The international Academy of Human Reproduction

17th World Congress of the Academy of Human Reproduction

15–18 March 2017

Rome, Italy

TITLE

INVESTIGATION OF PLACENTAL CIRCULATION IN PROLONGED PREGNANCY USING CONFOCAL MICROSCOPY

AUTHOR/S

Drobintseva A (RU) [1], Polyakova V (RU) [2], Bolotskih V (RU) [3]

ABSTRACT

The reported frequency of postterm pregnancy is approximately 3-17% . Recent studies shown that postterm delivery is at risk of complications such as hypoxia, birth injury and even stillbirth. As the placenta ages, increased rates of placental infarction and fibrin deposition.

The aim of the study was to examine the circulation system in placental tissue in prolonged pregnancy.

The object of the study was placenta, the investigated groups were 41 week of gestation (n=20), 42 and more (n=20) and 38-40 (n=20) as a control group. Analysis of morphofunctional state of placenta were performed by using clinical data, morphological and pathological findings of research. The criteria for exclusion from the study were diabetes mellitus and multiple gestation. Primary monoclonal antibodies to CD34 (1:100, Dako) and eNOS (1:150, Abcam) were used for IHC method. Alexa Fluor 488 and Alexa Fluor 647 (1:1000, Abcam) were taken as secondary antibodies. Scanning of tissue were performed with confocal microscope Fluo View 1000 (Olympus) with 3D reconstruction of vessels, analysis of diameter of capillars and comparsion of eNOS expression.

The number of placenta infarction and acute circulation injury increase sharply after 41 week of gestation. The average area of eNOS expression in placental villi was 2 times lower in group with 42 weeks gestational age compare to control group. The 3D reconstruction of placental capillaries revealed thickening of the vessel walls and the obliteration of the vascular lumen due to proliferation of endotheliocytes in aged placenta.

We assume that circulation injury established in placenta of prolonged pregnancy could lead to severe hypoxia and other fetal and neonatal risks.

This work was supported by grant MD-6001.2016.7

INSTITUTE

[1] Ott's institue of obstetrics, ginecology and reproductology, [2] Ott's institue of obstetrics, ginecology and reproductology, [3] Ott's institue of obstetrics, ginecology and reproductology