

## Intraplacental 3-D power Doppler in the second part of physiological pregnancy

Pavlova NG, Zakurina AN

The Research Institute of Obstetrics, Gynecology and Reproductology named after D. O. Ott, Saint-Petersburg, Russia

### Objective

The aim of this study was to evaluate the correlation between 3-D power Doppler parameters in the central and peripheral placental parts and gestational age of the normal singleton pregnancy. 16 healthy pregnant women were examined from 20 weeks till delivery in term (every 4 weeks).

### Methods

A prospective observational study was performed. Intraplacental 3-D power Doppler in 5 zones (central, 2 paracentral and 2 peripheral) was carried out. VI, FI, VFI were analysed (Voluson E6, VOCAL). Mean values in 2 paracentral and 2 peripheral placental zones were calculated.

### Results

Regression models of VI, FI, VFI values in different parts of placenta depend on gestational age were made. It was shown that in the second part of physiological pregnancy VI, FI, VFI values were gradually increased till delivery in term: FI in peripheral zones - in 1. 2 ( $p < 0.004$ ), in paracentral - in 1. 3 ( $p < 0.0001$ ), in central - in 1. 5 times ( $p < 0.0001$ ); VI and VFI in central zone - in 2. 8 ( $p < 0.002$ ) and 3. 1 ( $p < 0.0003$ ) times respectively. The differences between central and peripheral zones were incremented with gestational age increasing. The central part vascularization was maximum.

### Conclusion

Our results demonstrated the vascularization priority of the placenta central part during the second part of the physiological pregnancy. It could be of great importance in compared with the cases of the preterm delivery on account of placental insufficiency.

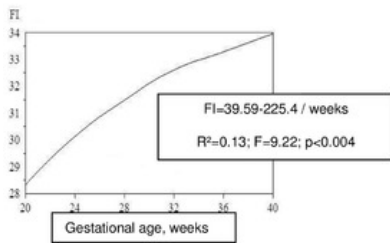


Fig.1 Dependence of peripheral FI on gestational age

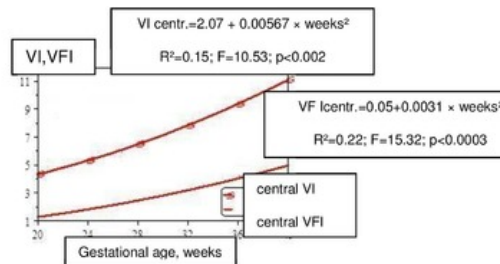


Fig.3 Dependence of central VI, VFI on gestational age

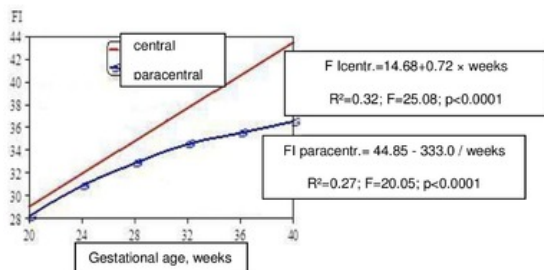


Fig.2 Dependence of central and paracentral FI on gestational age