

[EP08.04] Fetal cardiac function and perinatal outcomes in growth-restricted fetuses with or without myocardial blood flow re-distribution

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Introduction / Backgroud

Myocardial blood flow is reported to be increased in some cases of growth-restricted fetuses (FGR), known as heart sparing.

Objectives

Fetal cardiac function and perinatal outcome in FGR with or without myocardial blood flow re-distribution were investigated.

Methods

- A case-control study in FGR cases in 24 to 36 weeks.
- Color and pulsed Doppler were employed to prove the flow signal in distal right coronary artery, which was defined to be a positive sign of heart sparing (**H+**).
- AFI, CTAR, combined cardiac output (CCO), Umbilical venous flow volume (UVFV), abnormal CTG (CTGa), emergent CS due to fetal indication (efCS), umbilical arterial PH (UApH), interval between first examination and delivery (XD), fetal and neonatal demise (FD,ND) were compared.

Results

A total of 209 cases were enrolled: 74 (**H+**) ,135 cases (**H-**).

	H–	H+	(*P<0.05)
n	135	74	
Mat.age	0.0 ± 0.00	0.0 ± 0.00	
Nullipara	76 (56.3%)	50 (67.6%)	
AFI [cm]	12.0± 0.193	10.2± 0.31	*
FBW–Z	–2.2± 0.04	–2.6± 0.07	*
CTAR [%]	34.9± 0.23	39.9± 0.37	*
HR	144± 0.54	145± 0.72	
UA–PI	1.16± 0.023	1.78± 0.085	*
MCA–PI	1.56± 0.022	1.36± 0.028	*
CPR	1.49± 0.032	1.02± 0.047	*
RV–FS	0.31± 0.006	0.29± 0.013	
LV–FS	0.31± 0.006	0.31± 0.008	
RV–MPI	0.37± 0.008	0.40± 0.016	
LV–MPI	0.45± 0.006	0.48± 0.014	*
TAPSE	0.66± 0.011	0.62± 0.017	*
MAPSE	0.52± 0.011	0.43± 0.017	*
CCO [L/min/kg]	0.59± 0.011	0.64± 0.017	*
UVFV [L/min/kg]	0.19± 0.007	0.18± 0.011	

	H–	H+	(*P<0.05)
CTGa	21 (15.6%)	44 (59.5%)	*
efCS	26 (19.3%)	35 (47.3%)	*
UA–pH	7.26± 0.008	7.23± 0.012	
XD [wks]	4.4± 0.44	2.7± 0.38	*
FD	2 (1.5%)	4 (5.4%)	
ND	0 (0.0%)	4 (5.4%)	*
FD+ND	2 (1.5%)	8 (10.8%)	*

Conclusions

- Cardiac output seemed to be reserved in H+ groups but could be in a state of impending compensatory failure.**
- Recognition and evaluation of myocardial blood flow re-distribution in FGR were crucial to manage and make decision for delivery.**