Urinary Iodine Concentrations in Mothers and Their Term Newborns in Country with Sufficient Iodine Supply

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Abstract

Objective: The main aim of the study was to evaluate maternal and newborn urinary iodine concentrations according to the usage of iodine supplementation during pregnancy.

Methods: Thirty-seven women with singleton uncomplicated pregnancies and their newborns were included in this study. Maternal urine samples were obtained at the time of delivery and on the third day after delivery. Newborn urine samples were obtained on the third day after delivery. Urinary iodine concentrations were determined by the alkaline ashing of urine specimens followed by the Sandell-Kolthoff reaction using brucine as a colorimetric marker.

Result: The overall rate of the usage of iodine supplementation during pregnancy was 54% (20/37). Women who used the iodine supplementation during the pregnancy did not have different urinary iodine concentrations neither at the time of delivery (p = 0.23), nor on the

third day after delivery (p = 0.65) in comparison to women without extra iodine supplementation. Newborns from pregnancies with regular iodine supplementation had higher urine iodine concentrations on the third day after delivery (p = 0.02). When women were split into several subgroups based on the daily dosage of iodine supplementation (200μg, 150μg, 50μg daily and without iodine supplementation), no differences were found in maternal urine iodine concentrations at the time of delivery (p = 0.51) and on the third day after delivery (p = 0.63). Different levels were found in newborn urine iodine concentrations among the subgroups of newborns from pregnancies with different daily doses of iodine supplementation and from pregnancies without iodine supplementation during pregnancy (p = 0.05).

Conclusions: Iodine supplementation during pregnancy affects newborn urine concentrations but not maternal urine concentrations.

Key Words: urinary iodine concentrations, pregnancy, newborn