Urinary iodine concentrations of pregnant women in Ukraine.


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BACKGROUND: Iodine requirements increase during pregnancy and previous studies have reported the inadequate iodine status of pregnant women in areas that have achieved iodine sufficiency in the general population. We examined the urinary iodine (UI) concentrations of pregnant women in Ukraine, where the iodine status is showing improvement among the general population.

METHODS: We enrolled 148 pregnant women<16 weeks pregnant and 80 healthy women as a control group living in Zhitomir, Ukraine. UI concentration, thyroid-stimulating hormone (TSH), antithyroglobulin antibodies (TGAb), and antithyroid peroxidase antibodies (TPOAb) were measured.

RESULTS: The median UI concentrations were significantly lower in pregnant women than in control women [13.0 (ND–51.0) μg/L vs. 62.0 (35.3–108.5) μg/L, p<0.001]. TSH concentrations were significantly lower in pregnant women than in control women [1.7 (1.2–2.7) IU/L vs. 2.2 (1.4–3.1) IU/L, p=0.011], but this difference disappeared when adjusted for age (2.1±0.1 IU/L vs. 2.4±0.2 IU/L, p=0.097). The frequency of TSH over 6.2 IU/L and the frequency of positive TGAb and/or TPOAb were not statistically different between groups (p=0.70 and p=0.48, respectively). The UI concentrations of 142 pregnant women (95.9%) were <150 μg/L indicating insufficient iodine intake.

CONCLUSIONS: The UI concentration of pregnant women in Ukraine revealed severe iodine deficiency. Regular monitoring and appropriate nutrition education are essential because iodine deficiency can be easily prevented by adequate iodine intake. The risk of iodine deprivation during pregnancy needs to be assessed locally over time because it may occur in areas that are not globally recognized as being iodine-deficient.

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