

Identification of Potential Predictive Biomarkers for Early Diagnosis of Preeclampsia Growth Factors to microRNAs

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Abstract : Preeclampsia is the contributor to the worldwide maternal mortality of approximately 100,000 deaths a year. It complicates about 10% of all pregnancies and is the first cause of maternal admission to intensive care units. Predicting preeclampsia is a major challenge in obstetrics. More importantly, no major progress has been achieved in the treatment of preeclampsia. As placenta is the main cause of the disease, the only way to treat the disease is to extract placental and deliver the baby. In developed countries, the cost of an average case of preeclampsia is estimated at £9000. Interestingly, preeclampsia may have an impact on the health of mother or infant, beyond the pregnancy. We performed a systematic search of PubMed including the combination of terms such as preeclampsia, biomarkers, treatment, hypoxia, inflammation, oxidative stress, vascular endothelial growth factor A, activin A, inhibin A, placental growth factor, transforming growth factor β -1, Nodal, placenta, trophoblast cells, microRNAs. In this review, we have summarized current knowledge on the identification of potential biomarkers for the diagnosis of preeclampsia. Although these studies show promising data in early diagnosis of preeclampsia, the current value of these factors as biomarkers, for the precise prediction of preeclampsia, has its limitation. Therefore, future studies need to be done to support some of the very promising and interesting data to develop affordable and widely available tests for early detection and treatment of preeclampsia.

Keywords : activin, biomarkers, growth factors, miroRNA

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