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ORIGINAL ARTICLE

Assessment of iodine nutritional status in the general population in the province of Jaén☆

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Urinary iodine concentrations;
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Abstract
Background and objective: Iodine deficiency affecting both pregnant women and schoolchildren has been reported in Jaén. Iodine deficiency is one of the leading causes of thyroid dysfunction and goiter, and adequate iodine prophylaxis with iodized salt, milk, and dairy products, or iodine supplementation have been shown to significantly improve iodine status in pregnancy. The purpose of this study was to assess iodine nutritional status in the general population of a iodine-deficient area with no previous institutional campaigns of iodine prophylaxis.
Material and methods: A descriptive, cross-sectional study. Urinary iodine levels were measured in subjects from the Jaén healthcare district. The data were stratified by sex and age groups, and a survey was conducted on iodized salt consumption.
Results: Median and mean urinary iodine levels were 110.59 mcg/L and 130.11 mcg/L respectively. Urinary iodine levels were significantly higher in schoolchildren as compared to other age groups (161.52 μg/L vs 109.33 μg/L in subjects older than 65 years). Forty-three percent of the population had urinary iodine levels less than 100 μg/L, and 68% of women of childbearing age had levels less than 150 μg/L.

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Conclusions: Iodine nutritional status appears to be adequate, but the proportion of the population with urinary iodine levels less than 100 μg/L is still very high, and iodized salt consumption is much less common than recommended by the WHO.

PALABRAS CLAVE
Yoduria;
Nutrición yódica;
Sal yodada

Evaluación del estado de nutrición yódica en población general en la provincia de Jaén

Resumen
Antecedentes y objetivo: En Jaén se conoce que existe una deficiencia de yodo (DY) de leve a moderada, y que afecta tanto a escolares como a mujeres embarazadas. Se sabe que la DY es una de las causas principales de disfunción tiroidea y bocio, habiéndose establecido que una yodoprofilaxis adecuada en zonas yododeficientes, tanto en forma de sal yodada, leche y sus derivados, o la toma de suplementos yodados, en caso de gestación, conlleva una mejoría significativa de estos problemas. El objetivo de este estudio es evaluar el grado de nutrición yódica en población general en una zona catalogada como yododeficiente y sin que se hayan llevado a cabo, por el momento, campañas institucionales de yodoprofilaxis.
Material y métodos: Estudio descriptivo de corte transversal. Se ha realizado determinación de la yoduria en población general en el distrito sanitario de Jaén, separando en grupos según la edad y el género, y se ha encuestado sobre del consumo de sal yodada.
Resultados: La mediana de yoduria fue de 110,59 μg/l y la media de 130,11 μg/l. Se encuentran diferencias estadísticamente significativas en los niveles de yoduria en los escolares con respecto al resto de grupos de edad, siendo la media de yoduria en este grupo de 161,52 μg/l vs 109,33 μg/l en los mayores de 65 años. Encontramos que el 43% de la población tiene una yoduria menor de 100 μg/l y que en las mujeres, en el grupo de edad fértil, hay un 66,8% con niveles de yoduria inferior a 150 μg/l.
Conclusiones: la situación nutricional de yodo indicaría que se encuentra dentro de lo que se considera una nutrición adecuada, si bien encontramos que el porcentaje de población que presenta yodurias por debajo de 100 μg/l es aún muy elevado, y que la prevalencia del consumo de sal yodada en hogares es del 30,9%, muy por debajo de las recomendaciones de la OMS.

Introduction

Doctors F. Escobar del Rey and G. Morreale de Escobar promoted the study of iodine deficiency in Spain, with multiple reports demonstrating the magnitude of this problem.[1–4]

Over the last 20 years, many publications have reported changes over time in iodine nutrition in various Spanish regions. Studies conducted in schoolchildren,[5] pregnant women,[6] and the adult population[7] have been particularly relevant. Some studies provide examples of cooperation between scientific bodies and health authorities, such as the establishment of iodine prophylaxis schemes in some regions, as occurred in Asturias.[8,9]

Understanding the situation in this regard is important because iodine deficiency (ID) is related, amongst other things, to the occurrence of changes in the psychomotor development of children. These range from minor problems with mild ID to endemic cretinism with highly severe ID.[5,10,11] Goiter is the most typical manifestation of ID. And although women of childbearing age, infants, and schoolchildren are the most exposed subjects, the whole population can benefit from iodine prophylaxis campaigns aimed at improving iodine nutrition in society in general (Table 1).

UNICEF, ICCID (the International Council for Control of Iodine Deficiency), and the WHO[12] have issued specific recommendations for iodine intake based on age, and proposed indicators of iodine nutritional status in the community (Table 2). Urinary iodine level is the most important indicator, because while thyroglobulin and neonatal TSH levels and the prevalence of goiter in schoolchildren reflect evolution over time to adequate iodine intake, urinary iodine is a more up-to-date and immediate measure of iodine nutrition status in any studied population because a fairly stable balance is established between iodine ingested and excreted.

They have also established an action protocol through the organizations involved in public health, recommending that the most adequate way to correct ID is the use of iodized salt. This protocol has been adapted both to general Spanish requirements[13] and to the specific requirements of each Spanish region, although in Andalusia there has been no institutional campaign to assess iodine nutrition in the population, nor iodine prophylaxis campaigns to promote the use