

BSTR-38

Developing an Algorithm that Assesses the Occurrence of Fetal Macrosomia in the Early Stages of Pregnancy for a Decision Support System

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Background & Hypothesis:

The large fetus formation is multifactorial in nature. It is important to develop an algorithm that can assess the occurrence of fetal macrosomia in the early stages of pregnancy by taking into account the weight of endocrine status biomarkers and physical signs in the formation of macrosomia.

Methods:

The serum of pregnant women with fetal macrosomia was retrospectively studied. Biomarkers of endocrine status (TSH, HCG, leptin, thyroxine, cortisol, insulin, prolactin, estradiol, progesterone, ghrelin, growth factors such as PIGF, GDF-15 and IGF-BP-1) of the pregnant female and the fetus at first, second and third trimesters were studied. Statistically significant evidence of selection and a combined list of the most significant were assessed by the receiver operating characteristic analysis method.

Results:

The algorithm to assess the occurrence of fetal macrosomia in the early stages of pregnancy for a decision support system is based on the weighting factors of GDF-15 levels, IGF-1, thyroxine, leptin and weight of the pregnant female.

Discussion & Conclusion:

The decision support system is proposed for practical use by physicians in healthcare so that perinatal loss, severe maternal and fetal injuries, and disability indicators of children can be reduced, thus, bringing positive health and economic benefits. Analytical work was carried out on the equipment of Center for collective use High Technology of SFedU. This research was supported by the Ministry of Education and Science of Russia №6.703.2014/K.



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