The role of individual microRNAs in preeclampsia pathogenesis

Harapan Harapan
Syiah Kuala University, Indonesia

Preeclampsia is a disease of pregnancy characterized by the new onset of hypertension and proteinuria after 20 weeks of gestation. It has been estimated that preeclampsia affects 3–5% of pregnancies worldwide, and recently, preeclampsia complicates 3–8% of pregnancies and resulting in a very large disease burden. Several pathological mechanisms have been implicated in the development of preeclampsia. These include endothelial dysfunction, an inflammatory pathway, oxidative stress, activation of thrombosis, and the renin-angiotensin system. In addition, some experts believe that placenta have a central role in pathogenesis of preeclampsia. Recently, several studies have reported the differential expression of microRNAs either in placenta and serum from preeclamptic women. In 2007, it was the first report preeclampsia was associated with altered expression of microRNAs in placenta. Later on, studies also documented that individual microRNAs deregulation in placenta of preeclamptic women. Target genes of these differentially expressed microRNAs participated in diverse pathological processes including in reproductive system such as immunologic dysfunction, cell adhesion, cell cycle and signaling, antiapoptosis and regulation of transcription. Our analysis showed that deregulation of individual miRNAs linked with a pivotal role in endothelial dysfunction, maternal inflammatory respond, oxidative stress, activation of thrombosis, regulation of angiogenic factors, regulation of nitric oxide synthase, calcium metabolism and regulation of the renin-angiotensin system. It seems that RNAs fulfill “missing-link” in the pathogenesis of preeclampsia.

Biography

Harapan Harapan completed his MD (Hons.) from Faculty of Medicine, Syiah Kuala University and Zainoel Abidin Teaching Hospital in Banda Aceh, Indonesia. Harapan was Executive Director Medical Research Unit in Faculty of Medicine, Syiah Kuala. Now, He is working in Health Ministry of Indonesia, as field doctor in Papua, Indonesia. He has published more than 20 papers in National and International Journals. Recently, He has been invited as reviewer SCIENCE.DOMAIN International.