

ORIGINAL RESEARCH

Evaluation of Medication Among Patients with Thyroid Dysfunction: An Institutional Based Study

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ABSTRACT

Background: Thyroid diseases are, arguably, among the commonest endocrine disorders worldwide. The present study was conducted for assessing medication adherence among patients with thyroid dysfunction. **Materials & Methods:** A total of 100 patients diagnosed with Thyroid dysfunction were enrolled. Complete demographic and clinical details of all the patients were obtained. The suggested format was followed while recording the baseline data, which included test results, co-morbidities, co-medications, and patient demographics. The Morisky-8-item medication adherence questionnaire and the Brief Medication Adherence Questionnaire were used to measure medication adherence. The patients received appropriate medication counseling following the collection of baseline data. Finally; the results obtained were assessed and interpreted using statistical software. **Results:** A total of 100 patients with thyroid dysfunction were analyzed. Mean age of the patients was 49.2 years. Higher adherence to medication was seen in 33 percent of the patients while medium and low adherence was seen in 38 percent and 29 percent of the patients. Reasons for low/adherence included forgetfulness, financial problem, feeling cure and side-effects found to be present in 65.52 percent, 6.89 percent, 17.24 percent and 10.34 percent of the patients respectively. **Conclusion:** Patients with thyroid dysfunction are associated with low adherence. Hence; adequate motivational and education programs should be carried out time to time to motivate patients to take timely medicines.

Key words: Medication, Thyroid disorder.

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INTRODUCTION

Thyroid diseases are, arguably, among the commonest endocrine disorders worldwide. India too, is no exception. According to a projection from various studies on thyroid disease, it has been estimated that about 42 million people in India suffer from thyroid diseases. Thyroid diseases are different from other diseases in terms of their ease of diagnosis, accessibility of medical treatment, and the relative visibility that even a small swelling of the thyroid offers to the treating physician. Early diagnosis and treatment remain the cornerstone of management.¹⁻³ Patients with abnormalities of thyroid gland function or structure come to medical attention for several reasons. They present with symptoms attributable to physiologic effects of increased or decreased plasma concentrations of thyroid hormone (hyperthyroidism or hypothyroidism, respectively). They may also

present with symptoms related to localized or generalized enlargement of the gland (diffuse goiter, multinodular goiter, or single thyroid nodule). These changes may result from functional abnormalities or neoplasia, benign or malignant.⁴⁻⁶

Subclinical hypothyroidism is defined as a high serum thyroid stimulating hormone (TSH) concentration and a normal serum free T4 concentration, and overt hypothyroidism as a high serum TSH concentration and a low serum free T4 concentration. Subclinical hyperthyroidism is defined as a low serum TSH concentration and a normal serum free T4 concentration, and overt hyperthyroidism as a low serum TSH concentration and a high serum free T4 concentration. These definitions of "subclinical" and "overt" dysfunction are made purely by biochemical criteria. Persons with "subclinical" hyperthyroidism or hypothyroidism may display clear symptoms or

signs of thyroid dysfunction while those with “overt” hyperthyroidism or hypothyroidism may show no other evidence of thyroid dysfunction.^{7- 9}The present study was conducted for assessing medication adherence among patients with thyroid dysfunction.

MATERIALS & METHODS

The present study was conducted for assessing medication adherence among patients with thyroid dysfunction. A total of 100 patients diagnosed with Thyroid dysfunction were enrolled. Complete demographic and clinical details of all the patients were obtained. Exclusion criteria for the present study included patients who were currently taking Lithium or Steroid medications and patients with presence of congenital abnormalities. The suggested format was followed while recording the baseline data, which included test results, co-morbidities, co-medications, and patient demographics. The Morisky-8-item medication adherence questionnaire and the Brief Medication Adherence Questionnaire (BMQ) were used to measure medication adherence. The patients received appropriate medication counseling following the collection of baseline data. Finally; the results obtained were assessed and interpreted using statistical software. SPSS software was used for evaluation of results. All the results were subjected to statistical analysis using univariate analysis.

RESULTS

A total of 100 patients with thyroid dysfunction were analyzed. Mean age of the patients was 49.2 years. Higher adherence to medication was seen in 33 percent of the patients while medium and low adherence was seen in 38 percent and 29 percent of the patients. Reasons for low/adherence included forgetfulness, financial problem, feeling cure and side-effects found to be present in 65.52 percent, 6.89 percent, 17.24 percent and 10.34 percent of the patients respectively.

Table 1: Medication adherence

Morisky analysis	Number	Percentage
High adherence	33	33
Medium adherence	38	38
Low adherence	29	29
Total	100	100

Table 2: Reasons for low/non-adherence

Reasons	Number	Percentage
Forgetfulness	19	65.52
Financial problem	2	6.89
Feeling cure	5	17.24
Side-effects	3	10.34
Total	29	100

DISCUSSION

Thyroid dysfunction is one of the most common endocrine disorders seen in clinical practice. The prevalence of thyroid dysfunction varies by age, sex,

race/ethnicity, and geographically through variations in dietary iodine intake. Abnormal thyroid function has important ramifications on health outcomes pertinent to older adults, including cardiovascular arrhythmia, metabolism, bone health, and mental health. Current estimates of the prevalence of thyroid dysfunction are largely derived from data in predominantly white middle-aged populations. Some studies have shown that the TSH distribution shifts to higher values with increasing age suggesting that a universal treatment target may not be appropriate for all ages. Currently, in clinical practice, guidelines recommend the same cut-points for thyroid hormones irrespective of age, race, or sex.^{8- 10}

A total of 100 patients with thyroid dysfunction were analyzed. Mean age of the patients was 49.2 years. Higher adherence to medication was seen in 33 percent of the patients while medium and low adherence was seen in 38 percent and 29 percent of the patients. Reasons for low/adherence included forgetfulness, financial problem, feeling cure and side-effects found to be present in 65.52 percent, 6.89 percent, 17.24 percent and 10.34 percent of the patients respectively. Saranya D et al assessed the magnitude of adherence and the factors associated with non-adherence to thyroid medication in 273 patients were interviewed using Morisky-8-item and Brief Medication questionnaires for a period of six months. Most of the patients were females and belongs to the age group of 21-50 years. The overall adherence level was found to be 30% according to Morisky-8- item questionnaire and 30.4% according to BMQ. The study also identified that forgetfulness, felt better and stopped, cost of medication and lack of access to drug store/hospital were the major reasons behind nonadherence to medication.¹¹

Supriya Malhotra et al, in another study, evaluated prescription pattern, QoL and patient’s adherence to treatment for thyroid disorders in Indian population. Case record form containing patient’s demographic, clinical profile, diagnosis, prescription drugs (with dose, duration and frequency) was noted. The QoL of each patient was assessed by a 30 item questionnaire specific for thyroid disorder. Drug adherence was tested by (4 item) Morisky Green Levine Test questionnaire. Out of 126 patients, nearly three-fourth of patients were diagnosed to be suffering from hypothyroidism (Group1; n = 94) and one-fourth (Group 2; n = 32) from hyperthyroidism. Patient demographics with respect to mean age and gender distribution (40.03 ± 14.07 years; M:F = 0.08 and 39.34 ± 11.71 years; M:F = 0.14 respectively for Group 1 and 2) was comparable. Levothyroxine for hypothyroidism followed by carbimazole for hyperthyroidism were the most prescribed drugs in our study population. Nearly 70% of thyroid patients were highly adherent to medication in both the groups (Group 1 - 69.14%; Group 2 68.75%), possibly due to oral single daily dose regime. QoL was 65% in our study population (Group 1: 64% and Group 2:

67%). The mean QoL scores and mean adherence scores were not statistically different between both the groups. We found a significant positive correlation between occupation with spiritual score, gender with psychological score and adherence with spiritual score. They also observed a significant negative correlation between age and physical score and gender and spiritual score. They found 65% level of adherence and 70% QoL in our study population. Hyperthyroid patients had higher QoL but lower level of medication adherence as compared to hypothyroid.¹²

Kumar R et al, in another study, identified the extent of drug adherence (DA) to levothyroxine (LT4) in hypothyroidism patients and study the clinical factors contributing to DA in these patients. The cross-sectional study assessed patient adherence to LT4 therapy by Modified Morisky Adherence Scale (MMAS). Factors predicting the pattern of medication adherence were also assessed in all patients. On MMAS, 79 (27.3%) participants indicated low adherence, 117 (40.48%) indicated medium adherence, and 93 (32.2%) participants indicated high adherence. Regular endocrinologist visits and knowledge about medication were highest in high adherent patients ($p < 0.05$). Need for assistance in taking medication, avoidance of medication with symptomatic relief and busy work schedule was highest in low adherent patients ($p < 0.05$). Patients with hypothyroidism showed moderate adherence to their treatment.¹³

CONCLUSION

Patients with thyroid dysfunction are associated with low adherence. Hence; adequate motivational and education programs should be carried out from time to time to motivate patients to take timely medicines.

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