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**The molecular basis of the augmented cardiovascular risk in offspring of mothers with hypertensive disorders of pregnancy****Asimena Svigkou***National & Kapodistrian University of Athens, Greece*

The review examines the impact of maternal preeclampsia on the cardiometabolic and cardiovascular health of offspring. Preeclampsia (PE), a hypertensive disorder of pregnancy, is responsible for 2 to 8% of pregnancy-related complications. It significantly contributes to adverse outcomes for their infants, affecting the time of birth, the birth weight and cardiometabolic risk factors such as blood pressure, body mass index (BMI), lipid profiles, glucose, and insulin. Exposure to PE in utero predisposes offspring to an increased risk of cardiometabolic diseases (CMD) and cardiovascular diseases (CVD) through mechanisms that are not fully understood. The incidence of CMD and CVD is constantly increasing, whereas CVD is globally the main cause of morbidity and mortality. A complex interplay of genes, environment, developmental programming and epigenetic modifications is a plausible explanation for the development of endothelial dysfunction that leads to atherosclerosis and CVD. Inflammatory cytokines, reactive oxygen species (ROS) and antiangiogenic factors are released in PE due to placental ischemia and hypoxia. All these factors target endothelial cells and are responsible for the release of vasoactive substances and the decrease of vasodilators, leading to vasoconstriction and hypertension [64]. Intrauterine exposure to this environment is related to the increased risk of CVD and hypertension later in life in offspring. The underlying molecular mechanisms are angiogenic imbalance, inflammation, alterations in the renin-angiotensin-aldosterone system (RAAS), endothelium-derived components, serotonin dysregulation, oxidative stress and activation of both the hypothalamic-pituitary-adrenal axis and hypothalamic-pituitary-gonadal axis. Moreover, the potential role of epigenetic factors, such as DNA methylation and microRNAs as mediators of these effects is emphasized, suggesting avenues for future research and therapeutic interventions.

**Biography**

Asimena Svigkou graduated from School of Medicine of Aristotle University of Thessaloniki with field service experience at the Milos Health Center and pending for the specialty of pediatrics. Currently, she is pursuing the Master of Sciences (MSc) Program entitled «General Pediatrics and Pediatric Subspecialties: Clinical Practice and Research» of National and Kapodistrian University of Athens. She is engaged in writing and collaborates with the Cardiology Department of Hippokraton General Hospital of Athens. Someone would describe her organizational, responsible and communicative both with patients and with the colleagues. Her aim is to seek opportunities for professional development and continuous learning.