

## Clinicopathological parallels in diagnosing fetoplacental insufficiency

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### Objective

Estimation of the relationship between the placental histopathology and the degree of uteroplacental and fetal-placental misperfusions.

### Methods

We made a comprehensive analysis of 153 labour and delivery records of pregnant women with a high risk of developing fetoplacental insufficiency. A full medical history was obtained along with regular ultrasound (TOSHIBA XARIO SSA-660A) examinations with doppler and the use of colour mapping; histology of the placenta after delivery as the key indicator of the fetoplacental insufficiency. All pregnant women were divided into 4 groups: 1) pregnant women with misperfusions of I A degree (n=48), 2) pregnant women with misperfusions of I B degree (n=57), 3) pregnant women with misperfusions of II and III degrees (n=24), 4) pregnant women who did not have misperfusions at the moment of examination (n= 24). We considered the last group as a control group.

### Results

Statural weight values of newborns declined from the first group to the third group. In the fourth group where misperfusions in the fetoplacental system were not diagnosed at the moment of examination, the fetus' weight was average (3268±94 g). In the other groups the fetal birthweights were less, in the first group 3190±114g, second group 3052±84g and in the third group 2850±163g. The fetal height decreased similarly: in the control group 51. 1±0. 2 cm, in the first group 50. 6±0. 18 cm, second group 50. 4±0. 5 cm and in the third group 48. 25±0. 9 cm. During the placenta histological examination it was defined that the fetoplacental insufficiency in a compensated degree was observed in 75% of cases in the control group, in the first group 62. 5%, second group 63% and in the third group 57%. The maximum percentage of a subcompensated degree in the third group was 25%, in the first group – 18. 75%, in the second group – 10. 5%. The fetoplacental insufficiency of the compensated degree was not detected in the control group. During ultrasound investigations in the third group, fetoplacental insufficiency was diagnosed in 50% of cases, the fetal growth restriction syndrome of I degree was diagnosed in 42% of cases and the fetal growth restriction syndrome of III degree was observed in 12. 5% of the cases. According to the ultrasound examinations in the first group there were 18. 75% of cases of the fetoplacental insufficiency, in the second group 37% and in the fourth group 12. 5%.

### Conclusion

There is a relationship between results of ultrasound investigations and Doppler ultrasound examinations; they are confirmed by the placenta histological examination data. Statural weight values decrease depending on the misperfusion degree. There is a direct interaction between the fetoplacental insufficiency severity, histological changes in placenta and statural weight values of newborns.