Maternal haemodynamical adaptation in a pregnancy with post-radiotherapy cardiopathy and dysmetabolism

Paola **Palazzo** [1,*], Laura **Angeli** [2], Rita **Nistri** [3], Sara **Zullino** [2], Serena **Simeone** [2], Serena **Ottanelli** [2], Marianna Pina **Rambaldi** [2], Caterina **Serena** [2], Giacomo **Bruscoli** [2], Felice **Petraglia** [1], Federico **Mecacci** [1,2]

[1] Obstetrics and Gynaecology Unit, Department of Experimental and Clinical Biomedical Sciences, University of Florence, Florence, Italy.
[2] High Risk Pregnancy Unit, Department for Women and Children Health, Careggi University Hospital, Florence, Italy.
[3] Department of Heart and Vessels, Careggi University Hospital, Florence, Italy.

DOI: 10.36129/jog.2024.S97

Objective. To evaluate the cardiovascular adaptation in case of maternal heart-disease associated with dysmetabolism.
Materials and Methods. We present the case of a 44 -year-old woman affected by post-radiotherapy cardiopathy, characterized by double valvulopathy (moderate aortic-mitralic regurgitation), mild systolic and moderate diastolic dysfunction (TAPSE-16mm), and increased pulmonary pressure (PAPS-42 mmHg). The patient conceived via *in vitro* fertilization and was referred to our tertiary centre at 13 weeks of gestation. Baseline NYHA class was II-III. The patient presented several co-morbidities: chronic hypertension, impaired glucose tolerance and class II obesity. At the first trimester scan, the uterine arteries mean pulsatility (mean-UtAPI) index was above 95° percentile. Haemodynamic assessments were performed with USCOM device revealing a hypodynamic pattern (5.8 CO, 1,232 RVS, 70 SV). Introducing insulin for the dysmetabolism, along with a regimen of diuretic, betablocker, acid acetylsalicylic and low-molecular-weight-heparin, we observed significant improvements at the following evaluation at 23 weeks. There was a significant reduction in the RVS (872), an increase of both CO (7.3) and SV (88), an improvement of diastolic function (TAPSE-19 mm) and a reduction of PAPS (30-mmHg) as well as normalization of the uteroplacental flow (mean-UtA PI71° percentile).
Results. Pregnancy progressed without any obstetrical or maternal complication. Delivery was expedited at 36 weeks of gestation. No complications were observed during the post-partum period. The mother was discharged on the 9th day after delivery with good haemodynamic compensation, along with her baby.
Conclusions. Metabolic homeostasis is of paramount importance in the cardiovascular adaptation during pregnancy, even in case of severe maternal heart disease.