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Morphological Patterns of the Placenta Remodelling In Cases of IUGR at 20-25 Weeks of Gestation

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Introduction/ Background
Placental insufficiency is an important factor of the fetal intrauterine growth restriction (IUGR).

Aims
To confirm the relation between placental morphology changes and fetal IUGR 20 placentas in cases of IUGR at 20-25 weeks of gestation (wg) were compared with 20 placentas at the same wg but without fetal IUGR.

Methods
Material was divided: 10 placentas at 20-22wg and 10 – at 23-25wg both in cases of IUGR, which were studied with corresponding 10 (20-22wg) and 10 (23-25wg) controls. Volume fractions (vf) of the major placental components were determined from 5mmk paraffin sections.

Results
The results have shown that both placental and fetal weights in IUGR groups were smaller than in controls. The poor vascularisation and immaturity of the villous tree were found in cases of IUGR. The thickness of placental membrane increased from 10.74±0.09 at 20-22wg and 10.92±0.09 at 23-25wg in controls to 11.62±0.1 and 11.87±0.12mmk, p<0.05 correspondingly. The tendency of the decrease of fetal vessels vf and increase of the interstitium vf in cases of IUGR at 20-22wg has reached the significant level at 23-25 wg: correspondingly -9.38±1.31 and 58.56±1.98 vs 14.38±2.48 and 52.07±2.75%, p<0.05 in controls.

Conclusions: the histopahological changes in placentas and the increased thickness of placental membrane might represent an important factor in the pathogenesis of the fetal intrauterine growth restriction.