

Maternal weight gain associated with vitamin D deficiency and treatment outcome

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Background

Weight gain in pregnancy is natural event, but often women gain more, than they should. Sometimes healthy eating is not enough to prevent obesity. Genetic, hormones and individual metabolism is also important. Nevertheless stands for it vitamin D status, as vitamin D deficiency and obesity are pandemic worldwide



Objective

Aim of our study is to evaluate, if weight gain in pregnancy and vitamin D deficiency are associated.

Methods

Open label clinical trial of 84 pregnant women of age 25-35. Exclusion criteria: Any known endocrine diseases, Diabetes Mellitus of any type, twin pregnancy, heavy illnesses. Patients were evaluated on 10-12 weeks of gestational age. Initially mean BMI-23.7 kg/m², 28.5%-overweight, 71.5%-normal weight. Tests: Fasting Glucose, TSH, FT4, 25OHD3, ultrasound. Mean 25OHD3 - 21.34ng/ml.

After pharmacological treatment with 2000IU cholecalciferol, they were followed up at 26 week of gestation. Mean BMI on second occasion - 26.8 kg/m², mean 25OHD3-28.2ng/ml.

Results

Results were analyzed with IBM SPSS Statistics 22. Significance level $p < 0.05$ was considered. There was strong inverse correlation with BMI gain and 25OHD3 level improvement. More BMI gain, lower 25OHD3 level change.

Conclusion

Vitamin D status and outcome of pharmacological treatment with cholecalciferol is associated with weight gain in pregnancy. The more BMI increase, the lower 25OHD level improvement.

Discussion

We don't know yet, if its vitamin D deficiency provocative for more weight gain, or in reverse - it's the overweight slows the metabolism of vitamin D. This is the question for further studies.

