

Goiter Prevalence in Children in North India Region

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Research Article

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ABSTRACT :

Goiter is denotes to the abnormal development of the thyroid gland. The insufficient intake of the Iodine may lead to the Goiter. Iodine deficiency is a lack of the trace element iodine. It may result in goiter (so-called endemic goiter), as well as cretinism, which results in developmental delays and other health problems. Iodine deficiency is an important public health issue as it is a preventable cause of intellectual disability.

The goiter survey was done in the rural area of the North Indian district. In the study the primary schools were selected to get the proposed goiter population for the study. The school children's between the age of 5-12 years were included from the schools. All the enrolled patients were clinically examined for the goiter i.e. development of the thyroid. The age & the sex of the students were also noted.

In the summary that the present data showed that the prevalence of the goiter in the age group of the 5-13 in the rural area of the north India. There is need to implement the ban on the non iodized salt in the area. Also the efforts must be taken to improve awareness regarding the use of Iodized salt to avoid the Goiter.

Keywords: Goiter, School children, prevalence of goitre.

INTRODUCTION:

Goiter is denotes to the abnormal development of the thyroid gland. The existence of a goiter does not inevitably mean that the thyroid gland is not working properly. There are many other reasons also responsible for the malfunctioning of the thyroid gland.

The hyperthyroidism is the condition in which gland is generating too much hormone. When the thyroid gland is producing low hormone condition is mentioned as hypothyroidism. Euthyroidism is condition when thyroid gland is producing the correct amount of hormone. A goiter indicates there is a condition present which is causing the thyroid to grow abnormally [1].

Goitre which is related with hypothyroidism or hyperthyroidism may be present with symptoms of the primary disorder. For hyperthyroidism, the most collective indications are connected with adrenergic stimulation: tachycardia, palpitations, nervousness, tremor, increased blood pressure and heat intolerance. Clinical indications are often linked to hypermetabolism, including increased metabolism, excessive thyroid hormone, an increase in oxygen consumption, metabolic changes in protein metabolism, immunologic stimulation of diffuse goitre, and ocular changes (exophthalmos).[2] Hypothyroid persons may have weight gain regardless of poor appetite, cold intolerance, constipation and lethargy. Though, these symptoms are often nonspecific and hard to diagnose.

Iodine is a vital micro-nutrient essential for human nourishment. Iodine deficiency disorders (IDDs) are one of the main global public health complications of today which cause extensive range of disabilities. These includes impairment of reproductive functions, lowering of IQ levels in

school age children, goiter, deaf mutism, mental defects, weakness and paralysis of muscles as well as lesser degree of physical dysfunction [3]. Many studies conducted all over India had shown high incidence of goiter [4-7]. A nation wide goiter survey revealed that out of 283 studied districts of 29 states and 04 Union territories, 235 have incidence of endemic goiter [8].

International goal of Universal salt iodization (USI) was established & started worldwide. In India essential iodization of all table salts was introduced 1983. In June 1992 the National Goiter Control Programme was redesigned as "National Iodine Deficiency Disorders Control Programme (NIDDCP)", in recognition of the spectrum of disorders due to iodine deficiency.

Normal thyroid function is important for growth and development in young population. Autoimmune thyroiditis is becoming gradually prevalent in children as evident from goiter surveys. Subjects with autoimmune thyroiditis manifest clinically as euthyroidism, sub clinical hypothyroidism, overt hypothyroidism.

The data on the goiter and the status of iodine nutrition are not available in the regions. So the study was planned to assess the prevalence of the goiter.

Methodology [9]:

The goiter survey was done in the rural area of the North Indian district. In the study the primary schools were selected to get the proposed goiter population for the study. The school children's between the age of 5-12 years were included from the schools.

All the enrolled patients were clinically examined for the goiter i.e. development of the thyroid. The age & the sex of

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the students were also noted.

Result & Discussion:

The WHO classifies the goiter in following 3 classes.

- Grade 0: no goiter;
- Grade 1: thyroid palpable but not visible;
- Grade 2: thyroid visible with neck in normal position

Table 1 : Age Specific Goiter Observation

Age (yrs)	Goiter Type		
	Grade 0	Grade 1	Grade 2
5-7	100	15	1
7-9	127	28	2
9-11	135	21	3
12-13	90	17	4

The 5-7 year age group showed the 15 cases of Grade-1 & 1 case of Grade-2.

The next 7-9 years of age group shows 28 cases of the Grade-1 & 2 cases of Grade-2. In 9-11 years children's 21 cases of the Grad-1 & 3 cases if Grade-2 was observed. The higher age group of 12-13 years shows 17 cases of the Grade-1 & 4 cases of grade-2.

Table 2 : Sex Specific Goiter Observation

Sex	Goiter Type		
	Grade 0	Grade 1	Grade 2
Males	320	46	6
Females	132	35	4
Total	452	81	10

There is a significant association between the age of school children and prevalence of goiter. In addition the prevalence among girls was more than boys. The observed result is almost consistent with earlier observations(10,11)

Conclusion:

In the summary that the present data showed that the prevalence of the goiter in the age group of the 5-13 in the rural area of the north India. This indicated that the presence of the Iodine in the salt & the food is less. So the action needs to be taken to control such situations. Also it shows that there is need to implement the ban on the non iodized salt in the area. Also the efforts must be taken to improve awareness regarding the use of Iodized salt to avoid the Goiter.

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