

Cardiovascular function after successful treatment of intrauterine twin-to-twin transfusion syndrome – a 10-year long-term follow-up

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Introduction: TTTS is associated with a high incidence of fetal and neonatal cardiovascular morbidity including myocardial hypertrophy and cardiomegaly; hypertension and increased vascular stiffness are attributed to pathological vascular fetal programming. Reports of long term cardiac function have focussed only on survivors after serial amnioreduction.

Objective: To assess cardiac and vascular function of survivors 10 years after intrauterine laser coagulation (LC) of severe TTTS (median gestational age at LC: 20+5 wks; 3 hydrops, 6 severe tricuspid, 3 severe mitral regurgitation)

Methods: 31 surviving twin pairs with a median age of 9.99 [8.58-11.42] years and an age matched control group of 15 healthy probands were assessed by 2D, Doppler-, 3D-echo and speckle tracking including measurement of blood pressure and vascular stiffness (PWV, augmentation index AI).

Results: Cardiac function parameter showed no significant differences between donor and recipient twin. There was no significant difference between the cohorts regarding high corrected blood pressure, PWV and AI (table).

Conclusions: Follow-up until the age of 10 years after successful intrauterine LC prove that both donors and recipients have normal cardiac and vascular function in the longer term. This underlines the reversibility of even severe cardiovascular intrauterine dysfunction by causative laser coagulation.

Selection of parameter examined				
Parameter (mean ± SD)	Donor	Recipient	Control	p-value
N=	31	31	15	
RR sys (mmHg)	109 ± 7	113 ± 11	109 ± 6	0,161
RR dia (mmHg)	60 ± 6	62 ± 11	62 ± 5	0,669
MAD (mmHg)	78 ± 6	80 ± 9	79 ± 5	0,443
AI % Sphygmocor	-16,7 ±1,0	-22,1 ±0,6	-20,4 ±0,4	0,443
PWV Sphyg.(m/s)	4,37 ± 0.5	4,72 ± 1,7	4,11 ± 0,1	0,484
Tei LV	0,32	0,35	0,34	0,45
Tei RV	0,31	0,35	0,37	0,86