

**REVIEW****OPEN ACCESS**

A REVIEW ON PRE-ECLAMPSIA AND INTRA UTRINE GROWTH RETARDATION

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Placental examination in pregnancies with complications such as pre-eclampsia (PE) or intrauterine growth restriction (IUGR) can provide insight into specific diagnoses, recurrence risk and chronicity. Placental findings have clinical significance as they can identify the aetiology of the IUGR (as in inborn errors of metabolism) and predict recurrence (as in maternal floor infarcts). Evaluation of obstetric pathology in such pregnancies should be an integral part of clinical care. This review will highlight the placental findings in IUGR and PT.

Keywords: IUGR; Clinical Care; Pre-eclampsia

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INTRODUCTION

Pre-eclampsia is a pregnancy complication affecting approximately 5–8% of pregnant women and is capable of causing both maternal and fetal morbidity and mortality. Maternal death rates from pre-eclampsia have been significantly reduced by careful patient management in the developed world. However, significant maternal death from hypertension still occurs in developing countries, which account for 99% (533 000) of total annual global maternal deaths [1-2]. Pre-eclampsia is characterized by gestational hypertension, proteinuria, systemic endothelial cell activation and an exaggerated inflammatory response. Whilst the pathophysiology of pre-eclampsia is not completely understood, it is clear that the presence of the placenta is both necessary and sufficient to cause the disorder, and the delivery of the baby (and thus the removal of the placenta) remains the only current cure. The pathophysiology of pre-eclampsia involves a complicated web of interacting maternal and fetal factors. Slowly we are gaining an understanding of how these factors may fit together to result in the range of clinical presentations of pre-eclampsia, and it is becoming clear that the aetiology of early-onset and late-onset pre-eclampsia, as well as intra-uterine growth restriction (IUGR) may arise from overlapping but distinct underlying causes [3-4]

The aim of this review is to summarize the current findings in the field and address the important contributions of PE to IUGR. Lastly the management is discussed.

REVIEW

Pre-eclampsia & Cardiac Disease: Metabolic Syndrome of Pregnancy?

Complications of pregnancy, particularly pre-eclampsia (PE) and intra-uterine growth restriction (IUGR) have been associated with future maternal cardiovascular disease (CVD). Pre-eclampsia, characterised by insulin resistance, widespread endothelial damage and dysfunction, coagulation defects and increased systemic inflammatory response, shares many risk factors with CVD. Studies have concluded that despite the low immediate cardiovascular risk in a population of young women, a pregnancy with multiple complications including PE, premature delivery and IUGR, carries a seven-fold additive risk of future disease. These women may be an appropriate cohort for CVD risk screening and for possible intervention. [5-6]

PE & Mortality/Morbidity

Pre-eclampsia is a major cause of maternal mortality (15–20% in developed countries) and morbidities (acute and long-term), perinatal deaths, preterm birth, and intrauterine growth restriction. [7] Key findings support a causal or pathogenetic model of superficial placentation driven by immune maladaptation, with

subsequently reduced concentrations of angiogenic growth factors and increased placental debris in the maternal circulation resulting in a (mainly hypertensive) maternal inflammatory response. The final phenotype, maternal pre-eclamptic syndrome, is further modulated by pre-existing maternal cardiovascular or metabolic fitness.

Diagnosis & Management

Currently, women at risk are identified on the basis of epidemiological and clinical risk factors, but the diagnostic criteria of pre-eclampsia remain unclear, with no known biomarkers. Treatment is still prenatal care, timely diagnosis, proper management, and timely delivery. Many interventions to lengthen pregnancy (eg, treatment for mild hypertension, plasma-volume expansion, and corticosteroid use) have a poor evidence base. [8-9]

Preeclampsia predisposes women in later life to cardiovascular diseases. So far, in acute cases of preeclampsia stabilization of the mother and foetus and finally termination of pregnancy at a time optimal for both sides can only be considered. [10] In this work, available literature data concerning the causes of preeclampsia, its symptoms, techniques for diagnosis, methods for prevention and new approaches to treatment needs further validation and warrants Cochrane Reviews to be initiated.

Great Obstetrical Syndrome

PE and IUGR are common complications of pregnancy with potentially very severe consequences for the health of the mother and foetus. [11] Together with preterm birth, preterm pre labour rupture of membranes and placenta abruption they belong to the “Great Obstetrical Syndromes” with defective placentation and incomplete remodelling of spiral arteries [12]. This background to preeclampsia and IUGR is well established and generally accepted, even if, during the recent years, some new evidence has been presented suggesting that in the development of early-onset and late-onset preeclampsia and/or IUGR different pathogeneses might be involved [13-14]

CONCLUSION

PE continue to be major contributor to IUGR. In this brief review, we highlight current findings in the field and address the important contributions of PE to IUGR. Efforts to preserve daily functioning abilities and quality of life should be the driving aim of PE management. Clinicians must be aware that prompt and correct diagnosis with careful management are essential for recovery and to prevent IUGR.

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