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Effectiveness of homoeopathic constitutional medicines in the management of hypothyroidism - a pre and post study

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Abstract
Amoung thyroid disorder Hypothyroidism seems to be the most prevalent disorder in clinical practice. Homoeopathic medicines provide a good alternative where rather than supplementing the thyroid hormone deficiency the focus is on curing the state of hypo functioning of thyroid gland. This study aimed to evaluate the effectiveness of Homoeopathic constitutional medicines in managing uncomplicated cases of hypothyroidism.

In our institution (Govt. Homoeopathic Medical College, Trivandrum) a prospective, non- randomized pre- and post-intervention clinical study was conducted from July 2024 for ten months. Thirty-one subjects aged 18–60 years with serum Thyroid-Stimulating Hormone (TSH) levels greater than 5 mIU/L were included through consecutive sampling. Cases with thyroid malignancy, severe systemic illness, or pregnancy were excluded. The intervention involved individualized Homoeopathic constitutional medicines prescribed according to the patient's symptom totality. The outcome was measured as the change in serum TSH levels before and after treatment. Data were analyzed using a paired t-test.

The calculated t-value was 4.58; which was greater than the table value of 2.75 at df(30) and p value <.01 level, indicating a statistically significant reduction in serum TSH levels following treatment. In this study the most frequently prescribed medicines were *Calcarea iodata*, *Calcarea carbonica*, *Natrum muriaticum*, *Sepia*, *Lycopodium*, and *Thyroidinum*.

Homoeopathic constitutional medicines demonstrated significant effectiveness in managing uncomplicated hypothyroidism, as evident by the reduction in serum TSH levels. These findings support the role of individualized Homoeopathic medicines in thyroid function regulation. Further studies with larger sample sizes and inclusion of complicated thyroid disorders are recommended to validate and extend these findings.

Keywords: Hypothyroidism, homoeopathy, constitutional medicine, TSH

Introduction

Hypothyroidism is one of the most prevalent endocrine disorders worldwide and occurs when the thyroid gland fails to produce adequate amounts of thyroxine (T_4) and triiodothyronine (T_3), hormones essential for regulating metabolism, cardiovascular function, thermogenesis, neurological activity, and normal growth and development. Their deficiency produces systemic disturbances ranging from slowed metabolic activity to cognitive and psychiatric changes [1]. In infants, untreated congenital hypothyroidism (cretinism) causes irreversible intellectual disability, growth retardation, and developmental delay, while in adults long-standing disease may progress to myxedema, characterized by mucopolysaccharide deposition, altered facial features, organ dysfunction, and the potential for life-threatening myxedema coma [2].

Etiologically, hypothyroidism may arise at the hypothalamic, pituitary, or thyroid level, though primary hypothyroidism most commonly due to autoimmune thyroiditis, particularly Hashimoto's thyroiditis predominates globally [3]. Diagnostic evaluation relies heavily on serum Thyroid- Stimulating Hormone (TSH), the most sensitive marker of thyroid dysfunction. Although levothyroxine remains the standard therapy [5] some patients report persistent symptoms, medication intolerance, or prefer holistic approaches, leading many to seek individualized therapies such as Homoeopathy. Based on the Law of Similars, Homoeopathy employs constitutional remedies focus to a patient's symptom totality; however, scientific evidence regarding their effect on objective biochemical markers like TSH remains limited.

Among the few available studies, Chauhan *et al*. (2014) conducted an exploratory randomized controlled trial in children with subclinical hypothyroidism and reported significant reductions in TSH and anti-TPO levels with individualized homeopathic treatment compared to placebo [7] while several open-label pre–post studies conducted between 2018 and 2024 have similarly shown symptomatic improvement and decreases in TSH, along with better clinical scores, following constitutional homeopathic treatment, although the absence of control groups limits causal interpretation [8].

In this context, the present study aims to determine whether individualized Homoeopathic constitutional medicines are effective in managing uncomplicated hypothyroidism. The primary objective is to evaluate their effectiveness using serum TSH as the main outcome measure, while secondary objectives include assessing changes in associated thyroid parameters such as thyroid gland size and Anti-TPO levels where applicable, and documenting coexisting systemic conditions that may influence clinical presentation [6].

Materials and Methods

This study was conducted as a single-group experimental clinical investigation using a pre-test post- test design to evaluate the effectiveness of individualized Homoeopathic constitutional medicines in patients with hypothyroidism. The study was carried out in the Thyroid Special Outpatient Department of Government Homoeopathic Medical College and Hospital, Thiruvananthapuram.

Consecutive sampling was used to select eligible participants, and a total of 34 cases were enrolled initially to get a final sample size of 31 after accounting for dropouts [12]. Sample size fixation is enlisted below as,

Sample size fixation

n = [z1 α⁄2+z1
β]2 / *e*2
α = 5% Level of significance β = 80% power
e = Efficiency of the study 2.

From the literature review the mean TSH level is reported as 3.76 and standard deviation is 5.673, if we administer the Homoeopathic Medicine the efficacy of the study is 50%, this for a 5% level of significance and 80% power the sample size

n = (1.96+084)2
(0.50)2
=31

So 31 samples needed for the study.

The study duration was 10 months, including a three-month data collection period and two months used for data analysis and preparation of final report. This is an experimental study involving a detailed constitutional case-taking, physical examination, and baseline laboratory testing, followed by individualized remedy selection according to Hahnemannian principles. Serum TSH levels used as the primary outcome measure were assessed before and after treatment [11]. Data were entered and calculated with the paired t-test applied to compare pre- and post-treatment TSH values.

As this is a pre and post study with sample size of 31, paired t-test would be used for the analysis of data [13].

Paired T-test formula

$$t = \frac{\sum d}{\sqrt{((n\Sigma d^2 - (\Sigma d)^2)(n-1))}}$$

Where d: difference per paired value n: number of samples

Results

A total of 31 participants who met the inclusion criteria completed the study and were included in the final analysis. Baseline assessment showed all subjects had elevated serum TSH values (>5 mIU/L), confirming the presence of hypothyroidism. Following individualized Homoeopathic constitutional treatment over the study period, each subject underwent a repeat estimation of serum TSH using the same laboratory protocol to ensure consistency. The result of paired t test is given below as,

Σd = 127.82, Σd2 = 1275.45
Mean (d) = Σd/ n
= 127.82/ 31
= 4.12
SD of difference = 4.99

As it is a before and after clinical study, using paired t-test
Paired t=IdI √n/SD of (d)
= 4.12 × √31/4.99
= 4.12 ×5.56/ 4.99
= 22.90/4.99
= 4.58

Obtained value of paired t is 4.58

Here degree of freedom for paired t is, = number of pairs - 1
=31-1
=30

The table value for t at df(30) at .05 level is 2.042, and at .01 level is 2.75.

Comparison of pre- and post-treatment TSH values using the paired t-test showed a statistically significant reduction. The calculated t-value was 4.58; which was greater than the table value of 2.75 at df(30) and p value <.01 level, indicating a statistically significant reduction in serum TSH levels after giving homoeopathic constitution medicine. This led to the rejection of the null hypothesis and acceptance of the alternative hypothesis, confirming that Homoeopathic constitutional medicines produced a measurable change in TSH levels [14].

Clinically, the majority of patients showed a reduction in TSH levels, coming back to the normal range. Although this study did not evaluate a control group, the consistent reduction across subjects supports a positive therapeutic effect. No severe adverse events or complications requiring referral were reported during the study period.

Overall, the results indicate that individualized Homoeopathic constitutional treatment was effective in reducing elevated TSH levels and improving thyroid function in patients with uncomplicated hypothyroidism within the study duration.

Discussion

The study includes a prospective data collection from the Thyroid Special OP with standardized case documentation, ensuring methodological consistency throughout the study period. A pre- specified sample size calculation and the use of an appropriate paired statistical analysis (paired t- test) strengthened the study with before–after comparison. The application of inclusion and exclusion criteria strictly followed. patients with malignant pathology, severe systemic illness, pregnancy, or obstructive goitre excluded and it helped minimize potential confounding factors and enhanced the reliability of the findings.

The remedies used in our study Calcarea iodatum, Calcarea

carbonica, Natrum muriaticum, Sepia, Lycopodium, and Thyroidinum were similar to those commonly reported in other case reports and clinical studies on thyroid disorders. Several contemporary reports and case series have highlighted Calcarea-group remedies and Thyroidinum among the most frequently used potencies in hypothyroid presentations, with authors reporting corresponding symptomatic improvement and reductions in TSH values in selected patients [9].

The present single-arm pre–post study demonstrated a statistically significant reduction in serum TSH after individualized homoeopathic constitutional treatment (paired t = 4.58, df = 30, $p<0.01$). The mean paired difference (d = 4.12) and the magnitude of change observed in a majority of participants indicate a measurable change in uncomplicated hypothyroid patients included in this study (Table:1).

The usefulness of these medicines in Thyroid related problems are well documented in Homoeopathic Materia Medica, and Homoeopathic Repertories. This research work, further enhances this existing knowledge. Further studies are required to access the same in more complicated condition of hypothyroidism. During the course of our study, we excluded autoimmune thyroid disease, and suspected thyroid malignancies, we wish to extend our research in this thyroid disorder also, in the future [15].

Table 1: Pre-post TSH levels

Statistical analysis		
Data obtained TSH	**Before**	**After**
P1	9.23	3.33
P2	11.62	6.71
P3	30.17	11.12
P4	5.8	4.8
P5	7.59	2.75
P6	7.64	7.19
P7	9.53	9.17
P8	5.54	2.70
P9	7.35	5.45
P10	13.97	6.7
P11	7.35	4.3
P12	6.8	5.08
P13	10.7	4.62
P14	13.06	1.4
P15	5.61	4.06
P16	8.01	5.08
P17	5.89	4.22
P18	12.11	5.4
P19	16.9	9.11
P20	5.47	2.47
P21	6.9	1.8
P22	10.10	1.41
P23	9.87	3.75
P24	7.6	12.46
P25	6.36	16.72
P26	6.85	7.1
P27	8.34	3.92
P28	7.46	6.84
P29	12.97	0.79
P30	10.79	7.64
P31	5.96	1.62

Conclusion

The present study demonstrated that individualized Homoeopathic constitutional treatment was associated with a statistically significant reduction in elevated serum TSH levels among patients with uncomplicated hypothyroidism. The majority of participants showed marked improvement, with many returning to the normal TSH range. Although the absence of a control group is limited inference, the consistent pre–post reduction observed across patients suggested a positive therapeutic effect. The findings supported the potential role of individualized Homoeopathic treatment in improving thyroid function, while highlighting the need for larger randomized controlled trials, including patients with autoimmune and more complex thyroid disorders, to validate and extend these results.

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