Abstract

During the pregnancy, there are many complications, which can affect a fetal development and eventually, its or mother‘s life.

Pre-eclampsia is one of these complications. It is a hypertensive disorder, which appears during the pregnancy. Another example of these complications is an intrauterine growth restriction. It is a condition, when the fetus is not able to reach its genetical growth potential. Both of those pathological disorders are accompanied by changes in microRNA gene expression in placenta, for example miR-16, miR-21, miR-210. Knowledge about these changes in gene expression could represent unique instruments in the field of noninvasive prenatal diagnosis of these disorders. This could be benefitial due to the fact, that both of these disorders are responsible for increasing maternal and perinatal morbidity and mortality.

This work focused on microRNAs, their expression in aformentioned disorders and benefits, which could bring in diagnostics. In this work these two disorders, characteristics of microRNAs and their biogenesi are described. MicroRNAs are interesting for us as potential biomarkers for noninvasive prenatal diagnostics becouse they are present in body fluids, such as plasma, breast milk or amniotic fluid and they are not subject of rapid degradation.

Key words: Preeclampsia, IUGR, MicroRNA