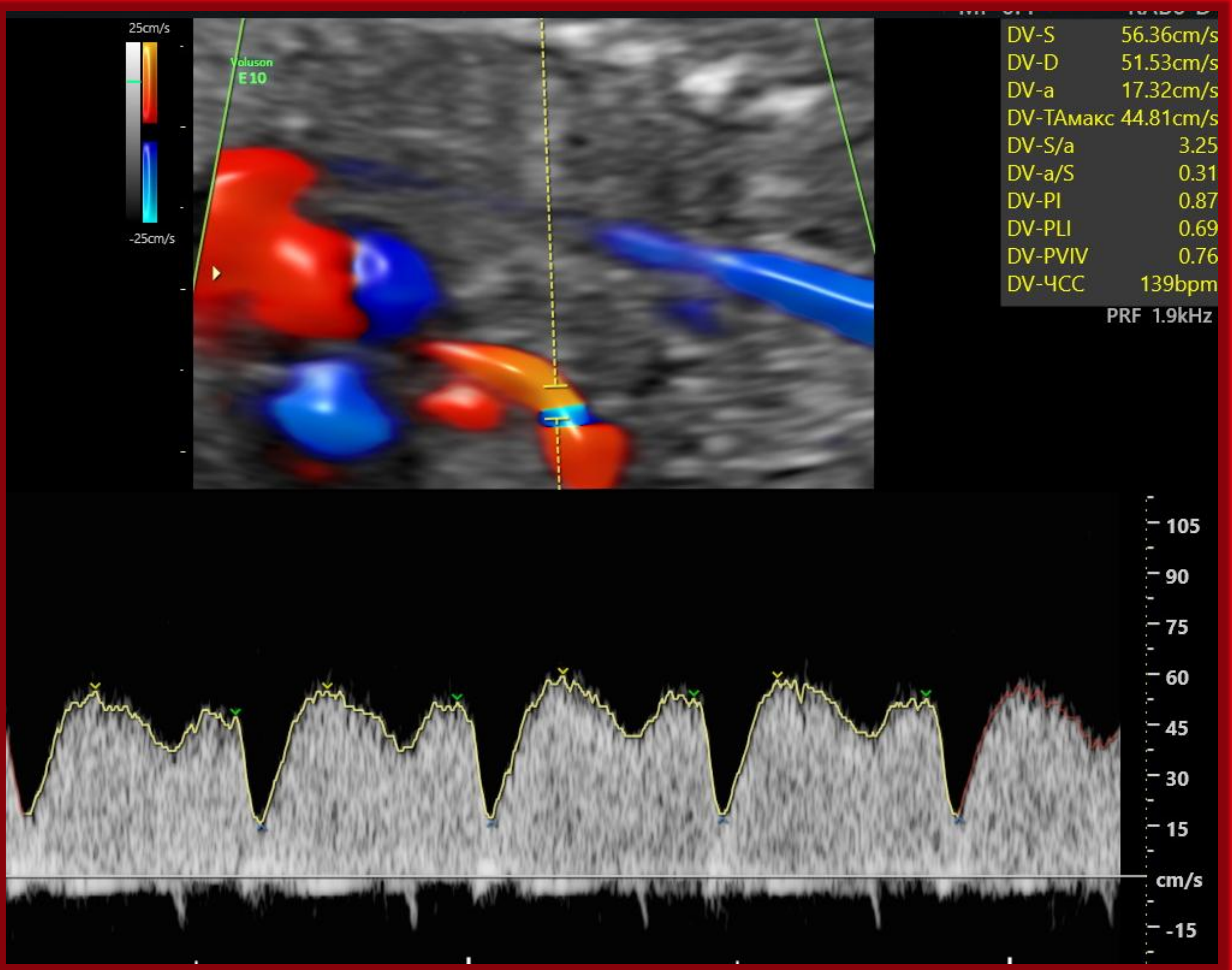
Methods

In a cross-sectional study, we analyzed: pulsatility index (PIV), peak velocity index (PVIV), preload index (PLI), and the ratio of peak systolic velocity to peak late diastolic velocity (S/a) ratio in the ductus venosus in the total study cohort consisting of 171 fetuses with CHD, including 47 fetuses with right heart defects (group 1) and 124 fetuses with other forms of defects (group 2)

A comparative analysis of the obtained indices was conducted in three gestational intervals: 18-21 weeks, 22-29 weeks, 30-40 weeks of pregnancy

Results

In the general group and the 2nd group, a decrease in all indices in each subsequent gestational interval ($p < 0.001$), typical for a healthy population, was noted. In the 1st group, no significant changes were found in any of the studied indices between gestational intervals ($p > 0.05$). The number of observations with PIV, PVIV, PLI, and S/a values > 95 th percentile did not differ significantly between the subgroups in the first two gestational intervals ($p > 0.05$) and was significantly higher in the 1st group at ≥ 30 weeks of pregnancy, amounting to PIV (37.5% vs 8.5%), PLI, and S/a (31.2% vs 6.8%), respectively ($p \leq 0.02$).



CONCLUSION:

The presence of right-sided fetal heart disease causes changes in the hemodynamics of oxygenated blood flow through the venous duct, which potentially increases the risk of hypoxic complications, including antenatal ischemic myocardial injury