Pathways to and from Preeclampsia: A Working Perspective beyond the Common List of Blood and Urine Markers

Jeff M. Denney, MD, MS, FACOG

Wake Forest School of Medicine, Department of Obstetrics & Gynecology, Section on Maternal-Fetal Medicine, Winston-Salem, NC

Background: Simply stated, preeclampsia is new-onset hypertension with proteinuria during gestation. However, preeclampsia is complex, virtually affects every organ and is often confused with other entities.

Methods: My aim is to provide clinicians with a working framework. Such framework is key in identifying underlying disease processes that mimic or predispose patients toward developing hypertensive disorders and evolving manifestations (eg, renal failure). Results: Select data are reviewed to tie in insights with numerous portals and pathophysiologic processes that lead to pre-eclampsia, hypertensive disorders of pregnancy, and imitators of preeclampsia (eg, acute fatty liver, HELLP, TTP-HUS, SLE exacerbation). The underlying processes or preexisting chronic diseases--DM, renal disease, autoimmune disease—all lead to an assortment of physiologic dysfunctions affecting uterus and kidney with or without additional organ involvement; see figure. Conclusion: Many disease processes predispose toward preeclampsia, a heterogeneous condition unique to pregnancy. Regardless of background and ultimate pathway, over-arching principles are shared.



## **Figure: Underpinning Principle**