ABSTRACT

Steroid hormones can be divided into 2 groups – intracellular and extracellular, depending on location of their activity. Intracellular ones influence expression of genes while acting as transcription factors. This so-called genomic effect is very slow. Extracellular (non-genomic) steroids bind to neurotransmitter receptors located on the cytoplasmic cell membrane and thus affect ionic channels permeability. Their effect is faster. We refer to them as neuroactive steroids (produced in different body tissues or administered externally) or neurosteroids (synthetized in nervous system cells).

Some neuroactive steroids and their metabolites (e.g. progesterone) are crucial in stabilizing the pregnancy. Other steroid disorders play their role in wide spectre of pregnancy complications, such as preterm labor, preeclampsia, intrahepatic cholestasis in pregnancy etc.

Our scientific interest in collaboration with the Department of Steroids and Proteofactors of the Institute of Endocrinology in Prague is focused on investigation of multiple pregnancies in term of steroid metabolome. Studies conducted so far have not provided a comprehensive analysis of steroidome within mothers and fetuses of multiple pregnancies.

The aim of our research is to clarify the relationship between fetuses and mother from the point of view of steroid metabolism.

Key words: fetomaternal steroidome, neuroactive steroids, pregnancy complication, multiple pregnancy