INSULIN RESISTANCE IN BULGARIAN PREGNANT WOMEN WITH RISK FOR GDM, DETERMINED BY HOMEOSTASIS MODEL ASSESMENT (HOMA)

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Background. Patients with gestational diabetes mellitus (GDM) are insulin resistant (IR). The homeostasis model assessment (HOMA), has been widely validated and applied for quantifying IR. The HOMA of insulin resistance (HOMA-IR) index is regarded as a simple and reliable surrogate measure of IR.

Methods. 87 women from whom 75pregnant and 12 post part, gestational weeks (24 Vs 25 ± 4). Based on the OGTT, participants were stratified into 4 groups (IADPSG criteria): I-st. group healthy pregnant women with normal glucose tolerance (NGT) (n_1= 7; 9.4%), II-nd group pregnant with impair glucose tolerance (IGT) and high levels of insulin (n_2 = 56; 64%), III-rd group pregnant women with GDM (n_3= 13;14.9%), and IV-th group - 6 weeks post part with GDM (n_3= 13; 12.6%). Venous blood was taken to determine the levels of insulin and glucose from 0,60,120 min. The analysis was done by GM 9 Analyzer "Analox Instruments" for glucose and "Elecsys 2010" – Roshe for insulin. HOMA-IR is calculated.

Results.The pregnant with NGT had significantly lower IR (n_1 = 1.2 ± 0.6). The pregnant with IGT (n_2 = 2.4 ± 1.6 , P = 0.027) and GDM (n_3 = 5.3 ± 4.7 , P < 0.0001) had significantly higher HOMA-IR values compared to pregnant with NGT.

Conclusions. Pathological IR, common for GDM, is a manifestation of a substantial loss of insulin sensitivity with constant character and does not disappear completely after birth. HOMA-IR after delivery is higher without statistically significant difference (p=0.733).