

## COMMON SIGNS AND SYMPTOMS IN HYPOTHYROIDISM IN CENTRAL PART OF IRAN

Ali Jabbari<sup>1</sup>, Sima Besharat<sup>2</sup>, Nasrin Razavianzadeh<sup>3</sup>, Mansour Moetabar<sup>4</sup>

### ABSTRACT

**Objective:** This study was designed to evaluate the common signs and symptoms of hypothyroidism in persons with clinical diagnosis of hypothyroidism that was confirmed with laboratory tests.

**Methodology** This descriptive cross-sectional study was done during 13 months in medical centers of Shahrood city, in central part of Iran. All cases with probable diagnosis of hypothyroidism based on the signs and symptoms, referred to health care services were included in the study. Radioimmunoassay tests and thyroid hormones evaluation were done. Demographic data and signs were recorded through interview. Data were entered in the computer and analyzed by SPSS software.

**Results:** Patients who completed questionnaires (n=50) were interviewed three times during this period. Female/male ratio was 6/1. The most common signs were cold intolerance (95%), weight gain and menorrhagia. The most common symptoms were edema (80%) and pallor (60%). The severe disease was seen in 4%. Mild type was the most common presentation of hypothyroidism (60%).

**Conclusions:** The most common signs and symptoms of hypothyroidism in the central part of Iran (Shahrood city), that is one of the iodine deficient areas in Iran; were different from other studies. Socio-demographic and nutritional status, illiteracy level and personal self-care are among the probable causes. Unfortunately, concomitance of some of the signs and symptoms are not diagnostic for hypothyroidism. It seems that strong clinical suspicious and laboratory confirmation are the only reliable methods for hypothyroidism diagnosis.

**KEYWORDS:** Hypothyroidism, Common, Signs, Symptoms.

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1. Ali Jabbari, MD,
2. Sima Besharat, MD,
- 1,2: Researcher Scientist,  
Golestan University of Medical Sciences,
3. Nasrin Razavianzadeh, MD, Internist,  
Assistant Professor, Shahrood Medical University
4. Prof. Mansour Moetabar, MD,  
Specialist in infectious Disease and Epidemiologist,  
Tehran University of Medical Sciences, Tehran - Iran.

Correspondence

Dr. Ali Jabbali,  
No 36, Jorjan Boulevard, Farhangian Township,  
Gorgan City, Postal code: 49148-15855  
Golestan Province, Iran.  
E-mail: amir\_a\_78@yahoo.com

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### INTRODUCTION

Hypothyroidism usually results from decreased production of thyroid hormones or resistance to them. It is a condition resulting from insufficient production or diminished action of thyroid hormones. It may begin in utero or later in life.

Hypothyroidism is characterized by a generalized reduction in metabolic function that most often manifests as a slowing of physical and mental activity. The clinical presentations may vary from mild and asymptomatic to severe and overt disease and may also depend

on the patient's age, gender and physical condition. In most spontaneous cases, a decrease in thyroid function occurs gradually, with sub-clinical hypothyroidism progressing over time to overt hypothyroidism.<sup>1-3</sup>

Although clinical symptoms may suggest hypothyroidism, they usually are not specific, which can only be confirmed by laboratory assessments of thyroid function. Hypothyroidism may be associated with either a decrease or an increase in thyroid size (goiter). Some patients will present with obvious symptoms of hypothyroidism and minimal changes in thyroid hormone levels, whereas others will have subtle symptoms despite markedly abnormal thyroid function.<sup>1-3</sup>

Because of the wide-ranging physiologic effects of thyroid hormones, hypothyroidism can have profound detrimental effects on numerous organ systems. In very young infants, hypothyroidism can result in irreversible mental retardation and slowed physical growth unless thyroid hormone replacement therapy is initiated within weeks after birth. This has led to the routine testing for congenital hypothyroidism in newborn infants. In most patients, primary hypothyroidism can be confirmed by appropriate laboratory tests and subsequently treated with thyroid hormone replacement therapy.<sup>1-3</sup> Unusual presentations of acute hypothyroidism often go unrecognized and delay the onset of effective therapy.<sup>2</sup> In the iodine efficient areas like the United States, hypothyroidism is seen in 1-8% of the general population; but in iodine deficient areas its prevalence is 10-20 folds more.<sup>2</sup>

Annual incidence of autoimmune hypothyroidism is 4 in 1000 in female and 1 in 1000 in male. Its prevalence rises after 60 years-old and approaches to 6-7%. Generally, one male suffers from hypothyroidism in contrast to 5-10 females.<sup>2</sup> It seems that in the iodine deficient areas the incidence and prevalence rate of hypothyroidism are higher than the normal range in developed countries. The signs and symptoms are different from the general presentation. In iodine deficient areas the disease has a typical presentation.

One study suggested that the presentation of hypothyroidism is altered in the elderly in comparison with young patients because there are fewer signs or symptoms and diminished frequency of some classical signs.<sup>4</sup> However; clinical features vary significantly among different populations owing to their climate, education status and awareness about the disease. The presentation of hypothyroidism is non-specific and high degree of suspicion is required for its early diagnosis.<sup>3</sup> This study was designed to evaluate the clinical presentations of hypothyroidism in a population of iodine deficient area in central part of Iran.

## PATIENTS AND METHODS

This descriptive cross-sectional study was completed in thirteen months in medical centers of Shahrood city, central part of Iran. All cases with probable diagnosis of hypothyroidism based on the signs and symptoms, referred to medical offices or clinics and/or had recorded in medical centers or laboratory or hospital were included in the study. Radioimmunoassay tests and thyroid hormones evaluation were done. Demographic data, signs and symptoms were recorded through interview. Data were entered into the computer and analyzed by SPSS software. Central and distributive indices were shown.

## RESULTS

Patients who completed questionnaires (n=50) were interviewed three times during this period. Female/male ratio was 6 to 1 (42 female, 8 male). Mean age was 23.2 years-old. The oldest patient was a 65-years-old and the youngest was a neonate.

Thirty seven patients (74%) were diagnosed before the study started and 13 (26%) were diagnosed during this investigation. One third of the old cases had some complaints despite the treatment. Among the old cases, 30 had normal results in the laboratory tests. Ninety percent (N=45) had acquired hypothyroidism and others (10%) were congenital cases.

The most common signs included cold intolerance (95%), weight gain and menorrhagia (Table-I).

As shown in Table-II, the most common symptoms were edema (80%) and pallor (60%). The severe type of the disease was seen in 4% of cases. The most common presentation of hypothyroidism was the mild type (60%). Presentation of disease was mild in thirty patients (60%); moderate in eighteen patients (36%) and seven in two cases (4%).

### DISCUSSION

As the results showed 37 cases (74%) were diagnosed before this survey, 26% were referred due to the clinical presentations and were thus diagnosed. In this study, eight percent of the patients were diagnosed at the late stage of the disease that was lower than other studies.<sup>5</sup> Male to female ratio was 6 to 1, while in other studies too, this higher ratio was reported. It has been suggested that sex hormones have an important role in the autoimmune thyroid disease.<sup>5,6</sup>

Table-I: Most common Symptoms of hypothyroidism in cases referred to health services in Shahrood

	N	%
Cold intolerance	45	95
Weight gain	42	84
Menorrhagia	39	92.85*
Muscle/joint pain or weakness	38	76
Constipation	38	76
Menstrual irregularity	35	83.3*
Loss of energy	35	70
Dry skin & hair	32	64
Palpitation	32	64
Inability to concentration	10	20
Depression	8	16
Vocal cord dysfunction	2	4
Drowsiness	1	2

\* Percentages are calculated between females.

In other studies the most sufferers were in the third and fourth decades of the life.<sup>5</sup> But in our study it was seen in the lower decades of the life (second decade). Maybe more environmental antigen exposure and nutritional deficiency are among the probable causes suggested for this discrepancy.

High incidence of the hypothyroidism in iodine deficient areas interferes with hormonal changes and makes the diagnosis more difficult, e.g. menstruation disturbances or tendency to the lower weight in this age-range presents like hypothyroidism. Goiter was seen in 16% of the cases in the present study. Some investigators have suggested the concomitant of hypothyroidism and goiter as Hashimoto disease.<sup>7</sup> Measurement of the thyroid antibodies was not accessible in this study. Hyporeflexia was observed in 30% of our cases. A new scale is reported based on the relation between reflexes relaxation time and FT4 and T3.<sup>8</sup>

Cold intolerance, weight gain, weakness and malaise were the most common complaints in this study. Irregularity in menstrual cycle and menorrhagia, dry skin, cold intolerance,

Table-II: Most common Signs of hypothyroidism in cases referred to health services in Shahrood city

	N	%
Pallor	40	80
Hyporeflexia	30	60
Loss of scalp hair	15	30
Goiter	10	20
Bradycardia	8	16
Hypothermia	6	10
Loss of axillary & public hair	3	6
Decreased sweating	2	4
Abdominal distension	2	4
Macroglossia	2	4
Myxedema	1	2
Dependent edema	1	2

edematous face and hoarseness are reported as the most common symptoms in other studies.<sup>5,9</sup> Cold intolerance, due to the reduced basal metabolism and cardiac output; has been reported a very common symptom of hypothyroidism.<sup>5</sup>

Clinical features of hypothyroidism vary significantly among different populations owing to their climate, education status and awareness about the disease.<sup>3</sup> The presentation of hypothyroidism is altered in the elderly in comparison with young patients; in that there are fewer signs or symptoms and diminished frequency of some classic signs.<sup>4</sup>

### CONCLUSIONS

In the present study, common signs and symptoms of hypothyroidism were different compared with other studies. It seems that the socio-demographic and nutritional behaviors are among the probable causes. A significant difference in this study was that the age of patients was in the lower range compared to the other studies; suggesting that some environmental factors and different ethnicities may have a role in these findings.

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