A SURVEY OF GOITER IN HAZARA DIVISION

Rizwanullah. S Humayun Shah, J A Khan, Mir Hassan Khan, Salahuddin andFazle Suhhan

ABSTRACT

A survey of goiter in Hazara Division was carried out from April, 1990 to March. 1991. Out of31045 persons surveyed, 5469 were found to have goiter, thus showing an overall prevalence of 17.6%. The prevalence rate was higher in rural population (24%) as compared to urban (5%). Male female ratio was about 1:1.5. Increased prevalence was observed between 26 and 35 years for males whereas for females it was more in the age group of 36 to 45 years.

INTRODUCTION

Goiter can be defined as a non-inflammatory, non-neoplastic enlargement of the thyroid, without hyperthyroidism.[1] Iodine deficiency both in water and soil is the most common cause of goiter.[2] The lack of iodine leads to a decreased synthesis of thyroid hormones, and a compensatory increase in TSH, causing follicular ceil hypertrophy and hyperplasia, with the generation of new follicles and goitrous enlargement of thyroid[3] Certain dietary substances may aggravate the picture by interfering with the synthesis of thyroid hormones.[4] In severe Goiter, there is a high incidence of endemic cretinism. WHO reported that 350,000 persons are moderately or severely handicapped with endemic cretinism and about-170,000 persons are cretinous with mild handicaps in Pakistan.[5] Supplementation of diet with more than adequate amounts of Iodine (75- 300mg/day) does not always eradicate goiter. Other goitrogenic substances from a number of commonly used foods like cabbage, turnips, maize, sweet potato, onions, garlic, olive oil and milk.[6] Goiter prevalence is also high where water is polluted with certain bacteria e.g. E. coli and similar organisms.[7] The prevalence of endemic goiter can be tremendously reduced by simply introducing the use of iodized salt, iodination of water capsules or injection of iodized oil

Goiter prevalence is very high in Chitral and Northern areas of Pakistan[8], however, cases have also been reported from plain areas of NWFP like Swabi & Mardan.[9] Significant number of cases have also been observed in Rawalpindi and Jhelum.[10] Certain areas of Hazara are known for high prevalence of goiter. A survey was therefore, undertaken to determine the prevalence of goiter in males and females.

From Ayub Medical College, Abbottabad.
RIZWANULLAH, Statistical Officer, PMRC Research Centre.
S. HUMAYUN SHAH, MBBS, DCP, M.Phil, Professor of Pathology.
MIR HASSAN KHAN, Research Officer, PMRC Research Centre.
JAHANGIR A. KHAN, Ph.D.(U.K.) Principal Research Officer, PMRC Research Centre.
SALAHUDDIN, PhD D, (UK) Chairman, Department of statistics, University of Peshawar.
FAZALE SUBHAN, M. Phil, Govt. College of Abbottabad.

MATERIAL AND METHODS

A joint survey was conducted by PMRC Research Centre and Pathology Deptt. Ayub Medical College Abbottabad in urban and rural areas of Hazara Division. The Division consists of four districts i.e. Haripur, Abbottabad, Mansehra and Kohistan. The areas selected were Dhamtore, Mochi Kot, Sath Banin of Distt Abbottabad, Sari Kot, Choi of Distt Haripur, Sachan and Kewai of Mansehra district and Pattan of Kohistan Distt. The socio-economic status of people and housing facilities in these four districts are almost the same.

Most of the areas of Kohistan Mansehra and Abbottabad have a rugged terrain and severe winter with snow fall. The subjects were randomly selected by using Fisher and Yats Statistical tables applying stratified random sampling technique. All the accessible areas from four district were selected.

A total of 31045 subjects were surveyed (tabie-1&2). The goiter was graded in to palpable (Grade-1) and visible(Grade-2). The positive cases were confirmed by a medical doctor. Information regarding age, sex, duration of stay, family history, presence of goiter, previous ailments and source of drinking water were recorded on a proforma.

TABLE-1: DISTRIBUTION OF SUBJECTS BY AREA AND SEX.

Area	Male	Female	Total
Urban	5832	4226	10058
Rural	12492	8495	20987
Total	18324	12721	31045

TABLE-2: DISTRIBUTION OF SUBJECTS BY AGE AND SEX.

Age Group	Male	Percentage	Female	Percentage	Total	Percentage
<15	1771	9.7	786	6.2	2557	8.2
15-25	3978	21.7	2523	19.8	6501	20.9
26-35	4018	21.9	3954	31.1	7972	25.7
36-45	3792	20.7	2805	22.0	6597	21.2
46-55	1978	10.8	1899	14.9	3877	12.5
56 +	2787	15.2	754	6.0	3541	11.5
Total	18324	100	12721	100	31045	100

RESULTS

Of the total subjects examined, 20987 were from rural and 10058 from urban. Over all prevalence of goiter was observed to be 17.6%. It was more common in rural areas (23.88%) as compare to urban population (4.6%) (Table-3). Concordance in families was found in more than 60% cases. The prevalence of goiter in different age groups is presented in Table-4. The highest

prevalence was observed in the age groups 26 - 35 years for males and 36 to 45 years for females.

TABLE – 3: DISTRIBUTION OF GOITER IN RURAL AND URBAN POPULATION

Age Group	Urban			Rural			Total
	M	F	T	M	F	T	
< 15	10	17	27	102	109	211	238
15-25	35	49	24	210	221	431	515
26-35	56	15	71	969	573	1542	1613
36-45	58	31	89	570	759	1339	1418
46-55	68	14	82	264	511	775	857
56 +	88	18	106	262	460	722	828
Total	315	144	459	2377	2633	5010	5469

M = Male, F = Female, T = Total

TABLE-4: DISTRIBUTION OF POSITIVE CASES BY AGE AND SEX

Age group	Total screened	Positive Cases		Total No. of Positive cases	Percentage
		Males	Females		
<15	2557	112	126	238	9.31
15-25	6501	245	270	515	7.92
26-35	7972	1025	588	1613	20.23
36-45	6597	628	790	1618	21.49
46-55	3877	332	525	857	22.1
56+	3541	350	478	828	23.38
Total	31045	2692	2277	5469	17.61

DISCUSSION

Goiter in the Northern area of Pakistan is common. It was first reported in 1906 by McCarrison who was working in Chitral and Gilgit.[8] Subsequently studies have recorded that northern areas of Pakistan are the most severely affected areas in the world.[8,11] prevalence reported in our survey is quite high (17.16%). The iodine deficiency disorder (IDD) in Hazara is of stage 11 (moderate)as recommended by international council for control iodine deficiency disorders (ICCIDD) and it is time for Proper care of children of this area and in order to prevent them from severe IDD.[12] These findings warrant the need of an epidemiological survey at larger scale. Along with that, a policy should be made for the prevention of goiter in these areas. Simple fortification of iodine with table salts, and iodination of drinking water can easily decrease the incidence of goiter.'[3] At the time programme should also be initiated to treat cretinism and goitrogens.

Injections of iodinized oil is also effective in the prevention of the disease. Recently, iodinized oil

capsule have been introduced. Our study also showed that Goiter is more common in Kohistan and Mansehra as compared to Haripur and Abbottabad. The positive cases in Abbottabad and Haripur are limited to village Dhamtor and Khanaspur. This may be due to the environmental factors of iodine control of water. The prevalence of goiter in lower age groups is decreasing gradually. This may be attributed to the vast educational programs on goiter, iodine deficiency which has brought the awareness among the families, and further distribution of iodinized salts and other materials.

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