



MATERNAL HEMODYNAMICS IN HYPERTENSIVE DISORDERS AND DIFFERENT FETO-PLACENTAL GROWTH PATTERNS, IN PREGNANCY

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Objectives: To compare maternal hemodynamic profile during pregnancy and at 6-12 months postpartum in women affected by Hypertensive Disorder of Pregnancy (HDP), associated with different feto-placental growth patterns.

Methods: 72 patients from 24 gestational weeks to term were enrolled in this prospective observational study: 18 HDP

with appropriate for gestational age fetus (HDP-AGA), 21 HDP with intrauterine growth restriction (HDP-IUGR), 14

normotensive women with severe IUGR (s-IUGR), 19 controls.

Diagnosis of HDP was made according to the criteria of the ISSHP. s-IUGR was defined as abdominal circumference

<5thcentile and a Doppler velocimetry in umbilical artery >2SD.

Maternal echocardiography was performed in blind by a dedicated cardiologist, at diagnosis and at 6-12 months

postpartum.

Results: During pregnancy, HDP-IUGR and s-IUGR showed a significantly lower cardiac output (CO) and increased

total vascular resistances (TVR), compared with controls. This profile remained almost unchanged at 6-12 months

postpartum, even if mean arterial pressure (MAP) returned to pre-pregnancy values in HDP-IUGR.

HDP-AGA showed an increased CO and TVR during pregnancy; this group also presented an increased left

ventricular mass (LVM) and relative wall thickness (RWT), and a reduced E/A ratio, indicating an impaired myocardial

relaxation. In post-partum we observed persistently increased MAP values, due to high TVR, in spite of a return to

normal HR and CO values.

Conclusions: Our hypothesis, that prioritizes the feto-placental phenotype, allowed us to observe a

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significantly poor cardiovascular adaptation to pregnancy metabolic demands in HDP-IUGR and s-IUGR. This was profoundly different from uneventful pregnancies, characterized by increased HR and CO and lowered TVR. HDP-AGA presented similar increase in HR and CO compared to controls, but at the cost of diastolic function impairment and of left ventricle remodeling. In postpartum, HR and CO returned to normal, but TVR remained high, as well as LVM.