

Pattern of Thyroid Dysfunction in HIV Patients

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Abstract

Introduction: Abnormalities of the endocrine glands functions are not uncommon in patients infected with HIV. Many studies have shown high prevalence of thyroid dysfunction in HIV patients. We have undertaken this study to know pattern of thyroid dysfunction in patients registered to our ART centre. **Materials and methods:** 100 HIV patients registered in ART centre of government medical college Jammu were enrolled for study. Besides baseline investigation FT3, FT4, TSH levels and CD4 counts were assessed in all patients. **Results:** 64% were women and 36% were men and mean age of our study group patients was 37.19±8.79. Out of 100 seropositive HIV patients, 69% were on antiretroviral therapy. Sick euthyroid syndrome was observed in 13% patients, subclinical hypothyroidism in 9% and 78% were euthyroid. Point prevalence of thyroid dysfunction in HIV infected patients was observed to be 22%. **Conclusion:** Thyroid dysfunction is very common in patients infected with HIV and should be assessed in all patients, as thyroid hormones play important role not only in metabolism but also influence immune system.

Keywords: Thyroid dysfunction; HIV; CD4 count; Antiretroviral Treatment.

Introduction

Human immunodeficiency virus (HIV) infection is characterized by decreased CD4 cell count

and immunodeficiency, leading to opportunistic infections (OIs) and tumors. Abnormalities of the endocrine function of the pituitary, thyroid, adrenals, gonads and pancreas are common in patients infected with HIV and are becoming the main conditions influencing the long-term quality of life in HIV infected patients [1,2]. Studies have reported higher incidence of thyroid dysfunction in patients infected with HIV as compared to general population [3]. The data on the prevalence of thyroid dysfunction in HIV infected patients from this part of the country is scant. Therefore, this study was undertaken to find out the prevalence of thyroid dysfunction in HIV infected patients registered with our ART (antiretroviral treatment) centre.

Material and methods

The present clinical cross sectional prevalence study was conducted in 100 HIV patients registered in ART centre of government medical college Jammu. Diagnosed seropositive HIV patient were selected for the study. A detailed history and thorough physical examination including thyroid examination were performed in all patients. Besides baseline investigation FT3, FT4, TSH levels and CD4 counts were assessed in all patients. Data was analysed using SPSS version 20.

Results

In this study 64% were women and 36% were men, with women to men ratio of 1.78:1. Majority of our study group patients (48%) were in age group of 30-39 years and mean age of our study group patients was 37.19±8.79. (Table 1)

Table 1: Thyroid status of study population based on gender.

Thyroid status	Men	Women	Total (%)
Euthyroid	29	49	78
Sick euthyroid	5	8	13
Subclinical hypothyroidism	2	7	9
Total	36	64	100

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Out of 100 seropositive HIV patients, 69% were on antiretroviral therapy. Sick euthyroid syndrome was observed in 13% patients, subclinical hypothyroidism in 9% and 78% were euthyroid. Point prevalence of thyroid dysfunction in HIV infected patients was observed to be 22%. More number of women had subclinical hypothyroidism and sick euthyroid syndrome as compared to men (Table 2). 6% of subclinical hypothyroidism, 7% sick euthyroid patients and 56% euthyroid patients were on ART.

Table 2: Thyroid status of study population.

Thyroid dysfunction	Number of patients	Percentage (%)
Euthyroid	78	78
Sick euthyroid	13	13
Subclinical hypothyroidism	9	9
Total	100	100

Discussion

HIV infection can be considered as a systemic illness and endocrine abnormalities are not uncommon in these subset of patients. Endocrine abnormalities occur because of many reasons in patients with HIV infection. Many authors investigated possible involvement of thyroid glands in the past. Studies have shown some variations of result on alterations of thyroid functions in these groups of patients.

In our study, 64% were women, 36% were men, with female to male ratio of 1.78:1. The mean age of the study group was 37.19±8.79 years with minimum age being 19 years and maximum 65 years. Sixty-nine per cent of the patients were on ART.

In a study by Joshi et al. 55% were men and 45% were women. Two third of the patients were on ART. In another study by Lambert M et al. on 116 patients, 69 patients were on ART and 47 were ART naive which is analogous with our study [15].

Abbiyesuku et al. reported that out of 128 patients, 76% were on ART [1].

CD 4 count of our study population was 253±192.70 per mm [3]. There was no difference in CD4 count of ART group and ART naive patients in our study population while in a study conducted by Lambert M et al. CD4 count was lower in ART group than those who were not on ART.

We observed that patients with thyroid dysfunction had severe disease than those without thyroid involvement, which was reflected by lower CD4 count in patients with thyroid dysfunction

though it was not statistically significant.

Thyroid dysfunction was seen in 22% of our study patients. Out of these patients, 13% were having sick euthyroid syndrome, 9% were having subclinical hypothyroidism and none of our study population were having subclinical or overt hyperthyroidism which is possibly related to low prevalence of hyperthyroidism in general population.

Lambert M. et al. Has observed that 33% of patients were having thyroid dysfunction. Joshi et al. has shown thyroid dysfunction in 16% of patients, of which 11.25% had subclinical hypothyroidism, 2.5% had sick euthyroid syndrome, 1.25% had overt hyperthyroidism, and 1.25% patients had subclinical hyperthyroidism [15]. Most of the studies in world literature have also shown variable prevalence of thyroid dysfunctions in HIV patients.

Bourdoux et al. Observed that 28% patients were having sick euthyroid profile, while one of the patient was having hyperthyroidism. In another study by Dev et al. subclinical hypothyroidism was seen in 24% and 10% had primary hypothyroidism [6,8].

Thyroid involvement in HIV infection is confirmed by several studies although different explanation of altered thyroid condition has been given. Thyroid abnormalities have clinical importance as thyroid hormones play fundamental role in metabolic regulation and influence immune system mostly humoral and cell mediated immunity.

In our study, we found that thyroid dysfunction was more common in those who were on ART than those who were treatment naive. Similar observations were made by many other authors from different parts of world [3-5]. World literature reveals that long duration of ART is associated with increased chances of endocrine gland involvement including thyroid dysfunction. Our study patients who were on ART for more than one year had more prevalence of thyroid dysfunction than those who were taking ART for less than one year. Bongiovanni et al. [5].

We did not find any case of overt hypothyroidism which may be due to small sample size of our study. Future studies with bigger sample size may provide better understanding of this problem in HIV patients.

Conclusion

Thyroid dysfunction in HIV infected patients

is not uncommon. More severe the disease more common will be the thyroid dysfunction.

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