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Understanding the Physicians' Perception in the management of Hyperthyroid disorders: A physician based survey

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ABSTRACT

The objective of this study was to understand the physicians' perception in the management of hyperthyroid disorders. In this single visit survey, 177 physicians across India were asked to fill the questionnaire pertaining to hyperthyroid disorders, medications and its compliance. A total of 44% of physicians prescribe anti-thyroid drugs for minimum of 18 months, whereas 37 % prescribe anti-thyroid drugs for 12 months. Almost 48% of physicians' initiate carbimazole 10 mg BD/day or 20 mg OD in their patients. Non-adherence due to unavailability of anti-thyroid medications is a major concern seen in their patients. Almost 44 % of physicians confirmed that >20% patients discontinued anti-thyroid therapy due to non-availability. Majority of the physicians (89%) prefer compliance pack i.e. bottle of 100 tablets to their patients. Antithyroid drugs are usually administered for about 12-18 months. Non-compliance due to unavailability of medicine is the major problem in the management of hyperthyroid disorders. Compliance pack/bottle of 100 tablets could be a useful option to improve patient compliance.

Keywords: Antithyroid drugs, compliance, hyperthyroid disorders.

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INTRODUCTION

Thyrotoxicosis is a medical condition caused by multiple etiologies and can present with different manifestations. Hyperthyroidism is a form of thyrotoxicosis because of inappropriately high production and release of thyroid hormones.[1]The prevalence of subclinical and overt hyperthyroidism reported in an Indian study was 1.6% and 1.3% respectively.[2] Graves' disease is the most common cause of spontaneous hyperthyroidism in younger patients and also a common cause of thyrotoxicosis. The treatment patterns for hyperthyroidism with available options i.e. antithyroid medicines, radioiodine ablation of thyroid tissue, and surgery have regional differences. For instance, in Grave's disease use of antithyroid medicines is more common in Europe and Japan as compared to North America where radioiodine is preferred.[3] In India, antithyroid drugs are commonly used for the treatment of hyperthyroidism. The use of antithyroid drugs (e.g. carbimazole and propylthiouracil) also differs from region to region.[3]Antithyroid medicines are given for about a year to 18 months. However, discontinuation of therapy results in high rate of relapse.[3,4]Similarly, non-compliance in patients with hyperthyroidism may result in thyrotoxic crisis.[5] Higher adherence rate to antithyroid medicines has shown to reduce the risk of stroke in hyperthyroidism patients.[6] Unavailability of medicines may be a reason for discontinuation of medicine.

Objective:

This study was conducted to understand the physicians' perception in the management of hyperthyroid disorders.

MATERIALS AND METHOD

In this single visit survey, 177 physicians across India were asked to fill the questionnaire pertaining to hyperthyroid disorders, medications and its compliance. Enrolled physicians were subjected to a questionnaire encompassing the total duration of antithyroid therapy used in patients with thyrotoxicosis, number of patients who develop relapse after therapy discontinuation, adherence to therapy, percentage of patients discontinuing therapy due to non-availability of medicine and practice of using compliance pack of 100 tablets versus strip of 10 tablets.

Statistical analysis:

Qualitative data is presented as counts and percentages whereas quantitative data is presented as counts, mean and standard deviation.

RESULTS AND DISCUSSION

A total of 177 physicians were enrolled in the survey of which 43.50% physicians prescribe anti-thyorid drugs for at least 18 months (table 1).

Table 1: Duration of anti-thyroid drug therapy usually advised in thyrotoxicosis

Duration of therapy	Respondents N(%)
Six months	29(16.38%)
12 months	65(36.72%)
≥18 months	77(43.50%)
Others	5(2.81%)

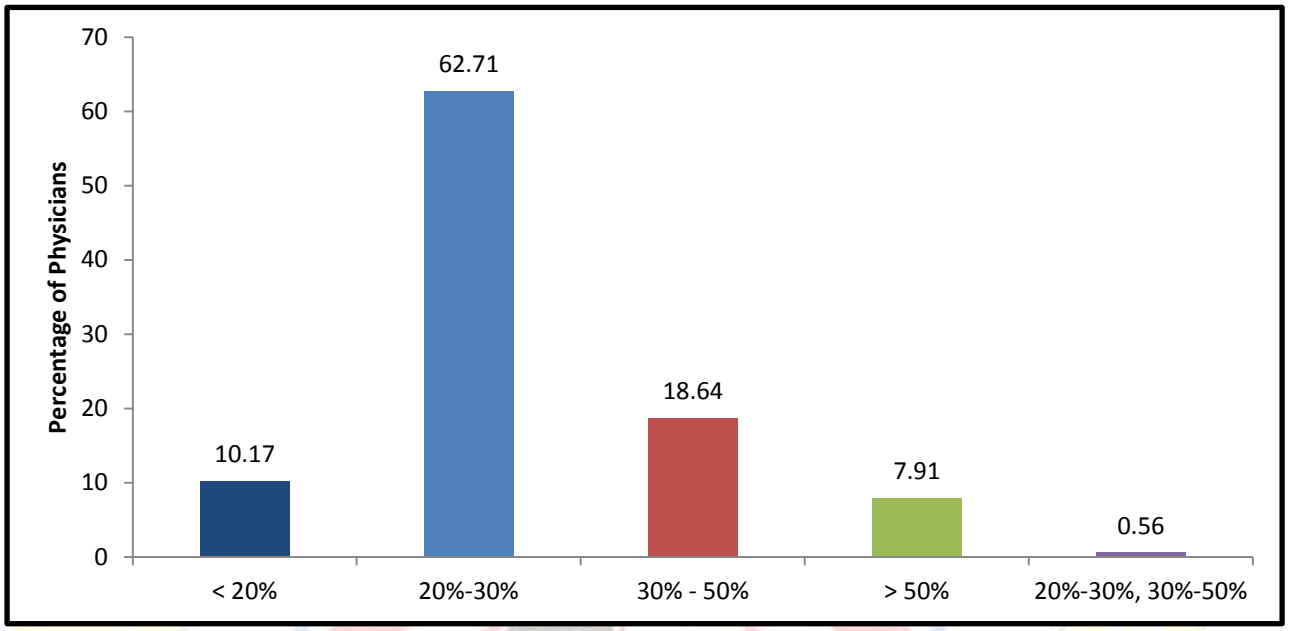

Figure 1: Relapse of thyrotoxicosis post discontinuation of therapy

A total of 62.71% physicians' have reported that 20%-30% patients with thyrotoxicosis develop relapse after therapy discontinuation (figure 1).

A total of 55.37% physicians' have responded that the next line of therapy during relapse of thyrotoxicosis is to repeat anti-thyroid drugs whereas according to 32.77% of physicians both antithyroid drugs and radioactive iodine are the next line of therapy. According to 10.73% of physicians next line of therapy during relapse is radioactive iodine only (table 2).

Table 2: Management of relapse of thyrotoxicosis

Therapy	Respondents N(%)
Repeat antithyroid drugs	98(55.37%)
Radioactive iodine	19(10.73%)
Repeat antithyroid drugs, radioactive iodine	58(32.77%)
Repeat antithyroid drugs, radioactive iodine, surgery	1(0.56%)

In case of relapse, close to one fourth (25.42%) of physicians prescribe antithyroid therapy (if preferred) for at least 18 months whereas 37.29% of physicians prescribe it for one year. Number of doctors and duration therapy reported by them is shown in table 3.

Table 3: In case of relapse, if you prefer antithyroid drug therapy, what is the average duration of therapy?

Duration of therapy	Respondents N(%)
6 months	58(32.77%)

12 months	66(37.29%)
≥18 months	45(25.42%)
Others	7 (3.95%)

Almost two third (66.66%) of physicians have reported that 20 mg is the preferred dose to initiate carbimazole therapy. Other reported doses and number of physicians responding the same are shown in table 4.

Table 4: What is the preferred dose to initiate carbimazole therapy?

Dose of carbimazole	Respondents N(%)
20 mg daily	118(66.66%)
10 mg once daily	10(5.65%)
5 mg thrice daily	22(12.43%)
Others	25 (14.11%)

According to 90.40% of physicians, non-adherence due to non-availability of anti thyroid medication is the major problem among hyperthyroid patients (figure 2).

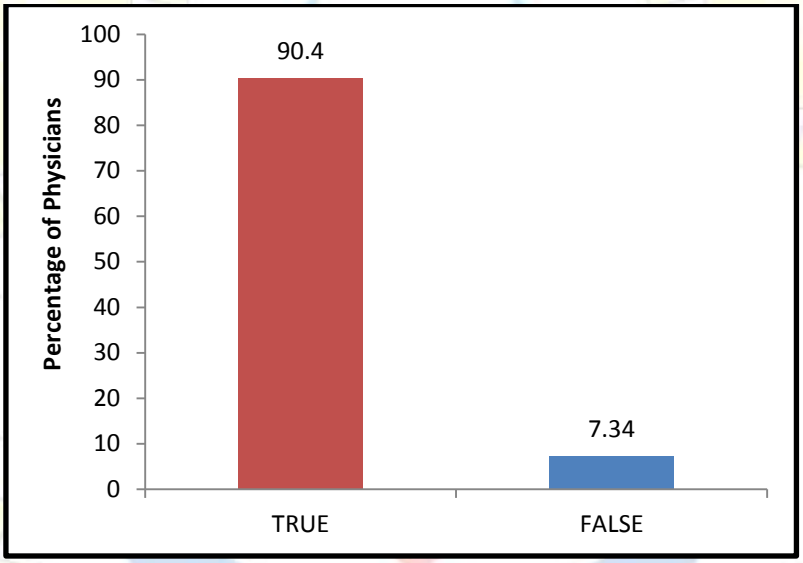

Figure 2: Non-adherence of medication (anti thyroid) due to non-availability

According to 44.63% of physicians more that 20% of patients discontinue antithyroid therapy due to non-availability of medication whereas another 11.30% physicians vouch that at least 50% patients discontinue therapy because of non availability of antithyroid medication (tablet 5).

Table 5: Drop out rate of anti-thyroid therapy due to non-availability of medication

Drop out rate	Respondents N(%)
Less than 20%	76(42.94%)
More than 20%	79(44.63%)
At least 50%	20(11.30%)

A total of 88.70% physicians responded that they recommend a compliance pack/bottle of 100 tablets to their patients (tablet 6).

Table 6: Options of antithyroid medicine package recommended to patients

Option	Respondents N(%)
A compliance pack of 100 tablets	157(88.70%)

A strip of 10 tablets	17(9.60%)
Both	2(1.13%)

DISCUSSION:

Untreated or partially treated hyperthryodism disorders can result in complications such as atrial fibrillation, congestive heart failure, osteoporosis, reproductive system related abnormalities both in men and women, thyrotoxicperiodic paralysis,[7] stroke[6] and increased risk of mortality.[7]Antithyroid drugs represent an important modality of treatment for patients with hyperthyroidism. For treatment of hyperthyroidism, antithyroid therapy is usually given for 12-18 months. Longer duration of treatment with low doses of antithyroid medications have been tried in many other studies.[8] In our study, 80.22% physicians have reported using antithyroid drugs for 12 months or more. Most commonly, physicians mentioned using it for at least 18 months. However, about 17% reported using it for six months. Short duration of therapy is an important risk factor for relapse,[9] hence it can be continued up to 18 months.[10]

Apart from duration of therapy, patients should adhere to given therapy in order to achieve good response. Risk of relapse may be related to several patient related and disease related factors[9] or gaps in therapy. Patients might discontinue medications on their own without consulting the treating physician. Discontinuation of antithyroid drugs is associated with high relapse rate.[3,7,8]Patient education and awareness about importance of adherence to therapy might help to reduce discontinuation rates and hence the relapse. More than 60% of physicians in the study reported relapse in up to 30% of the patients.Patients with relapse may be managed by antithyroid medicine, radioactive iodine or surgery.[11-13]A total of 55.37% of the physicians from our study repeat anti-thyroid drugs as next line of therapy for treating relapse. Carbimazole, available across the country is one of the mainstays of antithyroid drug therapy in India. The usual starting dose of carbimazole in adults is 20-60 mg/day. The dose is selected based on the severity of hyperthyroidism.[14]The dose of carbimazole is titrated based on the levels of thyroid hormones until patient is euthyroid.[10] Initial high dose is required for reducing thyroid hormones levels quickly and achieve early remission. Usually, the initial therapy with high dose is tapered after about 4 to 8 weeks and continued for about 12-18 months.[14]In our study, almost two third physician reported using carbimazole20 mg/day once daily or 10 mg twice daily.

Considering the long duration of therapy, availability of medicine also becomes equally important.

Availability and accessibility are among the important factors which determine the compliance to medication in patients with chronic disease.[15]There is significant dispareity in access to healthcare in Indian people. Access to healthcare, long travel for seeking health care

and availability of medicines are commonly reported challenges in India.[16-18] Long travel adds to the exiting burden of poverty and may further contribute to discontinuation rates of medicine. Anti-thyorid medicines are no exception. The problem of lack of access to antithyroid medicines in India is evident from the observations of our study. A total of 90.40% physicians in our study agreed that non-adherence due to non-availability of medicines is a major problem among the Indian patients. In order to reduce discontinuation rate and in turn the relapse, adequate measures are necessary. providing larger packs of medicines to ensure compliance may ensure unintruppted availability of medicine and improve adherence rates. Long duration of therapy is known risk factor for poor compliance. One of the contributing factors in these patients could be difficulty in getting prescriptions filled.[15] Most of the physicians who participated in this survey had an opinion that larger packs or compliance pack of antithyroid medicine can help patients to improve adherence rate and hence, they recommend compliance pack of 100 tablets to their patients. These observations were expected because a systematic review and meta-analysis of 52 reports suggested that packaging interventions can increase the adherence to medicine.[19]Compliance pack is a type of packaging intervention prepared with an objective of avoiding repeated visits of patients to the chemist for refilling of prescription. One time purchase of compliance pack avoids missing the medicine intake due to unavailability and saves time and cost of the travel for refilling. In addition to prescription and availability the most important component is ensuring that patient buys and consumes the medicine. Most of the survey participants mentioned that patients will buy a three-month pack.

Overall, our study provides useful insights on the management of hyperthyroidism in Indian patients with focus on challenges in the long term treatment. The important aspects emerged out from this survey include importance of long term treatment with proper dosage of antithyroid medicine, ensuring compliance to therapy and making uninterrupted availability of medicine through larger compliance packs.

CONCLUSION:

Antithyroid drugs are usually administered for about 12-18 months. Carbimazole in high dose (20 mg daily) is commonly used by Indian physicians. Non-compliance due to unavailability of medicine is the major problem in the management of hyperthyroid disorders. Compliance pack/bottle of 100 tablets could be a useful option to improve patient compliance

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