Short Communication

Iodine status of pregnant mothers residing in a district of endemic iodine deficiency in the state of Himachal Pradesh, India

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For the last 40 years the Kullu district in Himachal Pradesh, India, has been recognised as an area of endemic iodine deficiency. The state government has adopted a policy of universal iodisation of salt since 1984. The iodine status of pregnant mothers is an indicator of the community status of iodine deficiency. This study was, therefore, undertaken on the iodine status of pregnant mothers to assess the impact of universal salt iodisation. A total of 147 pregnant mothers between 20-30 years of age in their second and third trimesters, attending the antenatal clinic at the district hospital, were selected for the study. Urine samples were collected from all the pregnant mothers and analysed using standard laboratory methods. It was found that 0.68% of the pregnant mothers had urinary iodine excretion between 2.0-4.9 mcg/dL, 8.8 % between 5.0-9.9 mcg/dL and 90.5% had 10 mcg/dL or more, where below 10 signifies iodine deficiency disorder (IDD). This indicates that there is a need to strengthen the implementation of the universal salt iodisation program in the Kullu district to combat IDD.

Key words: IDD (Iodine Deficiency Disorder), pregnancy, iodised salt, urinary iodine excretion, India, Himachal Pradesh

Introduction

Iodine deficiency is a public health problem in India. In all districts in the state of Himachal Pradesh, Iodine Deficiency Disorders (IDD) are endemic[1], In District Kullu in particular (in Himachal Pradesh), endemic iodine deficiency is recognised. Since 1984 the state government, has adopted a policy of universal salt iodisation under which the entire population of the state is to receive salt with a minimum of 15ppm of iodine[2].

A reliable method of assessing the extent of IDD in a population is to determine the urinary iodine excretion levels in a vulnerable group[3]. Pregnant mothers are a susceptible group for assessing iodine deficiency as the iodine requirements during this physiological state are comparatively high. It is a group recommended for active assessment of iodine status[3].

The present study was undertaken to assess the iodine status of pregnant mothers in the second and third trimesters of pregnancy in an (IDD) endemic area of Himachal Pradesh.

Materials and Method

The study was conducted in Kullu district of the state of Himachal Pradesh. One hundred and forty seven pregnant women from the second and third trimesters of pregnancy attending the antenatal clinic at the district hospital were randomly selected for the study. The pregnant women were in the 20-30 year age group and belonged to the middle income group.

Casual urine samples were collected from pregnant women in screw type plastic bottles and were transported to the laboratory. The urine samples were kept in a refrigerator until analysis in order to avoid evaporation. The urinary iodine content was estimated using the standard method[4].

Results and Discussion

The urinary iodine excretion of pregnant mothers included in the study is depicted in Table 1. Results revealed that 9.5% of women had an iodine excretion of less than 10 ug/dl, indicating that the pregnant women were suffering from IDD. this area.

In the state of Himachal Pradesh, there has been a ban on the procurement and sale of non-iodised salt since 1984, however iodine deficiency is still amongst the pregnant mothers. This could possibly be due to the consumption of salt with an inadequate iodine content.

An evaluation study conducted in 6 districts of Himachal Pradesh revealed that 44% of the salt samples collected from 326 households and 98 retail traders had an iodine content less than 15ppm[5]. Another study revealed a high prevalence of goitre amongst the school children[6]. The results of the present study are consistent with these findings.

There is a need to further strengthen the monitoring of the quality of salt that is procured and distributed to the population residing in Kullu district in order to combat IDD.

Table 1. Urinary iodine excretion level of pregnant mothers. (n=147).

Urinary iodine excretion (μg/dL)	Pregnant mothers		Iodine deficiency status
	No	%	
<2.0	0	-	Severe
2.0-4.9	1	0.7	Moderate
5.0-9.9	3	8.8	Mild
10 above	133	90.5	No deficiency

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居住在印度Himachal Pradesh 州缺碘流行地區妊娠母親體内碘含量狀態

摘要

在過去40年來，印度Himachal Pradesh 州Kullu地區一直被視爲缺碘流行地區. 自1984年以來，政府采用了全民碘鹽供給的政策. 妊娠母親體内碘含量是社區性缺碘的指征. 此項研究的目的是用妊娠母親體内碘含量狀况評價全民碘鹽化的效果.

在Kullu 地區醫院妊娠診所挑選了147 名20－30歲在妊娠中末期的母親. 在這些妊娠母親中，有0. 68% 其體内碘排泄量在2. 0－4. 9 mcg/dl; 8. 8% 在5. 0－9. 9 mcg/dl; 90. 5% 高于10 mcg/dl. 結果顯示有十分之一的妊娠母親是碘缺乏症（IDD）患者. 這一調查指出，需要加强在Kullu 地區全民碘鹽化的實行，從而控制缺碘症的發展.

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