Low iodine intakes in Turkish pregnant women and their newborns


Background
Turkey is a country situated partly in Europe and Asia, with a population of 83 million and 1.25 million live births per year. A national household salt iodization program has been installed since 1998 and household coverage is high, but food industry salt is not iodized. The most recent national data from school aged children (2007) indicate sufficient iodine intakes, with a median urinary iodine concentration (mUIC) of 107 µg/L (1). It is estimated that 59.2% of households are using iodized salt (1). Small regional studies have suggested iodine deficiency in Turkish pregnant women.

Study design
A recent national cross-sectional survey aimed to assess the iodine status in pregnant women and their offspring by measuring the mUIC. For each mother-newborn pair, a questionnaire was completed for age, parity, and birth weight as well as additional information regarding thyroid diseases, use of iodized salt in the household, extra iodine supplementation during pregnancy, education level and income.

Results
The study population represented 1444 pregnant women who gave birth in 2018-2019, and their offspring. The median UIC in pregnant woman was 94 (52–153) µg/L. The median UIC in their offspring was 96 (41–191) µg/L. In the survey, 89% of pregnant women reported using iodized salt.

Pregnant women with lower socioeconomic and education level, lower access to household iodized salt, lower rates of exposure to povidone-iodine containing skin disinfectant, higher parity and higher iodine deficiency had higher rates of iodine deficiency in their offspring. Regional differences were observed both in mothers and their offspring concerning their iodine status (Figure 1). The findings suggest that iodine deficiency is still an important public health problem in pregnant women in Turkey.

Context
The results of this study are supported by data from Turkey from the national neonatal TSH screening program; a study of 1.27 million newborns reported 7.2% elevated TSH values in 2014, suggesting maternal iodine deficiency (2).

Moreover, in a study from Turkey, 67% of physicians thought it was unnecessary to offer iodine supplementation to pregnant women (3). In the present study only 5% of the pregnant women declared to have received iodine supplementation during their pregnancy. The authors suggest that heightening the awareness of Turkish physicians on the importance of maternal iodine intake would be important.

Although a national table salt iodization program has been established in Turkey, since 1998, industrial salt is not iodized. Universal salt iodization is effective, but it works best when it’s truly universal, that is, when sufficient iodine (20–40 mg/kg) is added to all salt for human consumption, including table salt and salt used in food production by manufacturers of processed foods and condiments. It is generally assumed that the iodine requirements of all population groups are covered in settings where USI has been successfully implemented for ≥2 years, and iodine intakes in school-age children are adequate.

In order to prevent the iodine deficiency in pregnant women, and most importantly, iodine deficiency in Turkish newborns, the authors of this study suggest Turkey needs to implement measures such as:

- iodization of industrial salt, bread
- iodine addition to vitamin/mineral supplements given during pregnancy
- changing diet habits to increase the seafood and fish consumption
- increase milk consumption together with optimizing its iodine concentration

References
1. https://www.ign.org/turkey.htm