

## Serum Calcium and Magnesium in Preeclamptic and Normal Pregnancies; A Comparative Study

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### Abstract

**Introduction:** Preeclampsia is a common gestational disorder which complicates 5-8% of pregnancies and it is associated with maternal, fetal and neonatal morbidity and mortality. Alterations in serum calcium (Ca) and magnesium (Mg) levels have been suggested as effective factors in causing preeclampsia. This study was conducted to compare serum calcium and magnesium levels in preeclamptic and normal pregnant women.

**Materials and Methods:** In this case-control study, 50 preeclamptic and 50 normal pregnant women referring to Ghaem Hospital, affiliated to Mashad University of Medical Sciences, were selected during 2005. Blood samples of both groups with similar gestational ages were collected and compared for calcium and magnesium concentrations. The data were analyzed by student t-test,  $\chi^2$ , Kolmogorov-Smirnov, Fisher's exact tests and a general linear model.

**Results:** The demographic data in the two groups, had no significant difference ( $P < 0.01$ ) but there was a significant difference between them in terms of smoking history ( $P < 0.05$ ). Serum magnesium levels in the preeclamptic women were significantly lower than those of individuals with normal pregnancy ( $1.92 \pm 0.37$  mg/dl vs.  $2.29 \pm 0.69$  mg/dl), ( $P < 0.01$ ) while calcium levels had no significant differences ( $9.16 \pm 0.75$  mg/dl vs.  $9.47 \pm 1.58$  mg/dl).

**Conclusion:** This study revealed that serum magnesium level in preeclampsia is lower than that of the normal pregnant women. This result may support the hypothesis on the role of magnesium deficiency in preeclampsia pathophysiology and suggest the usefulness of its assessment in the early diagnosis of the disorder.

**Keywords:** Calcium, Magnesium, Preeclampsia, Pregnancy, Prenatal care.

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