

The effect of calcium supplementation during pregnancy on the birth weight

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Abstract

Nutritional status during pregnancy and intake of essential nutrients affect pregnancy outcome and child health. In most previous studies, high doses of calcium supplements were used during pregnancy to evaluate the effect of calcium intake on pregnancy outcome and their results showed no consistency. In addition, those studies have been mainly carried out to determine the effect of calcium supplementation on relative risk of preeclampsia. The aim of this double blind, placebo controlled, randomized clinical trial on healthy pregnant women during the third trimester of pregnancy was to determine the effect of calcium supplementation (1 g/day, as two 500 mg calcium carbonate capsules) on pregnancy outcome. Participants were 68 healthy pregnant women, allocated randomly into "Calcium Supplement" (n=33) or "Placebo" (n=35) groups from the 28th -30th weeks of gestation through delivery. Factors such as blood pressure, weight, height and BMI were analyzed in both groups. Hemoglobin and blood glucose concentration were determined on the basis of patients' records and dietary calcium intake was estimated by FFQ. Anthropometric parameters of neonates including weight, head circumference and length were recorded. Student t. test and χ^2 were used for analyses of the continuous quantitative and qualitative variables, respectively and p-value <0.05 was considered as statistically significant. There was no difference between our 2 groups regarding such factors as age, parity, height, weight, pre-pregnancy body mass index (BMI), blood pressure, and dietary calcium intake. Compliance was >80% in both groups and there was no significant and meaningful difference between them regarding this factor. As compared to the placebo, calcium supplementation increased the mean birth weight in the "Calcium Supplement" group (P<0.05). The observed effect remained unchanged after removing four neonates born before the 37th week of gestation (251 g, P<0.05). It is concluded that calcium supplementation in healthy pregnant mothers may increase birth weight independent of gestational age.

Keywords: Calcium supplement, Pregnancy, Pregnancy outcome, Birth weight, and Pregnancy care.

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