

Magnesium and blood pressure changes in pregnancy

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Abstrak

ABSTRAK

Background of the study, materials and methods: Pregnancy-induced hypertension is still an important cause of maternal and fetal morbidity and mortality. Blood pressure changes during pregnancy especially in the second- and third trimester is very important to be monitored properly during prenatal care through routine blood pressure measurement as an early detection for prevention of pregnancy-induced hypertension. Though its etiology is still unknown, based on various epidemiological studies some nutritional- and non-nutritional factors were believed to be its predisposing factors, which also should be considered during prenatal care. A study had been carried out on 45 pregnant women in all 14 RW of Kelurahan Utan Kayu Selatan, Jakarta, Indonesia. They were followed fortnightly for a 6 weeks observational period to see the relationships between magnesium concentration in serum and in erythrocyte, and blood pressures changes in their second- and/or third trimester, and to see also factors that might influence this blood pressure changes. Anthropometrics, clinical, biochemical, and dietary assessments were done to gather data needed for this observational study. The data was analyzed using statistical tests at alpha equal to 0.05 as the significance level.

Results and conclusion: Hypertension based on the operational definition of this study was found in 4.4% of the subjects. Blood pressure changes in pregnancy in this study only significantly related to primigravida. The intakes of calorie, protein, saturated fatty acid, sodium and magnesium were found to be significantly different ($p < 0.001$) compared to its RDA, yet no significant was found with blood pressure changes/hypertension. Magnesium concentration in serum was mostly within the normal range (1.9 - 2.5 mg/dl) in 73.33% of the subjects, while magnesium concentration in erythrocyte was mostly lower than the normal range (5.7 - 7.5 mg/dl) in 73.33 % of the subjects. The concentration of magnesium in erythrocyte was significantly lower ($p < 0.001$) than the normal level after the 20th week of gestation. The data did not show any significant correlation on the relationship between the concentration of magnesium both in serum and in erythrocyte with blood pressure changes / hypertension.