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ORIGINAL PAPER

Impact of oral magnesium supplementation on maternal and fetal parameters in the second trimester of pregnancy*

Joanna Suliburska¹, Rafsan Cholik¹, Piotr Włodarczyk²,
Konrad Szmyt², Ewa Bakinowska³,
Constantin von Kaisenberg⁴, Rafał Kocylowski^{2,5}

¹Department of Human Nutrition and Dietetics,
Poznan University of Life Science, Poznan, Poland

²PreMediCare Prenatal Research Center, Poznan, Poland

³Institute of Mathematics,
Poznan University of Technology, Poznan, Poland

⁴Department of Obstetrics and Gynecology,
Hannover Medical School, Hannover, Germany

⁵New Med Medical Center, Poznan, Poland

Abstract

Magnesium supplementation during pregnancy is believed to reduce the risk of maternal complications and abnormal fetal development. This observational study aims to evaluate maternal and fetal parameters in pregnant women during the second trimester who received magnesium supplementation. The study included 200 healthy women in the second trimester of pregnancy. Participants were divided into two groups: one received a recommendation for magnesium supplementation (n=100), while the other did not (n=100). Magnesium concentrations in maternal serum (MS) and amniotic fluid (AF) were measured using atomic absorption spectrometry (AAS). Maternal parameters, including blood pressure and prepregnancy body mass index, and fetal parameters, including estimated fetal weight (EFW), Doppler measurements, and cytogenetic karyotype, were measured. Magnesium supplementation increased magnesium concentrations in both MS and AF, with a positive correlation observed between these parameters. EFW was significantly higher in the supplementation group than in the nonsupplemented group. Moreover, serum magnesium concentration correlated positively with EFW. An inverse relationship was noted between AF magnesium concentration AF and gestational age. Magnesium supplementation initiated early in pregnancy improves MS and AF magnesium concentrations in the second trimester. Supplementation contributes to enhanced fetal development, as reflected in increased fetal weight compared to nonsupplemented pregnancies.

Keywords: pregnancy, magnesium, serum, amniotic fluid, fetus

Prof. dr hab. Joanna Suliburska, Department of Human Nutrition and Dietetics, Poznan University of Life Science, ul. Wojska Polskiego 31, 60-624 Poznan, Poland, e-mail: joanna.suliburska@up.poznan.pl.

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