

Clinical Evaluation of Synthesis Repertory in the Management of Hypothyroidism with Individualised Homoeopathic Medicines: A Prospective Observational Study

Dr. Susira Suresh¹, Dr. Kondoju Kavya², Dr. Vishal V. Deshpande³

¹Assistant Professor, Department of Case Taking and Repertory, JIMS Homeopathic Medical College and Hospital, KNR University, Telangana, 509325

²Post Graduate Scholar, Department of Case taking and Repertory, JIMS Homeopathic Medical College and Hospital, KNR University, Telangana, 509325

³Head of Department & Professor, Department of Case Taking and Repertory, JIMS Homeopathic Medical College and Hospital, KNR University, Telangana, 509325

ABSTRACT

Background: Hypothyroidism is a common endocrine disorder which is conventionally managed with lifelong Levothyroxine therapy. However, symptom relief is often incomplete. Homoeopathy, emphasizing individualized treatment through repertorial analysis, may offer complementary benefits.

Aim: To assess the effectiveness of Individualized Homoeopathic Medicines selected using Synthesis Repertory in Hypothyroidism.

Materials and Methods: A prospective observational study was conducted on 30 Hypothyroid adults (18–65 years) with hypothyroidism (ICD-11: 5A00.Z), TSH 4.5–10 μ IU/L, both sexes, on allopathic medicine. Inclusion requires uncontrolled thyroid values within this range and documented informed consent at JIMS Homoeopathic Medical College and Hospital. Remedies were selected through repertorial analysis using Synthesis Repertory. Patients were followed up for six months, with outcomes measured using Zulewski Clinical Score and Thyroid Function Tests (T3, T4, TSH). Statistical analysis was performed using the Friedmann's ANOVA test.

Results: Significant improvement was observed in clinical symptoms and Thyroid function parameters. Zulewski scores decreased in most patients and laboratory values showed positive changes. Statistical analysis confirmed improvement ($p < 0.0001$).

Conclusion: Individualized Homoeopathic treatment based on repertorial analysis with the help of Synthesis Repertory demonstrated beneficial effects in Hypothyroidism, improving both clinical and biochemical outcomes. It may serve as a good complementary therapeutic option.

Keywords: Hypothyroidism, Synthesis Repertory, Individualized Homoeopathic Medicine

INTRODUCTION

Hypothyroidism is a condition caused by insufficient production or action of thyroid hormones, resulting in a slowdown of metabolic process [1]. The hypothalamus senses low thyroid hormones (T3/T4) and

releases Thyroid Releasing Hormone (TRH), which stimulates pituitary Thyroid Stimulating Hormone (TSH). TSH acts on the thyroid gland to increase hormone production until blood levels normalize. Elevated T3/T4 then inhibit TRH and TSH secretion, completing the negative feedback loop. The prevalence of Hypothyroidism shows considerable regional variation influenced by demographics, iodine intake, and healthcare access. Globally, overt hypothyroidism affects 0.2–5.3% of the population, with women experiencing higher incidence rates of up to 5 per 1,000 annually. In Asia, prevalence is rising, with China reporting an increase in subclinical hypothyroidism from 3.22% to 16.7%, while India demonstrates an overall prevalence of around 10% [2]. Within India, a multicity epidemiological study revealed the highest prevalence in Kolkata, followed by Hyderabad, Bangalore, Delhi, and Ahmedabad, whereas coastal cities such as Mumbai, Goa, and Chennai reported lower rates [3]. Specifically in Telangana, data from the Ministry of Health and Family Welfare (2022) indicated that 5,763 women per 100,000 were affected by thyroid disorders, highlighting a significant regional burden [4].

Allopathic Treatment

Levothyroxine is the standard therapy, with an average dose of 1.6 µg/kg/day (typically 100–150 µg). Dose adjustments are guided by serum TSH levels, aiming for values in the lower half of the reference range. Symptom resolution usually occurs within 3–6 months. Though overtreatment can occasionally cause side effects such as anxiety, insomnia, diarrhoea, goitre, and rarely, myocardial infarction [5].

Alternate Treatment Approaches

Alternate treatment approaches for Hypothyroidism across traditional systems often carry notable risks. In Ayurveda, remedies may lead to gastric problems or overstimulation of thyroid activity [6]. Unani medicine, which prescribes herbal mixtures and topical oils, poses dangers of overdosing and potential drug interactions if not prescribed properly [7]. Siddha treatment, relying on mineral compounds and certain herbs, carries risks of heavy metal toxicity and digestive disturbances if prescribed in the absence of proper supervision [8]. Thus, while these systems propose alternative pathways, their side effects highlight the need for cautious evaluation and monitoring.

Overall, both modern medicine and traditional systems aim to restore thyroid balance, though they differ in methodology, monitoring, and safety considerations.

Homoeopathy

Homoeopathy emphasizes individualized treatment based on physical, mental, and emotional characteristics. Remedies target symptoms such as fatigue, dry skin, constipation, and menstrual irregularities [9, 10]. They are generally considered safe and can be integrated with allopathic therapy under supervision. Patients often report improvements in energy, mood and overall well-being.

Synthesis Repertory

The Synthesis Repertory is a comprehensive homoeopathic reference, containing over 2,000 remedies and 1,50,000 rubrics. It integrates classical works with modern updates, including endocrine disorders. Digital platform Radar Opus enhance case analysis through advanced search and cross-referencing. Its detailed Mind chapter supports constitutional prescriptions [11, 12].

Research Gap

Despite promising case reports, there is a lack of large-scale, prospective randomized controlled trials (RCTs) evaluating Individualized Homoeopathic Treatment for Hypothyroidism using the Synthesis Repertory. Robust evidence-based research is needed to validate the role of Homoeopathy in Hypothyroidism management [13, 14, 15, 16, 17].

Aim

To assess the effectiveness of Individualized Homoeopathic Treatment using Synthesis Repertory in Hypothyroidism within a duration of 6 months.

Primary Objective

To evaluate changes in Zulewski Clinical Score after administration of Individualized Homoeopathic medicine using Synthesis Repertory over 6 months.

Secondary Objective

To assess changes in serum T3, T4, and TSH at baseline, 3rd month, and 6th month after administration of Individualized Homoeopathic medicine selected using Synthesis Repertory.

Materials and Methods

Study Design: The study was designed as a prospective single arm interventional study without a control group.

Study Setting: Study was conducted at OPD, IPD, Village Outreach programmes of JIMS Homoeopathic Medical college & Hospital, Telangana

Time frame: A total of 30 cases is considered, in which each case was followed up for once in 30 days for a minimum period of 6 months duration.

Sample Size: Based on the feasibility of study, 40 cases were selected by purposive sampling method as per the inclusion criteria. Including 5% drop out rate.

Inclusion criteria:

- Patients with hypothyroidism [ICD 11-5A00.Z] of age group 18-65 years with TSH levels above 4.5 μ IU /L - 10 μ IU /L
- Patients using modern medicine with uncontrolled thyroid values ranging between 4.5 μ IU /L - 10 μ IU /L
- Both sexes.
- Patient who gave their consent.

Exclusion criteria:

- Pregnant women, Postpartum and Lactating women.
- Drug-induced hypothyroidism.
- All critically ill patients
- Post thyroidectomy hypothyroid cases.

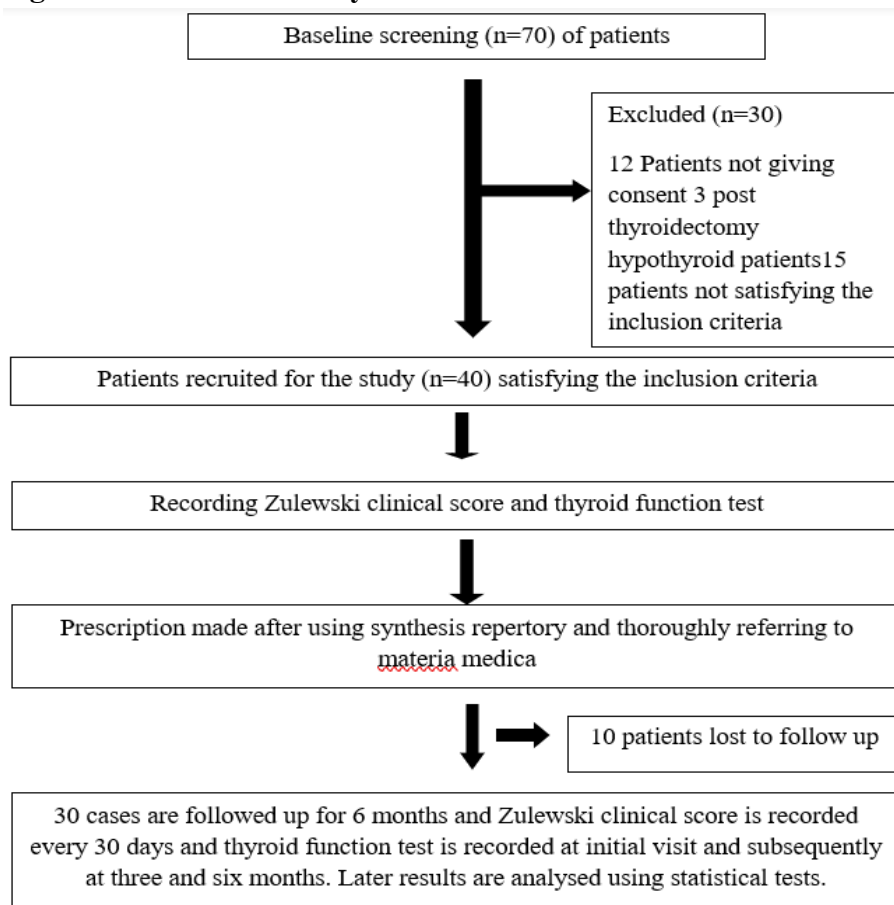
Data Collection: Primary data from the patients were collected through Interview method through personal interviews.

Outcome Measure: Zulewski Clinical Score and Thyroid Function Test was used. Zulewski clinical score is recorded every month for 6 months and thyroid function test is conducted at baseline, 3rd month and 6th month. All the information is kept in strict confidence.

Zulewski Clinical Score

The Zulewski Clinical Score is a simple and cost-effective tool for identifying hypothyroidism based on 12 common features such as fatigue, cold intolerance, weight gain, and dry skin. Scores of 0–2 indicate normal thyroid function, while >5 suggest hypothyroidism. It correlates well with thyroid hormone levels and other indicators like ankle reflex and cholesterol, making it a reliable complement to laboratory testing. Beyond diagnosis, it is also useful for monitoring treatment response, offering a practical method for both general practitioners and specialists, especially in resource-limited settings [18, 19].

Flowchart showing the outline of the study



Ethical Considerations

Ethical clearance for the study was obtained from the Institutional Ethical Committee of JIMS Homoeopathic Medical College & Hospital (JIMSHMC/2024/IEC/41). Participation was voluntary, with patients free to withdraw at any stage without affecting their care. Informed consent was taken after explaining objectives, risks, benefits, and study duration. To protect privacy, anonymity was ensured through coded data, and confidentiality was maintained except where legally required. Measures were adopted to minimize harm, avoiding sensitive questions and ensuring no procedures caused physical, social, or emotional distress.

Follow-Up

Patients were followed monthly for a period of six months. During each follow-up visit, clinical symptoms were reassessed and appropriate modifications in treatment were made whenever necessary.

Data Analysis:

Statistical analysis is done using GraphPad Prism 10.1, non-Parametric test, Friedmann’s ANOVA is used to determine the validity of the data & draw conclusions out of the results. A p-value less than 0.05 was considered statistically significant.

RESULTS

Baseline Characteristics:

The study population had a mean age of 35.77 ± 11.88 years, indicating moderate dispersion in age distribution. The mean Zulewski Clinical Score was 6.7 ± 0.95 , suggesting that the majority of participants were within the clinically hypothyroid range at baseline. Baseline thyroid function parameters demonstrated reduced thyroid activity. The mean serum T3 level was 1.24 ± 0.38 , and the mean T4 level was 5.96 ± 2.28 , both reflecting lower thyroid hormone concentrations. The mean TSH level was elevated at 7.62 ± 1.71 , consistent with primary hypothyroidism. Overall, both clinical and biochemical parameters at baseline confirm that the study population was appropriately representative of hypothyroid patients.

Table no. 1 showing Baseline Characteristics of 30 study participants in Mean \pm SD

Variable	Mean \pm SD
Age (years)	35.77 ± 11.88
Zulewski Clinical Score	6.70 ± 0.95
T3 (ng/mL)	1.24 ± 0.38
T4 (μ g/dL)	5.96 ± 2.28
TSH (μ IU/mL)	7.62 ± 1.71

Gender Distribution: The study population consisted predominantly of females, with 26 participants (86.7%) being female and 4 participants (13.3%) being male. This indicates a higher representation of women in the study sample.

Table no. 2 showing Gender distribution of study participants

Sex	n	%
F	26	86.7
M	4	13.3

Occupation Distribution

Participants in the study were engaged in various occupations. The majority were housewives (50.0%), followed by students (20.0%) and individuals working in the IT sector (16.7%). Other occupational categories included business (6.7%), teaching (3.3%), and priesthood (3.3%). This distribution shows that

the study group was diverse in terms of occupational background, though predominantly represented by homemakers.

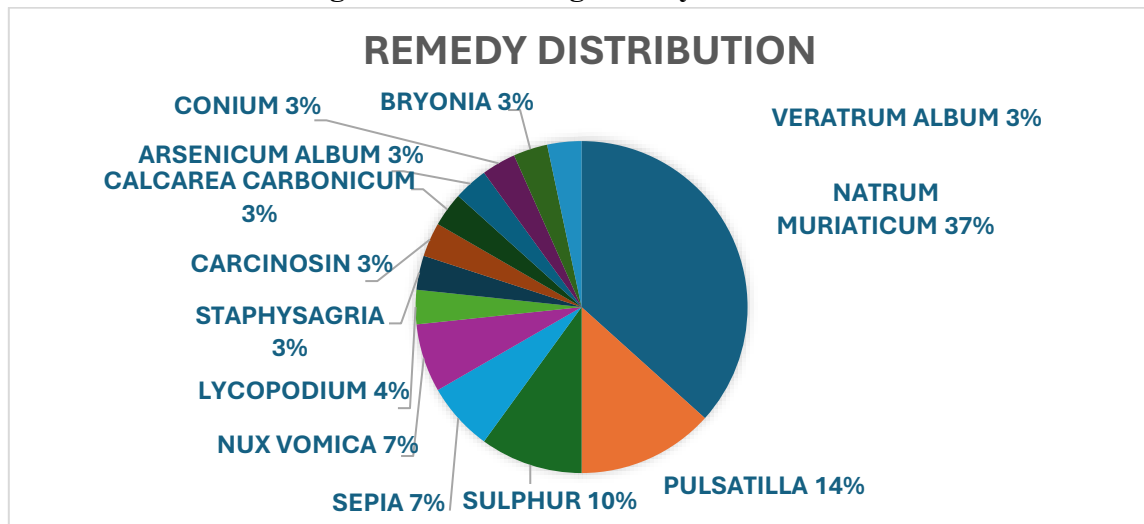
Table no. 3 showing occupation distribution of study participants

Occupation	n	%
Housewife	15	50.0
Student	6	20.0
IT	5	16.7
Business	2	6.7
Teacher	1	3.3
Priest	1	3.3

REMEDY DISTRRIBUTION

The pie chart on Remedy Distribution highlights the predominance of Natrum Muriaticum (37%), making it the most frequently prescribed remedy in hypothyroidism cases. Other remedies such as Pulsatilla (14%), Sulphur (10%), and Sepia (7%) also show notable usage, while several remedies including Nux Vomica, Lycopodium, and others contribute smaller proportions (3–7%). This distribution reflects the Individualized nature of Homoeopathic prescribing, where remedies are selected based on patient-specific symptom profiles rather than a single standardized treatment. Overall, the chart emphasizes the central role of Natrum Muriaticum while illustrating the diversity of remedies employed in clinical practice.

Figure no. 1 showing remedy distribution



ZULEWSKI SCORE RESULTS

In the present study, the Zulewski score demonstrated a consistent and progressive decline across the observation period, reflecting a sustained improvement in symptom severity. At baseline, participants exhibited relatively higher scores, indicative of more pronounced clinical manifestations. The downward trajectory continued steadily, with subsequent months showing incremental improvements. The decline became more pronounced by the third and fourth months, highlighting a substantial reduction in symptom burden. By the later stages, particularly the fifth and sixth months, scores had decreased markedly, signifying a notable alleviation of symptoms and a clear therapeutic benefit. Overall, the findings

underscore a progressive and sustained improvement in clinical status, supporting the effectiveness of the intervention in reducing symptom severity over time.

Table no. 4 showing changes In Zulewski Clinical Score monthly in Mean ± SD

Time Point	Mean ± SD
Baseline	6.7 ± 0.95
1st Month	6.23 ± 0.73
2nd Month	5.4 ± 0.77
3rd Month	4.57 ± 1.25
4th Month	3.83 ± 1.29
5th Month	2.73 ± 1.23
6th Month	1.77 ± 0.94

The data demonstrates a statistically and clinically significant improvement in Zulewski scores over 6 months. The largest decline is observed after the 3rd month, with progressive reductions continuing through the 6th month.

Figure no. 2 showing graphical representation of Zulewski clinical score

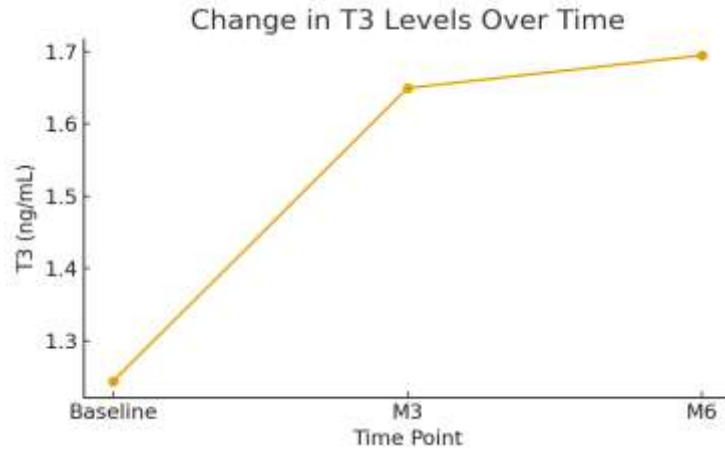


THYROID FUNCTION TEST RESULTS

T3 Levels

The Friedmann’s ANOVA test revealed a highly significant change in T3 levels across the study period, confirming the effectiveness of the intervention. The test statistic was $\chi^2 = 22.83$ with a p-value < 0.001 , indicating that the observed changes were unlikely to be due to chance. T3 concentrations showed a steady rise from baseline to the third month and further to the sixth month, representing an overall increase of approximately one-third over the six-month duration. Importantly, the variability in T3 levels decreased over time, suggesting that patients responded more uniformly as the intervention progressed. Taken together, these findings demonstrate a statistically significant and clinically meaningful improvement in thyroid function, with sustained elevation of T3 levels and reduced inter-individual variability, underscoring the therapeutic benefit of the intervention.

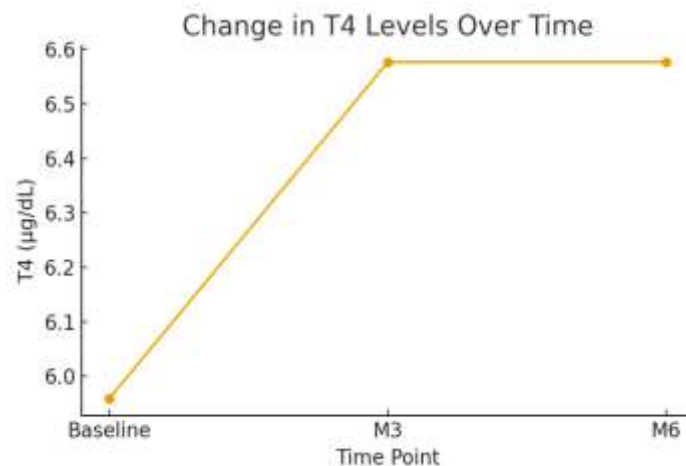
Figure no. 3 showing T3 levels across study intervals



T4 Levels

The Friedmann’s ANOVA test demonstrated a highly significant change in T4 levels across the study period, confirming the impact of the intervention. The test statistic was $\chi^2 = 21.78$ with a p-value < 0.001 , indicating that the observed differences were statistically robust. T4 concentrations rose from baseline to the third month, after which they remained stable through the sixth month, suggesting that the therapeutic effect was achieved early and sustained over time. The slight reduction in standard deviation further indicates greater consistency in patient responses following treatment. Collectively, these findings highlight a statistically significant and clinically meaningful improvement in T4 levels, with gains evident by the third month and maintained at the sixth month, underscoring the intervention’s efficacy in stabilizing thyroid hormone status.

Figure no. 4 showing T4 levels across study intervals

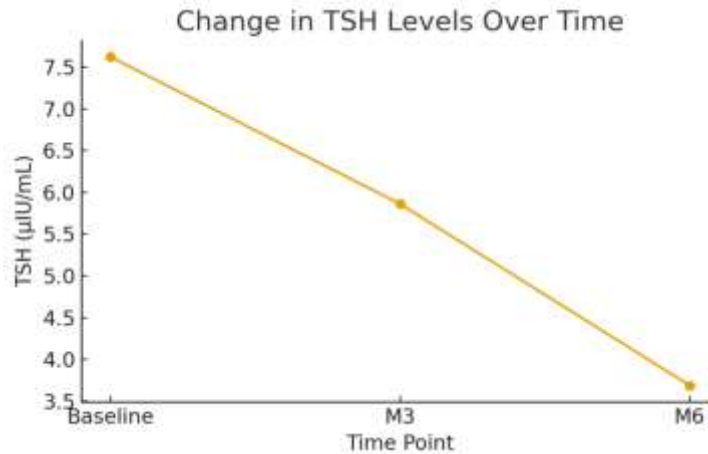


TSH values

The Friedmann’s ANOVA test confirmed a highly significant reduction in TSH levels across the study period, underscoring the therapeutic impact of the intervention. The test statistic was $\chi^2 = 50.54$ with a p-value < 0.001 , establishing the robustness of the observed changes. Mean TSH values declined progressively from baseline to the third month and further to the sixth month, reflecting a consistent improvement in thyroid regulation. Importantly, variability in TSH levels was reduced by the sixth month,

indicating a more uniform response among participants. Overall, these findings demonstrate both statistical and clinical significance, with sustained reductions in TSH levels over six months, highlighting improved thyroid homeostasis and the efficacy of the intervention.

Figure no. 5 showing TSH levels across study intervals



DISCUSSION

The present study aimed to evaluate the role of Synthesis Repertory in the management of hypothyroidism using Individualized treatment. The findings of this study indicate that Homoeopathic medicines selected through Synthesis repertory may contribute to improvement in both clinical symptoms and thyroid function parameters.

The age distribution of the study population revealed that the majority of patients were between 31 and 45 years of age. This observation is consistent with epidemiological data suggesting that hypothyroidism is more frequently diagnosed in middle-aged individuals. This aligns with existing epidemiological evidence indicating that hypothyroidism is more frequently diagnosed in middle-aged individuals, particularly due to age-related decline in thyroid function and increased prevalence of autoimmune thyroiditis such as Hashimoto's thyroiditis [1,5].

A marked female predominance (86.7%) was observed in the present study, which is consistent with global epidemiological trends reporting a higher prevalence of hypothyroidism among women [3]. This gender disparity has been attributed to multiple factors, including hormonal influences (oestrogen effects on thyroid-binding globulin), pregnancy-related immune modulation, and a higher predisposition to autoimmune disorders in females [20].

The most commonly observed symptoms among patients in this study were fatigue, weight gain, cold intolerance, constipation, and hair loss. These symptoms are classical manifestations of hypothyroidism resulting from reduced metabolic activity and decreased thermogenesis. The presence of these symptoms significantly affects the quality of life of patients and often leads them to seek medical attention.[21]

Homoeopathic treatment in this study was based on individualized remedy selection through repertorial analysis using Synthesis repertory. This approach emphasizes the importance of symptom totality and constitutional characteristics of the patient. The repertory serves as a valuable tool in organizing patient symptoms and identifying the most suitable remedy.

Among the remedies prescribed in this study, Natrum muriaticum, Sepia, Calcarea carbonica, and Lycopodium were the most frequently indicated medicines. These remedies are well known in Homoeopathic Materia Medica for their relevance in endocrine and metabolic disorders [9,22]

Sepia was commonly indicated in female patients presenting with hormonal disturbances, emotional indifference, and chronic fatigue. Calcarea carbonica was prescribed in patients exhibiting obesity, sluggish metabolism, and intolerance to cold. Natrum muriaticum was useful in individuals with emotional suppression and weakness, while Lycopodium was indicated in patients with digestive disturbances and metabolic imbalance [13,14].

The reduction in Zulewski clinical score observed in the study indicates significant improvement in hypothyroid symptoms.

In addition to clinical improvement, several patients demonstrated improvement in thyroid function tests. Although Homoeopathic medicines do not directly replace deficient thyroid hormones, they may stimulate the body's regulatory mechanisms and enhance physiological balance [13,16].

The underlying mechanism of action of homoeopathic medicines remains a subject of scientific debate. While Homoeopathy does not replace deficient hormones directly, it is hypothesized that individualized remedies may influence regulatory pathways, including neuroendocrine and immune modulation [23]. Such mechanisms, though not fully elucidated, may contribute to restoring physiological balance in chronic conditions. Nevertheless, these hypotheses require further validation through experimental and clinical research.

Despite the encouraging findings, several limitations must be acknowledged. The study was conducted with a relatively small sample size (30), which limits generalizability. The absence of a control group introduces the possibility of placebo effects, regression to the mean, and natural disease variability. Additionally, the use of purposive sampling may have introduced selection bias. The follow-up duration of six months, although adequate for short-term assessment, may not capture long-term outcomes or sustainability of therapeutic effects.

Future research should focus on well-designed randomized controlled trials with larger sample sizes and longer follow-up durations to establish causal relationships. Incorporation of blinding, standardized outcome measures, and comparative arms (e.g., homoeopathy versus conventional therapy or adjunctive therapy) would further strengthen the evidence base. Additionally, mechanistic studies exploring the biological effects of homoeopathic medicines on endocrine pathways are warranted.

Conclusion

The present study highlights that Homoeopathy, when guided by Synthesis Repertory, can significantly improve clinical symptoms in Hypothyroid patients. Notable reductions in the Zulewski clinical score and improvements in Thyroid Function Tests suggest a positive influence on endocrine balance. By adopting a holistic and Individualized approach, Homoeopathy addresses both physical and psychological aspects of patients, offering benefits beyond conventional therapy. These findings support the role of repertorial analysis in remedy selection and emphasize the need for further large-scale studies to validate the effectiveness of Homoeopathy in managing hypothyroidism.

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