LACTATING MOTHERS AND INFANTS RESIDING IN AN AREA WITH EFFECTIVE SALT IODIZATION PROGRAM HAVE NO NEED FOR IODINE SUPPLEMENTS: RESULTS FROM A DOUBLE-BLIND, PLACEBO-CONTROLLED, RANDOMIZED CLINICAL TRIAL

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Background: The necessity of iodine supplementation in lactating mothers residing in countries with sustained salt iodization programs for iodine-sufficiency of breastfed infants remains unclear.

Objective: The aim of the study was to investigate the effect of iodine supplementation on iodine status and growth parameters of lactating mothers and breastfed infants during the first year of infancy.

Methods: In this multi-center, double-blinded, randomized clinical trial conducted in four healthcare centers in Tehran (Iran), healthy lactating mothers and their term newborns aged 3-5 days were randomly assigned to treatment groups: placebo, 150 µg/d iodine, or 300 µg/d iodine, and followed-up for 12 months. The primary outcomes were maternal and infant urinary iodine concentrations (UICs), breast milk iodine concentrations (BMICs), and infant growth parameters, measured at 1, 2, 4, 6, 9, and 12 months during routine health visits.

Results: One hundred and eighty mother-newborn pairs participated between October 2014 and January 2016. Median baseline UICs (interquartile range) were in mothers 84 (41-143) µg/L and infants 208 (91-310) µg/L. The 300 µg iodine/d group showed significantly higher UICs and BMICs than did the 150 µg iodine/d or placebo groups. Infants in all groups showed iodine sufficiency (median UIC ≥100 µg/L) throughout the study period. Infant anthropometric measurements were similar between three arms of treatment group over the study period.

Conclusions: Supplementation of breastfeeding mothers with either 300 or 150 µg iodine/d improved their iodine status; however, the iodine status of infants in all groups studied indicated iodine sufficiency during the first year of infancy.

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