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Efficacy of Ayurvedic Treatment in Managing Hypothyroidism and Reducing Thyroxine Dependency

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ABSTRACT

Background: Hypothyroidism poses a clinical challenge, with levothyroxine as the standard treatment. However, a notable subset of patients reports ongoing symptoms despite achieving biochemical euthyroidism. This questions the adequacy of levothyroxine monotherapy for all individuals and prompts consideration of alternative therapeutic strategies.
Aim: The current study aimed to establish efficacy of Panchakarma and lifestyle management in management of hypothyroidism and reducing oral thyroxine dependency.
Methods: A prospective, single centre, observational study was conducted in Maharashtra India. Patients diagnosed with hypothyroidism were included in this study. Follow-up was conducted at 90 days. Day 1 and day 90 data were compared.
Results: A total of 15 patients were studied. T3 levels (day 1: 39.70 ± 43.37 nmol/dl and day 90: 42.90 ± 46.46 nmol/dl, p=0.83), T4 levels (day 1: 6.89 ± 2.36 nmol/dl and day 90: 13.70 ± 18.32 nmol/dl, p=0.17) and TSH levels (day 1: 8.63 ± 6.93 mIU/ml and day 90: 6.63 ± 2.97 mIU/ml, p=0.29) improved at follow-up.
Conclusion: Ayurvedic treatment is effective in reducing the thyroxine burden and restoring the thyroid functioning in hypothyroid patients.

Keywords: Ayurveda, thyroid; triiodothyronine; thyroxine; thyroid stimulating hormone

INTRODUCTION

Hypothyroidism is a common yet challenging condition of thyroid deficiency. Its prevalence in India is approximately 11% and has higher prevalence among females. Symptoms include fatigue, lethargy, cold intolerance, weight gain, constipation, change in voice, and dry skin – these may vary according to age and gender. However, some patients also present as asymptomatic [1]. A diagnosis is made based on abnormal ranges of biochemical parameters such as triiodothyronine (T3), thyroxine (T4), and thyroid stimulating hormone (TSH) due to the vast spectrum of clinical manifestations. The standard treatment is replacement therapy with levothyroxine, yet a significant proportion of patients report persistent symptoms despite normalized biochemical levels. This raises questions about the adequacy of levothyroxine for all patients and prompts exploration into alternative therapies [2]. If untreated, severe health complications including death can occur [3].

Ayurveda practices focus on herbal supplements and therapies to treat the root imbalance of hypothyroidism compared to modern medicine. There is scarce data evidencing Ayurvedic treatment of hypothyroidism – this represents a gap in knowledge. Thus, the current study was designed to establish efficacy of *Panchakarma* and lifestyle management in management of hypothyroidism and reducing oral thyroxine dependency.

MATERIALS & METHODS

Study design

This was a prospective, single-center study. A total of 15 patients diagnosed with hyperthyroid irrespective of anti-thyroid peroxidase (anti TPO) levels and body mass index were included in this study. Patients with TSH levels <5.o mIU/ml without oral thyroxin were excluded from the study. All patients provided written informed consent. The study was conducted in accordance with the Declaration of Helsinki [4]. Good Clinical Practice [5] and applicable regulatory requirements.

PROCEDURE

Centripetal oleation with sesame oil enriched with rose essence calms the hyperactivated sympathetic nervous system. Additionally, it also relieves dry and coarse skin of hypothyroid patients. Thermal vasodilation with steam of Dashmula decoction softens the skin, dilates blood vessels, improves peripheral circulation, reduces congestion, excretes metabolic waste and toxins through sweat, and reduces oedema. Per rectal drug administration was PRDA of G-Kanth liquid comprised of *Kanchanar*, *Mandkparni*, and *Guggul*. This concoction helps improve thyroid function, basal metabolic rate, protect thyroid cells from damage, promote excretion of glycosaminoglycans, reduces oedema in interstitial heart tissues, muscles, and skin, palliates stress and improve production of T3-T4 levels to thereby reduce TSH levels. Further details of the treatment are provided in **Table 1**.

Table 1: Treatment table

Steps involved	Product	Mechanism of action	Duration (mins/sitting)	Probable adverse effects
Centripetal oleation	Sesame oil enriched with rose essence	Calms the hyperactivated sympathetic nervous system. Improves circulation, relieves dryness & coarseness of skin in hypothyroidism.	20 mins	Allergy may cause who are allergic to sesame.
Thermal vasodilation	Dashmula decoction	Softens the skin, dilates the blood vessels, improves peripheral circulation, reduces congestion, excretes out metabolic waste & toxins through sweat, reduces oedema.	10–15 mins	Fainting, fatigue, excessive thirst, burning sensation, weakness of the voice & limbs.
Per rectal herb decoction administration	G-Kanth liquid-comprised of *Kanchnar*, *Mandukparni* & *Guggul*	Improves thyroid function, protects thyroid cells from damage, improves basal metabolic rate helps to excrete out accumulation of glycosaminoglycans, reducing oedema in interstitial tissues of heart, muscles, skin etc. Palliates stress, improves production of T3-T4 & thereby reduced TSH	5–10 mins	Abdominal discomfort, bloating, or cramping during or after the procedure.

Study endpoints and data collection

The primary endpoint was thyroxine reduction and T3, T4, and TSH normalization. The secondary efficacy endpoint was weight management and symptomatic relief. Data for patient demographics, anthropometrics, and laboratory findings were collected and analyzed from the patients; medical records. On day 1, a detailed patient history was taken, anthropometric measurements were recorded and the T3, T4, and TSH levels were measured. These laboratory tests were repeated on day 90. Data of day 1 was compared with data of day 90. Only data of only those patients who had completed 90-day follow-up was analyzed.

STATISTICAL ANALYSIS

Categorical data are expressed as number (percentage) and continuous data are expressed as mean ± standard deviation. Paired t test was used to determine the difference between baseline and follow-up at 90 days. P value ≤0.05 was considered as statistically significant. R Version 3.4.1 software was used to analyse the data.

RESULT

Patient demographics and laboratory findings

The mean age of the study patients was 49.8 ± 15.91 years. 12 (80%) patients were female. Mean weight (day1: 67.43 ± 13.15 kg and day 90: 63.25 ± 11.48 kg) and body mass index (day 1: 27.15 ± 4.67 and day 90: 25.31 ± 3.82) decreased at follow-up. T3 levels (day 1: 39.70 ± 43.37 nmol/dl and day 90: 42.90 ± 46.46 nmol/dl, p=83), T4 levels (day 1: 6.89 ± 2.36 nmol/dl and day 90: 13.70 ± 18.32 nmol/dl, p=0.17) and TSH levels (day 1: 8.63 ± 6.93 mIU/ml and day 90: 6.63 ± 2.97 mIU/ml, p=0.29) improved at follow-up. The demographic and laboratory findings are described in **Table 2**.

Table 2: Patient demographics and laboratory findings

Variable	Day 1 (n=15)	Day 90 (n=15)	p value
Age, years	49.8 ± 15.91		
Males, n (%)	3 (20%)		
Weight, kg	67.43 ± 13.15	63.25 ± 11.48	0.00
Body mass index	27.15 ± 4.67	25.31 ± 3.82	0.00
T3	39.70 ± 43.37	42.90 ± 46.46	0.83
T4	6.89 ± 2.36	13.70 ± 18.32	0.17
TSH	8.63 ± 6.93	6.63 ± 2.97	0.29

All data are expressed as number (percentage) or mean ± standard deviation.

p value ≤0.05 was considered statistically significant.

T3 – triiodothyronine; T4 – thyroxine; TSH – thyroid stimulating hormone

DISCUSSION

An earlier study conducted by Samad et al. [6] investigated the serum T3, T4, and TSH levels in normal Bangladeshi individuals. Study findings revealed average T3, T4, and TSH levels of 1.96 ± 0.54 nmol/L (range1.2–3.4 nmol/L), 113.21 ± 27.62 nmol/L (range: 55–169 nmol/L), and 2.06 ± 1.08 mIU/L (range: 0.5 –5.0 mIU/L), respectively. These findings are in line with other studies. Shah et al. [7] reported T3, T4, and TSH levels of 1.2–3.1 nmol/L, 58–155 nmol/L, and 0.6–4.8 mIU/L, respectively. Joshi et al. [8] documented T3, T4, and TSH levels of 0.9–2.8 nmol/L, 58–140 nmol/L, and 0.5–4.7 mIU/L. respectively. However, it is pertinent to consider that normal values are dependent on the technique used as well as the geographical location. Thus, each laboratory should establish its own normal values.

There are several medicinal plants that are effective in managing hypothyroidism. Kanchar (Bauhinia tormentosa) is the preferred drug for thyroid enlargement and hypothyroidism. It often mixed with Guggulu (Commiphora mukul) [2]. The efficacy of Guggulu (Commiphora mukul) in regulating hypothyroidism has been evaluated in female mice. Hypothyroidism

was induced with 10.00 mg/kg/d 6-n-propyl-2-thiouracil for 30 days as evidenced by a decrease in thyroid hormone concentration and in hepatic 5′D-I activity. Simultaneous administration of 200 mg/kg/d Guggulu for 30 days reversed this effect, indicating its potential to stimulate thyroid function [9]. These findings are in accordance with an earlier similar preclinical study conducted on mice. Anecdotal cases have narrated successful treatment of hypothyroidism with Ayurveda [10, 11]. An open label randomized comparative clinical trial has found Vyoshadi Guggulu and Shadushana Churna to be statistically and equally effective in managing subclinical hypothyroidism [12].

Study Limitations

The small sample size, single-centre design and short follow-up are a few limitations of the current study. Larger studies of a larger sample size and long-term follow-up will help provide further insights.

CONCLUSION

Ayurvedic treatment is effective in reducing the thyroxine burden and restoring the thyroid functioning in hypothyroid patients.

Declaration by Authors

Ethical Approval: Not applicable.

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Conflict of Interest: The authors declare no conflict of interest.

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