

miRNA expression for early diagnosis of preeclampsia onset: hope or hype?

Autori: Laganà AS, Vitale SG, Sapia F, Valenti G, Corrado F, Padula F, Rapisarda AMC, D'Anna R

Rivista: The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians

DOI: 10.1080/14767058.2017.1296426

PMID: 28282763

ABSTRACT

PURPOSE: Preeclampsia (PE) is a multi-systemic disease characterized by hypertension, proteinuria and other typical signs that can negatively affect the development of pregnancy. The outcome of the disease is strongly linked to the possibility of early diagnosis, in order to prevent the clinical manifestations. Pathogenesis is still unknown, although abnormalities of placenta development linked to angiogenesis alterations and abnormal trophoblastic invasion seem to be involved, corroborating the epigenetic theory. Basing on these elements, this review aims to summarize the possible role of miRNAs in PE onset, both as increased or decreased expression in placenta or as maternal serum markers.

MATERIALS AND METHODS: We considered eligible all original articles (randomized, observational and retrospective studies), published between 2000 and 2016 in English language, about miRNA expression in placenta and maternal serum levels both in uncomplicated and PE pregnancies.

RESULTS: Available data support a direct correlation between selective miRNAs high/low expression in placenta and maternal serum, although it is still unclear how these epigenetic changes may affect the development and outcomes of the disease.

CONCLUSION: Future studies should aim to identify a robust panel of miRNA markers in order to predict the onset and development of PE.