PLACENTA IN GDM: FEATURES OF MORPHOFUNCTIONAL STRUCTURE

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Object

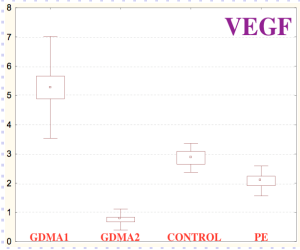
To study a features of morphological structure and the levels of VEGF, eNOS, mast cells (MC), IGF1R expression in GDM placenta.

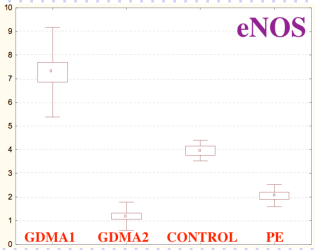
Materials and Methods

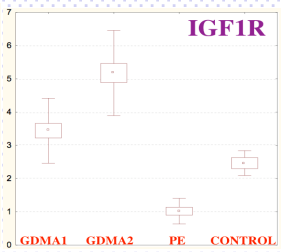
55 placentas were divided into 4 groups: GDMA1 (n=20, group I); GDMA2 (n=20, group II); preeclampsia (n=10, group III); normal (n=5, group IV). Immunohistochemistry tests were performed using antibodies to NOS-3, VEGF IGF1R, α-amylase.

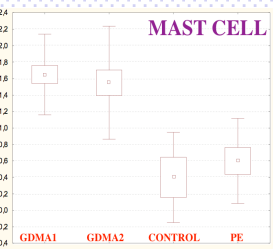
Results

The highest area of expression of VEGF was observed in GDMA1 – 5,27 %, which was twice higher, then in control group 2,86 %, and in preeclampsia 2,07%. Expression VEGF in GDMA2 was lower – 0,75%. The biggest area of expression of eNOS was observed in group I – 7,28 %, and the smallest in group II - 1,1%. The expression of eNOS in control and preeclampsia groups was in average levels - (3,9%-2,05%). The area of IGF1R expression was the biggest in GDM - (3,44%-5,18%). The smallest area was detected in preeclampsia – 1,02%. The area in control group was average – 2,47%. In GDM the number of MC, was significantly higher (in 1,5 times), compared with groups III and IV. The difference MC expression between GDMA1 and A2 hasn't been detected.









Conclusions

In GDMA1 maintaining adequate trophic function through increase synthesis of VEGF and eNOS. These processes lead to hypervascularization and increase of number the terminal villi in placenta. In GDMA2 the decrease of expression VEGF and eNOS leads to higher preeclampsia rate and intrauterine growth retardation (IUGR). The increased level of IGF1R in GDM placenta may be possible cause of fetal macrosomia. The minimal area of IGF1R expression in preeclampsia may be one of the reasons for IUGR. Changes in the number of MC in the placenta can detect placental pathology associated with local inflammation.

References

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