4 NUTRITIONAL DISORDERS

4.1 Assessment of iodine deficiency disorders in Baiga Chak area of district Dindori

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Rationale

High prevalence of goiter among the tribal children particularly among the primitive Baiga tribe (45%) as found in the center's study during 1986-87 is still a matter of concern. A multicentric study of ICMR conducted among the tribes of M.P. identified mass use of crystal salt in food and its process of storing leads to deficiency in iodine content and is considered as one of major reason of goiter among the tribal children. Subsequently with the implementation of Rajiv Gandhi Mission for iodine deficiency disorder (1994) and salt iodization strategy (1996) in Madhya Pradesh, the present study is an endeavour to assess the current status of iodine deficiency disorder in the Baigachak area in Dindori district of Madhya Pradesh.

Objectives

1. To determine the prevalence of goitre in school going children clinically.
2. To assess the iodine status (urinary iodine excretion) of school children.
3. To assess the iodine content of the salt consumed by the population.

Methodology

A total of 1012 school children of Baiga Chak area were clinically examined for prevalence of goiter. Urine samples were collected from 490 children to see the iodine nutrition among them following wet digestion method. Beside these salt samples were collected from different households and from market place for its iodine content following Kit method procured from National Institute of Nutrition, Hyderabad.

Results

Clinically the prevalence of goitre was found to be 20% (Table 4.1.1). Goitre which is palpable but not visible (G1) was 18.3% while visible goitre (G2) identified to be 1.8%. More than 87% school children were found to have low urinary Iodine in nutrition. Iodine nutrition is low in female (91.6%) as compared to male (83.5%) (Table 4.1.2).

About 48% of salt sample collected and examined showed <7PPM iodine content (Table 4.1.3). The probable reason could be as KAP survey reveals, the villager prefer to use crystal salt as it is cheaper compared to other varieties of eatable salt available. Since these crystal salts are available in crude and unclean form, these are kept in open and washed with water before use and in this process the iodine contents gets evaporated and also washed away.

The study indicates that severity of iodine deficiency disorder (IDD) has decreased when compared with the previous study of RMRCT (ICMR), Jabalpur in 1986-87. The urinary Iodine concentration, which is the most reliable indicator of IDD, showed severe to moderate Iodine deficiency in Baigachak area. These results indicate that though the prevalence of IDD has decreased but Iodine deficiency is still a public health problem in study area.

Table 4.1.1: Sex wise prevalence of Goitre in school children (clinical)

Sex	Prevalence of Goitre			
	G1	G2	Normal	Total
Male	74 (13.9)	9 (1.7)	451 (84.9)	534
Female	111 (23.2)	9 (1.9)	358 (74.9)	478
Total	185 (18.3)	18 (1.8)	809 (79.9)	1012

NB: Figures in the parenthesis refers to percentage

Table 4.1.2: Sex wise Urinary Iodine excretion among the school children

Sex	No. of children according to range of urine iodine concentration (µg/l)					
	<20	20-49	50-99	100-199	200-299	≥ 300
Male N=287	17 (5.12%)	170 (59.23%)	55 (19.16%)	42 (14.63%)	3 (1.04%)	0
Female N=203	20 (9.85%)	119 (58.62%)	47 (23.15%)	15 (7.38%)	2 (0.98%)	0
Total N=490	37 (7.55%)	289 (58.97%)	102 (20.81%)	57 (11.63%)	5 (1.02)	0

NB: Figures in the parenthesis refers to percentage

Table 4.1.3: Iodine content in salt samples

Range	No. of Samples
Less than 7 PPM	125 (47.5%)
7 to15 PPM	134 (50.9%)
More than15 PPM	4 (1.5%)
Total	263