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TISSUE DOPPLER IMAGING IN VERY PRETERM INFANTS

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Background and aims: Tissue Doppler imaging (TDI) is a new tool for measuring myocardial function. The feasibility of this method has not yet been validated in very preterm infants.

The aims of this study was to explore the feasibility of measuring myocardial function by TDI in newborn, very preterm infants.

Methods: Twenty-eight infants (median (range) gestational age 27.5 (24-31) weeks, birth weight 1092 (692-1620) g) underwent echocardiographic examination at 5 (2-8) hours after birth. Annular velocities and displacement were measured with TDI.

Results:

	Left ventricle (LV) Mean (SD), n=24	**Right ventricle (RV) Mean (SD), n=28**
Peak systolic velocity (cm/s)	1.9 (0.7)	2.8 (0.9)*
Peak diastolic velocity (cm/s)	2.6 (0.9)	4.2 (1.5)*
Displacement (mm)	2.1 (0.8)	3.4 (1.3)*

[TDI results]

* $p < 0.001$

We found good correlation between the LV and RV regarding displacement ($r=0.8$; $p < 0.001$), systolic ($r=0.8$; $p < 0.001$) and diastolic velocity ($r=0.6$; $p=0.002$), and between systolic and diastolic velocity within the LV ($r=0.9$; $p < 0.001$) and RV ($r=0.8$; $p < 0.001$).

Conclusions: The significant correlations found between the left and right ventricle, and between systolic and diastolic measurements within each ventricle, demonstrate that TDI measurements can be obtained in very preterm infants.