



ORIGINAL RESEARCH PAPER

Medicine

A STUDY OF PROFILE OF NEUROLOGICAL MANIFESTATIONS OF HYPOTHYROIDISM

KEY WORDS:

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ABSTRACT

Disorders of thyroid gland have been recognized since time immemorial. There are abundant evidence that thyroid hormones may alter neurological function directly. Aim of the study was to study clinical profile of patients of Hypothyroidism to know various neurological manifestations and its prevalence. In the present study the patients with features of hypothyroidism who attended OPD & IPD at Department Of Medicine, PATNA MEDICAL COLLEGE & HOSPITAL, PATNA for a period of one year from January 2018 to December 2018 were studied. The patients with Hypothyroidism who already had concomitant neurological disease like seizure, stroke etc. were excluded from the study. It was basically two stage programme. First stage was Establishment of diagnosis of hypothyroidism and second stage was Neurological status of these patients were studied. Among the neurological symptoms cognitive impairment was one of the most common symptom (78% of patient). Tingling and numbness was next (56.4%) followed by hand pain(CTS) which was seen in 52% of cases ,headache in 40% , slow and hoarse voice in 36% ,loss of consciousness in 22% , convulsion in 16% and deafness in 10% Of patients. Delayed relaxation of DTRs (Woltman's) sign was positive in 76% of cases. Neurological manifestations was found to be high but nothing new reasons for neurological manifestations cropped in over previous studies, so early diagnosis and prompt management of cases may prevent neurological deficits.

INTRODUCTION

Disorders of thyroid gland have been recognized since time immemorial. The reference of goiter was made by sushruta around 500BC. William Gull was first to describe myxedema in 1874, and myxedema term was coined by William ord in 1878. Even the earliest description myxedema documented the frequent and prominent identification of thyroxin in 1915 and naming in 1952 it became possible to identify neurological consequence of hypothyroidism. In India no less than 170 million are effected from hypothyroidism. There are abundant evidence that thyroid hormones may alter neurological function directly. Impaired cognition, depression, dementia, inattention, seizure and myxedema coma in hypothyroidism is due to diminished cerebral blood flow and glucose metabolisms while cerebella ataxia, sluggishness and hoarseness of voice and entrapment neuropathy (carpal tunnel syndrome) is due to mucopolysachcharide deposition. Psychotic features occur in 3-5 % of patients with severe hypothyroidism giving rise to myxedema madness. Myxedema coma is most severe expression of hypothyroidism, Hashimoto's encephalopathy is a rare, steroid responsive syndrome characterized by mental status changes, seizure, tremor, myoclonus. In one series, 14 % of patients of hypothyroidism had headache. Ataxia is present in 25-33 % of patients with hypothyroidism. Obstructive sleep apnea was documented in 45 % of hypothyroid patient. The most common peripheral nervous manifestation of hypothyroidism is carpal tunnel syndrome. Some hypothyroid adults have enlarged ,firm muscle that becomes increasingly stiff and painful with exercise forcing them to rest briefly a condition known as HOFFMAN SYNDROME.

AIMS & OBJECTIVES

Aim of the study was to study clinical profile of patients of Hypothyroidism to know various neurological manifestations and its prevalence.

MATERIALS AND METHODS

In the present study the patients with features of hypothyroidism who attended OPD & IPD at Department Of Medicine, PATNA MEDICAL COLLEGE & HOSPITAL, PATNA for a period of one year from January 2018 to December 2018 were studied. The patients with Hypothyroidism who already had concomitant neurological disease like seizure, stroke etc. were excluded from the study. It was basically two stage programme.

1. Establishment of diagnosis of hypothyroidism.
2. Neurological status of these patients were studied.

OBSERVATION:-

AGE & SEX DISTRIBUTION

Out of 100 patients studied, 18 (18%) were male and 82 (82 %) were female, male: female ratio being 1:4.55. the mean age for male patients was 40.1 years (standard deviation 13.36). For female mean age was 37.1 years (standard deviation 11.1). Females were relatively younger than males though this finding was insignificant stastically(p = > 0.20)

NEUROLOGICAL SYMPTOMATOLOGY

Cognitive impairment was present in 78 (78% of patients) followed by tingling and numbness (52%), pain in hands(CTS) (48%),headache (40%), slow and hoarse voice (36 %) , loss of consciousness (22%), convulsions (16%) and deafness (10%). The distribution of values is shown in table :-

NEUROLOGICAL SYMPTOMATOLOGY

SYMPTOMS	MALE (%)	FEMALE (%)	TOTAL	PERCENTAGE
Cognitive impairment	12 (66.6%)	66(80.4%)	78	78
pain in hands(CTS)	8(44.4%)	40(48.4%)	48	48
convulsions	4(22.2%)	12(14.6%)	16	16
loss of consciousness	2(11.1%)	20(24.6%)	22	22
Slow and hoarse voice	10(55.5%)	26(31.7%)	36	36
Tingling and numbness	10(55.5%)	42(51.2%)	52	52
Deafness	0(00.0%)	10(12.1%)	10	10
Headache	8(44.4%)	32(39.0%)	40	40

GENERAL SIGNS

Pallor was most frequently observed sign (72%) followed by pedal edema(62%), dull expressionless puffy face (22%), thyroid enlargement(18%), bradycardia(8%), decreased body temperature(6%), xanthelesma(49%) and clubbing(2%). The distribution is shown in the table below :-

GENERAL SIGNS

SIGNS	MALE (%)	FEMALE (%)	TOTAL	PERCENTAGE
Pallor	14(77.7%)	58(70.7%)	72	72
pedal edema	12(66.6%)	50(60.9%)	62	62
thyroid enlargement	4(22.2%)	14(17%)	18	18

dull expressionless puffy face	2(11.1%)	20(24.3%)	22	22
decreased body temperature	0(0.00%)	6(7%)	6	6
xanthelasma	2(11.1%)	2(2.4%)	4	4
bradycardia	2(11.1%)	6(7%)	8	8
clubbing	0(0.00%)	2(2.4%)	2	2

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**NEUROLOGICAL EXAMINATION
DEEP TENDON REFLEXES**

Delaying of the relaxation phase of deep tendon reflexes is characteristic of hypothyroidism, most easily observed at Achilles, patellar and biceps tendon.

The relaxation half time in normal person is approximately 240-320 ms. Any value that exceeds this range is called delayed relaxation of DTRs or, woltman's sign.

Woltman's sign	Male	Female	Total	Percentage
Absent	14	30	44	44
Present	8	48	56	56

DISCUSSION

100 patients of hypothyroidism were studied for their neurological status by clinical parameters. The incidence of the disease was much commoner in female than male(F:M 1:4.55). Female preponderance was obvious in all age groups.

AGE & SEX DISTRIBUTION OF HYPOTHYROID PATIENTS

Age groups (Years)	Male (n)	Female (n)	Total	Percentage
Upto 20	2	6	8	8
21-30	6	16	22	22
31-40	2	40	42	42
41-50	4	10	14	14
51-60	2	8	10	10
>60	2	2	4	4
Total mean S.D	1840.113.36	8237.111.1	100	100

Among the neurological symptoms cognitive impairment was most common symptoms (78% of patients) 66.6% male and 80.40 % females. Vinod kumar (1978) had observed similar findings of cognitive impairment in 74.5 % of his patients, tingling & numbness was next symptoms (56.4%) whereas in this study it was 52 %. In our study, hand pain (CTS) was seen in 48 % , headache (40%), slow & hoarse voice (36%), loss of consciousness (22%), convulsion (16%) and deafness in 10 % of patients. On examination of neurological system proper, depressed and delayed relaxation of DTR(woltman's sign)was positive in 76 % of cases, out of 76 woltman's sign positive cases 8 were males and 68 were females. This shows that positivity of woltman's sign's more in female than in males and negativity of woltman's sign is more in males.

SUMMARY & CONCLUSIONS :-

Through clinical screening and biochemical confirmation 100 hypothyroidism patients were selected in our study. The focus of attention was their neurological status. The most common neurological symptoms in these patients was cognitive impairment (78% of patients). Tingling & numbness was next most common symptoms seen in 52 % of patients, hand pain (CTS), headache, slow and hoarseness of voice, loss of consciousness, convulsions and deafness were next in order. On neurological examination, expressed and delayed relaxation of DTRs or woltman's sign , or hung up reflex is characteristic of hypothyroidism and was positive in 76% of cases. To conclude , on analysis of study, neurological manifestation was found to be high and nothing new reasons for neurological manifestations cropped up over previous studies. So further study may be beneficial. Early diagnosis and prompt management of cases may prevent neurological deficits.

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