Preeclampsia – Linking Hypertension and Immunology

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Preeclampsia (PE) is a leading cause of maternal death, and perinatal morbidity and mortality resulting from premature delivery and intrauterine growth restriction (IUGR). New onset of hypertension and proteinuria arises secondary to maternal endothelial and inflammatory and immunological dysfunction. Arteriosclerotic lesion develops in the placenta within 9 months and systemic vascular resistance in these patients often exceeds 3000 dyne/cm²m². Trophoblasts, which are of fetal origin invade maternal vessels against the blood stream and via the interstitium and induce a unique vascular remodeling. Specialized Natural killer cells (uterine NK cells) together with T-cells are regulating this semi-invasive, risky immunological invasion. Together with the remarkable and underappreciated cardiac adaptation process during pregnancy the rapid fetal growth can be accomplished. In preeclampsia something goes dramatically wrong, threatening 3% of pregnant women worldwide with a potential life threatening disease....and we do not understand it at all....this is why preeclampsia is called the disease of theories.... However, preeclampsia is not over, when the baby is delivered, since it is now established that preeclampsia predisposes to future cardiovascular disease with an odds ratio similar to smoking.

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