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Correlation between body mass index and the results of the treatment of iron deficiency anemia in pregnant women

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Abstract

Background: Iron deficiency anemia (IDA) is a hematologic syndrome characterized by the deregulation of hemoglobin synthesis due to iron deficiency. During pregnancy, there is an increase of about six times of iron. A correlation between body mass index (BMI) and hemoglobin (Hb) in pregnant women with IDA during the treatment with "Sorbifer Durules" (SD) was evaluated.

Material and methods: A retrospective, cohort study. 40 medical cards of pregnant women diagnosed with IDA during the pregnancy and who were treated with SD: one tablet 2 times per day, were studied. The BMI and Hb levels were assessed in each trimester of pregnancy. The dynamic of Hb values was determined: ΔHb_{II-I} – the difference between Hb values of the 2nd and of the 1st trimesters, ΔHb_{III-II} – the difference between Hb values of the 3rd and of the 2nd trimesters. Statistics: Pearson's correlation coefficient.

Results: IDA was diagnosed in 15 out of 40 pregnant women in the 1st trimester of pregnancy (IDA1), in 19 – in the 2nd trimester (IDA2), in 6 – in the 3rd trimester (IDA3). 7 pregnant IDA1 with normal body weight ($BMI = 18,5-25 \text{ kg/m}^2$) had $\Delta Hb_{II-I} = 14,28 \text{ g/l}$, 8 pregnant IDA1 with grade I obesity ($BMI = 30-35 \text{ kg/m}^2$) had $\Delta Hb_{II-I} = 26,12 \text{ g/l}$. Pearson correlation coefficient between BMI in the 1st trimester of pregnancy and ΔHb_{II-I} in pregnant IDA1: $r = +0,617$, $p = 0,014$. The associations between BMI and ΔHb in pregnant IDA2 and IDA3 were negligible.

Conclusions: There is a substantial and significant association between BMI in pregnant women who developed IDA in the 1st trimester and Hb increase during the treatment with SD.

Key words: iron deficiency anemia, pregnancy, body mass index, hemoglobin.