



Estimation of Serum Zinc, Copper and Magnesium Levels in Bangladeshi women with Gestational Diabetes Mellitus Attending in a Tertiary care Hospital

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Abstract:

Zinc (Zn), Copper (Cu) and Magnesium (Mg) are essential trace elements for normal embryogenesis and fetal growth. Alteration of Zn, Cu, Mg concentrations in blood has been observed in normal pregnancy as well as in gestational diabetes mellitus (GDM). Aimed of this study was to evaluate the serum Zn, Cu and Mg levels in Bangladeshi women with GDM in their second and third trimester of pregnancy. This descriptive cross sectional study was conducted at Mymensingh Medical College Hospital from July 2013 to June 2014. Pregnant women, in their second and third trimester, attending the outpatient department of Obstetrics and Gynecology and the Department of Endocrinology of Mymensingh Medical College Hospital were enrolled by purposive sampling technique. GDM was diagnosed on the basis of oral glucose tolerance test (OGTT) as defined in WHO criteria 2013. Out of 172 participants, 86 had GDM (Case) and 86 were normoglycemic (control). The mean age of GDM and control groups was 28.6 ± 3.2 years and 27.3 ± 3.1 years respectively. The BMI was 26.4 ± 1.5 kg/m² and 26.3 ± 1.3 kg/m². In this study we found serum Zn levels in GDM cases were significantly ($p < 0.001$) low in both trimesters (43.93 ± 75.48 µg/dl and 46.86 ± 3.12 µg/dl) compared to those without GDM (67.30 ± 7.81 µg/dl and 67.58 ± 9.12 µg/dl). On the contrary, serum Cu levels in GDM cases were significantly ($p < 0.001$) higher in both trimesters (224 ± 3.8 µg/dl and 243.91 ± 6.9 µg/dl) compared to those without GDM (220.1 ± 7.6 µg/dl and 234.9 ± 4.6 µg/dl). There was significant ($p < 0.001$) increase of serum Cu levels in 3rd trimester compared to 2nd trimester in both GDM and non GDM cases. Serum Mg level was significantly low ($p < 0.001$) in 2nd and 3rd trimesters in GDM cases (1.39 ± 0.26 mg/dl and 0.93 ± 0.15 mg/dl) compared to control group (1.67 ± 0.3 mg/dl and 1.67 ± 0.31 mg/dl). There was distinct alteration of serum Zn, Cu and Mg levels in GDM compared to normal pregnancy.



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