Preeclampsia complicates nearly 5-10% of all pregnancies, increasing maternal and perinatal morbidity and mortality. Despite the advances in technology, the etiology of this pregnancy related complication remains unknown and prediction a challenge for modern science. Preventive trials have been disappointing due to the lack of an effective predictive system. Despite the fact that numerous predictive biochemical markers have demonstrated to be potentially useful in a research setting their utility in clinical practice remains to be determined. This lecture will review up-dated concepts dealing with the pathogenesis, etiology and the utility of several biochemical marker for the prediction of preeclampsia.