Potassium level during the first half of pregnancy may predict the risk for the development of gestational diabetes mellitus and severe preeclampsia

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Abstract

Objective: To examine the association between potassium level in the beginning of pregnancy and the development of gestational diabetes mellitus (GDM) and hypertensive disorders in the second half of the pregnancy.

Methods. The study population included all registered births between the years 2001-2007. The potassium levels during the first half of pregnancy were sorted by the following groups: K<3.5mEq/l; K=3.5-3.99 mEq/l; K=4-4.99 mEq/l and K≥5 mEq/l. The linear by linear chi-square test was used to determine the association between potassium level during the beginning of pregnancy and pregnancy complications.

Results. The study population included 8114 deliveries, of these 702 (8.7%) were in the K<3.5 mEq/l group 2882 (35.5%) in the K=3.5-3.99 mEq/l and 4530 (55.8%) in the K>4 mEq/l group. A significant linear association was documented between potassium level in the first half of the pregnancy and the prevalence of GDM in the second half of the pregnancy: 6.3% in the k<3.5 mEq/l group, 6.6% in the K=3.5-3.99 mEq/l group 7.9% in the K=4-4.99 mEq/l and 7.9% in the K≥5 mEq/l group; (p=0.009). A non-significant trend for lower rates of severe preeclampsia was noted between the groups (0.7% among the K<3.5 mEq/l group, 1.2% among the K=3.5-3.99 mEq/l group and 1.4% among the K=4-4.99 mEq/l group and 1.8% K≥5 mEq/l group (p=0.211). This trend was statistically significant while dividing the groups to K≤4 mEq/l (1.0%) versus K>4 mEq/l (1.6%, p=0.032).

Conclusions. Low potassium levels during the first half of pregnancy, is associated with lower risk for the development of GDM and severe preeclampsia.