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Effects of Lucas Aspera leaves juice Nasal drops in the management of Hypothyroidism: A Case Study

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ABSTRACT

Hypothyroidism is a highly prevalent chronic endocrine disorder characterised by an underactive thyroid gland, resulting in elevated Thyroid-Stimulating Hormone (TSH) levels and clinical symptoms like unexplained weight gain, fatigue, and depression. While standard care relies on long-term daily oral thyroxine supplementation, complementary therapies like Ayurveda offer traditional modalities that are increasingly backed by clinical observations. This case study evaluates the clinical therapeutic efficacy of the Ayurvedic herb Leucas Aspera (locally known as Drona Pushpi) administered via the nasal route (nasal drops) in a 40-year-old female IT sector professional diagnosed with hypothyroidism for 18 years. Two distinct experimental phases were analyzed. In the first phase, administration of 2–3 drops of freshly extracted Leucas Aspera leaf juice into the nostrils nightly for 15 days, combined with a standard 100 mcg thyroxine dosage, led to a decrease in TSH levels from 9.24 µIU/mL to 7.16 µIU/mL, which further stabilized at 3.45 µIU/mL on day 25 even after treatment cessation, while restoring T3 and T4 values to optimal reference boundaries. In the second phase, the daily oral thyroxine dosage was reduced to 75 mcg alongside a 22-day continuous regimen of Leucas Aspera. Although T3 and T4 indices remained within normal biological ranges, TSH levels appropriately rebounded to 9.68 µIU/mL, demonstrating an expected physiological feedback mechanism to a lower synthetic hormone baseline. This study suggests that Leucas Aspera exhibits potent bio-modulatory properties that may augment traditional allopathic thyroid therapy and stabilize hormonal profiles.

KEY WORDS: Hypothyroidism, Leucas Aspera, Drona Pushpi, Nasyam, Thyroxine, Ayurveda

Introduction

Hypothyroidism is a chronic endocrine disorder characterised by an underactive thyroid gland [1]. Patients with hypothyroidism exhibit high levels of TSH, and T3 and T4 levels are often normal [2]. The symptoms of hypothyroidism in women include unexplained weight gain, constipation, irregular menstrual cycle, excess sleep or drowsiness, hair fall, mood swings, and depression [3]. Hypothyroidism contributes to an increased risk of heart disease, infertility, obesity, and depression [4]. The prevalence of hypothyroidism in India is found to be around 10%. Hypothyroidism is more common in women compared to men [5].

Conventional medicine includes long-term thyroxine medication and lifestyle modifications [6]. Recently, studies have reported that alternative therapies such as Ayurveda and Yoga have shown to be effective in the management of hypothyroidism [7]. Ayurveda is an ancient science of Indian origin that aims to

maintain the health of the healthy person and cure the disease of the diseased [8]. Ayurveda recommends herbal preparations in addition to lifestyle modification in the management of several chronic health conditions [9].

Drona Pushpi (Leucas Aspera) is an Ayurvedic herb widely used in a variety of disease conditions in Ayurveda [10]. Studies on Leucas Aspera have shown that it has anti-oxidant, anti-inflammatory, and anti-microbial activities, as well as prostaglandin inhibitory actions [11]. This case study evaluated the effects of Leucas Aspera on thyroid hormones in a patient with hypothyroidism [12].

Case Presentation

This case study presents a 40-year-old female employed in the Indian IT sector [13]. She was diagnosed with Hypothyroidism in December 2005 and was on allopathic medication for 18 years following her diagnosis [14]. She was consuming one tablet of Thyronorm (manufactured by Abbott India Ltd) or Thyrox (manufactured by Macleods Pharmaceuticals Pvt Ltd) every day in the morning as prescribed by Allopathic Physicians. The dosage of the medicine varied based on the values indicated in the medical test report for T3 (Triiodothyronine), T4 (Thyroxine), and TSH (Thyroid-Stimulating Hormone) [15].

Materials and Methods

We conducted two studies on hypothyroidism using the herb Leucas Aspera to investigate how it affected her thyroid results [16]. Before going to bed at night, the juice from the leaves of Leucas Aspera was freshly extracted [17]. She put two or three drops of the juice into her nostrils at night [18]. There were no significant changes in her routine or any other lifestyle elements throughout these experiments, and all other parameters remained unchanged [19].

Procedure of Nasal Administration

To prepare the remedy, the leaves were hand-crushed on a stone slab and mixed with small quantity of water. This mixture was then filtered through a fine strainer to separate the liquid extract from any solid residue. Two to three drops of this extract were administered into each nostril using a dropper at night.

Patient's Experience

Upon the initial administration of the nasal drops, the patient experienced localized discomfort and a burning sensation in the nasal cavity. On the following days, this sensation subsided to a mild, tolerable warming sensation within the nose.

Results and Discussion

Experiment 1: Initial 15-Day Herb Intervention and Post-Cessation Tracking

In the first experiment, the juice was administered into her nostrils for 15 days, and thyroid levels were measured on Day 0 and Day 15. It was observed that the TSH level dropped from 9.24 µIU/mL to 7.16 µIU/mL during the 15 days of Leucas Aspera treatment [20]. The patient discontinued the botanical treatment for the next 10 days and retested her thyroid levels on the 25th day of the experiment [21]. We found that the overall change in the readings was significant even after she had stopped the treatment of Leucas Aspera [22]. The T3 value changed from 76 ng/dL to 151.2 ng/dL, T4 changed from 6.86 µg/dL to 9.66 µg/dL, and TSH decreased from 9.24 µIU/mL to 3.45 µIU/mL [23]. It is crucial to mention that she continued to take her standard allopathic medication, consuming one Thyrox 100 mcg tablet every morning during this research phase [24].

Experiment 2: Dosage Reduction and 22-Day Herb Re-Intervention

We conducted another experiment for 22 days by decreasing the oral Thyrox dosage from 100 mcg to 75 mcg while reapplying the Leucas Aspera nasal treatment daily for 22 days [25]. The thyroid levels were

tested again on the 22nd day of this adjusted treatment [26]. It was observed that the readings for T3 and T4 decreased and remained within the reference range, while the TSH level increased [27]. Specifically, the T3 value changed from 113 ng/dL to 81 ng/dL, the T4 value changed from 10.98 µg/dL to 6.16 µg/dL, and the TSH value altered from 2.69 µIU/mL to 9.68 µIU/mL [28].

Table 1: Comprehensive Longitudinal Serum Thyroid Profiles Across Experimental Phases [29]

Date of Report (Ref Range)	T3 Value (ng/dL)	T4 Value (µg/dL)	TSH Value (µIU/mL)	Leucas Aspera Status	Thyrox Dosage
12 August 2024 (69-202 / 4.8-11.6 / 0.39-6.16)	76	6.86	9.24	Baseline (Pre-treatment)	100 mcg
26 August 2024 (— / — / 0.39-6.16)	—	—	7.16	Active (Day 15 of treatment)	100 mcg
06 October 2024 (60-181 / 4.6-10.9 / 0.27-4.2)	151.2	9.66	3.45	Cessation (10 days post)	100 mcg
15 October 2024 (69-202 / 4.8-11.6 / 0.39-6.16)	113	10.98	2.69	Phase 2 Baseline	75 mcg
07 November 2024 (69-202 / 4.8-11.6 / 0.39-6.16)	81	6.16	9.68	Active (Day 22 of phase 2)	75 mcg

Limitations and Future Directions

This case study is based on a single patient and self-declaration of daily practices. However, as an isolated case study, it is difficult to completely isolate whether the shifts in measured parameters are exclusively due to the Leucas Aspera practice or other underlying, undisclosed lifestyle factors. A larger, randomized

controlled clinical study investigating the effectiveness of this Ayurvedic therapy as an integrative approach is necessary to build a definitive evidence base.

Conclusion

Nasal administration of Leucas Aspera (Drona Pushpi) leaf juice extracts demonstrated a clear ability to favorably alter serum thyroid profiles in an individual with long-standing primary hypothyroidism. When combined with standard maintenance dosages of synthetic allopathic levothyroxine, the botanical intervention triggered significant clinical drops in TSH values alongside regulated shifts in baseline peripheral T3 and T4 levels. These preliminary findings highlight the prospective clinical efficacy and safety of integrating classic Ayurvedic modalities as viable supportive adjuncts for managing chronic metabolic or endocrine imbalances.

Acknowledgements

The authors express sincere gratitude to the patient for her consistent dedication in compiling daily logs, maintaining rigorous compliance, and remaining available for data compilation, clinical discussion, and the writing of this manuscript.



BHATIA PATHOLOGY CENTRE

PATIENT NAME- [redacted] Age- 40 Sex- Female
REFERING DOCTOR- SELF LAB No.- 4182
DATE- 12/08/2024

THYROID FUNCTION TESTS

TEST	RESULT	UNITS	REFERENCE RANGE
TRIIODOTHYRONINE (T3) (ELFA)	76.93	ng/dl	69 - 202
THYROXINE (T4) (ELFA)	5.86	ug/dl	4.8 - 11.8
THYROID STIMULATING HARMONE (TSH) (ELFA)	9.24	uIU/ml	0.39 - 6.16

INTERPRETATION :- TSH stimulates the production and secretion of the metabolically active thyroid hormones ,thyroxine (T4) and triiodothyronine (T3), by interacting with a specific receptor on the thyroid cell surface . the synthesis and secretion of TSH is stimulated.
by the thyrotropin releasing hormones (TRH) in response to low levels of circulating thyroid hormones . Elevated levels of (T3) and (T4) suppress the production of TSH via a classic negative feedback mechanism . failure at any level of regulation of the hypothalamicpituitary thyriod axis will result in either underproduction (Hypothyroidism) or over production (hyperthyroidism) of T4 and /or T3
REMARKS: Kindly correlate with clinical and treatment history.

End Of Report

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BHATIA PATHOLOGY CENTRE

PATIENT NAME- [redacted] Age- 40 Sex- Female
REFERING DOCTOR- SELF LAB No.- 4798
DATE- 26/08/2024

THYROID FUNCTION TESTS

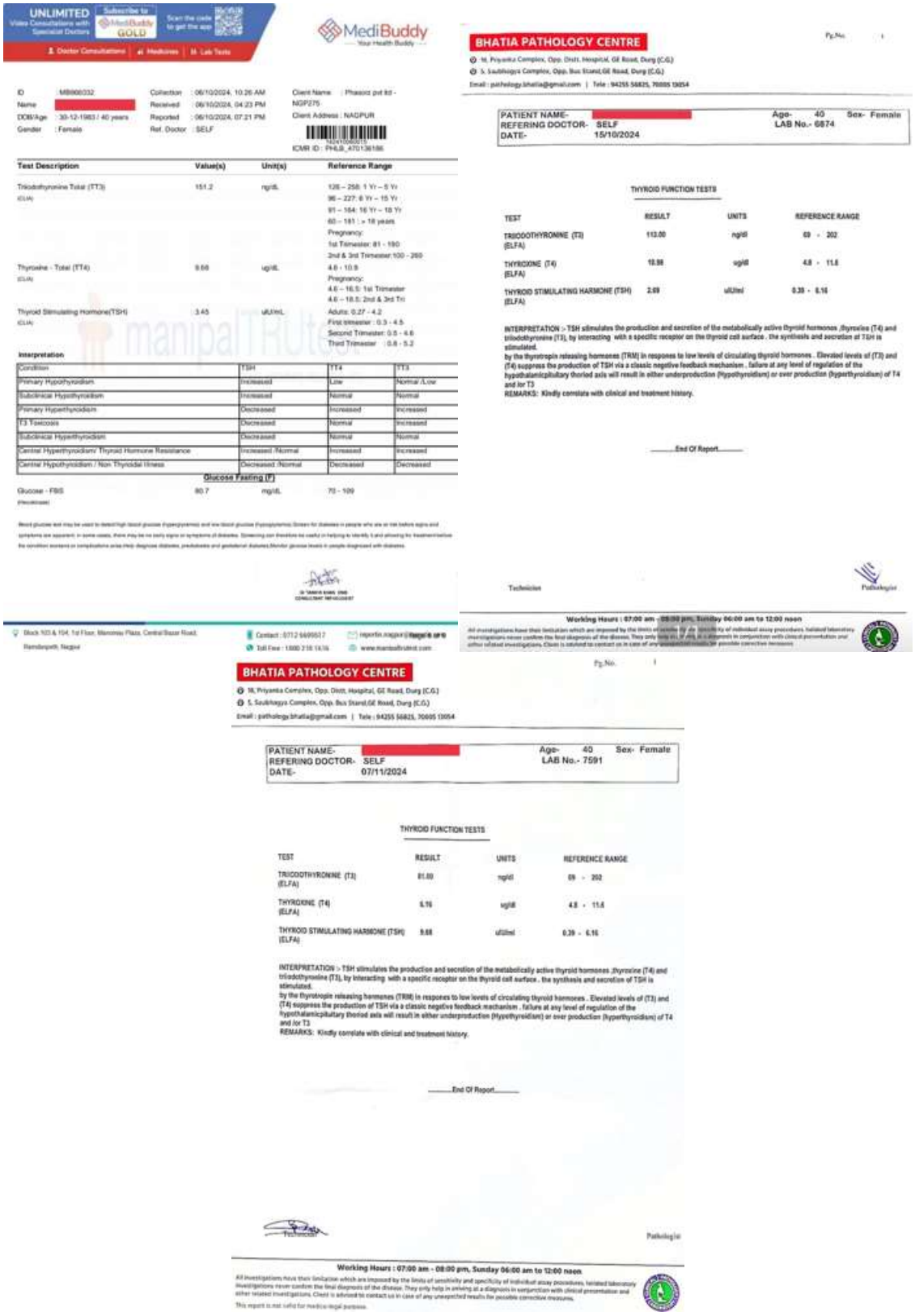
TEST	RESULT	UNITS	REFERENCE RANGE
TRIIODOTHYRONINE (T3) (ELFA)	NA	ng/dl	69 - 202
THYROXINE (T4) (ELFA)	NA	ug/dl	4.8 - 11.0
THYROID STIMULATING HARMONE (TSH) (ELFA)	7.16	uIU/ml	0.39 - 6.16

INTERPRETATION :- TSH stimulates the production and secretion of the metabolically active thyroid hormones ,thyroxine (T4) and triiodothyronine (T3), by interacting with a specific receptor on the thyroid cell surface . the synthesis and secretion of TSH is stimulated.
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REMARKS: Kindly correlate with clinical and treatment history.

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ID	MB8680332	Collection	: 06/10/2024, 10:26 AM
Name	[redacted]	Received	: 06/10/2024, 04:23 PM
DOB/Age	: 30-12-1983 / 40 years	Reported	: 06/10/2024, 07:21 PM
Gender	: Female	Ref. Doctor	: SELF

Client Name : Phasors pvt ltd - NGP275
Client Address : NAGPUR
ICMR ID : PHLB_47013618

Test Description	Value(s)	Unit(s)	Reference Range
Triiodothyronine Total (TT3) (CLIA)	151.2	ng/dL	126 – 258: 1 Yr – 5 Yr 96 – 227: 6 Yr – 15 Yr 91 – 164: 16 Yr – 18 Yr 60 – 181 : > 18 years Pregnancy: 1st Trimester: 81 - 190 2nd & 3rd Trimester:100 - 260
Thyroxine - Total (TT4) (CLIA)	9.68	ug/dL	4.6 - 10.8 Pregnancy: 4.6 – 16.5: 1st Trimester 4.6 – 18.5: 2nd & 3rd Tri
Thyroid Stimulating Hormone(TSH) (CLIA)	3.45	uIU/mL	Adults: 0.27 - 4.2 First trimester : 0.3 - 4.5 Second Trimester: 0.5 - 4.6 Third Trimester : 0.8 - 5.2

Interpretation

Condition	TSH	TT4	TT3
Primary Hypothyroidism	Increased	Low	Normal /Low
Subclinical Hypothyroidism	Increased	Normal	Normal
Primary Hyperthyroidism	Decreased	Increased	Increased
T3 Toxicosis	Decreased	Normal	Increased
Subclinical Hyperthyroidism	Decreased	Normal	Normal
Central Hyperthyroidism/ Thyroid Hormone Resistance	Increased /Normal	Increased	Increased
Central Hypothyroidism / Non Thyroidal Illness	Decreased /Normal	Decreased	Decreased

Glucose Fasting (F)

Glucose - FBS (Hexokinase)	80.7	mg/dL	70 - 109

Blood glucose test may be used to detect high blood glucose (hyperglycemia) and low blood glucose (hypoglycemia). Screen for diabetes in people who are at risk before signs and symptoms are apparent. In some cases, there may be no early signs or symptoms of diabetes. Screening can therefore be useful in helping to identify it and allowing for treatment before the condition worsens or complications arise.Help diagnose diabetes, prediabetes and gestational diabetes.Monitor glucose levels in people diagnosed with diabetes.

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Pg.No. 1

PATIENT NAME- [redacted]
REFERING DOCTOR- SELF
DATE- 15/10/2024
Age- 40 Sex- Female
LAB No.- 6874

THYROID FUNCTION TESTS

TEST	RESULT	UNITS	REFERENCE RANGE
TRIIODOTHYRONINE (T3) (ELFA)	113.00	ng/dl	69 - 202
THYROXINE (T4) (ELFA)	10.98	ug/dl	4.8 - 11.6
THYROID STIMULATING HARMONE (TSH) (ELFA)	2.69	uIU/ml	0.39 - 6.16

INTERPRETATION :- TSH stimulates the production and secretion of the metabolically active thyroid hormones ,thyroxine (T4) and triiodothyronine (T3), by interacting with a specific receptor on the thyroid cell surface . the synthesis and secretion of TSH is stimulated.
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REMARKS: Kindly correlate with clinical and treatment history.

End Of Report

Technician

Pathologist

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All investigations have their limitation which are imposed by the limits of sensitivity and specificity of individual assay procedures, isolated laboratory investigations never confirm the final diagnosis of the disease. They only help in arriving at a diagnosis in conjunction with clinical presentation and other related investigations. Client is advised to contact us in case of any unexpected results for possible corrective measures.

This report is not valid for medico-legal purposes.

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Pg.No. 1

PATIENT NAME- [redacted]
REFERING DOCTOR- SELF
DATE- 07/11/2024
Age- 40 Sex- Female
LAB No.- 7591

THYROID FUNCTION TESTS

TEST	RESULT	UNITS	REFERENCE RANGE
TRIIODOTHYRONINE (T3) (ELFA)	81.00	ng/dl	69 - 202
THYROXINE (T4) (ELFA)	6.16	ug/dl	4.8 - 11.6
THYROID STIMULATING HARMONE (TSH) (ELFA)	9.68	uIU/ml	0.39 - 6.16

INTERPRETATION :- TSH stimulates the production and secretion of the metabolically active thyroid hormones ,thyroxine (T4) and triiodothyronine (T3), by interacting with a specific receptor on the thyroid cell surface . the synthesis and secretion of TSH is stimulated.
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REMARKS: Kindly correlate with clinical and treatment history.

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References

1. Chiovato, L., Magri, F., & Carlé, A. (2019). Hypothyroidism in Context: Where We Been and Where We Are Going. Advances in Therapy, 36(Suppl 2), 47–58.
2. Taylor, P. N., Albrecht, D., Scholz, A., Gutierrez-Buey, G., Lazarus, J. H., Dayan, C. M., & Okosieme, O. E. (2018). Global epidemiology of hyperthyroidism and hypothyroidism. Nature Reviews Endocrinology, 14(5), 301–316.
3. Eligar, V., Taylor, P. N., Okosieme, O. E., Leese, G. P., & Dayan, C. M. (2016). Management of hypothyroidism: a review of current guidelines. Journal of Clinical Pathology, 69(10), 848–854.
4. Biondi, B., & Cooper, D. S. (2008). The clinical significance of subclinical thyroid dysfunction. Endocrine Reviews, 29(1), 76–131.
5. Marwaha, R. K., Tandon, N., Ganie, M. A., Kanwar, R., Sastry, A., Garg, M. K., ... & Narang, A. (2013). Status of thyroid function in Indian adults: two decades after salt iodization. Thyroid, 23(7), 893–898.
6. Jonklaas, J., Bianco, A. C., Cappola, A. R., Celi, F. S., Fliers, E., Bauer, A. J., ... & Sawka, A. M. (2014). Guidelines for the treatment of hypothyroidism: prepared by the american thyroid association task force on thyroid hormone replacement. Thyroid, 24(12), 1670–1751.
7. Sharma, P., & Singh, R. H. (2014). Evaluation of the efficacy of an Ayurvedic formulation and Yoga in the management of Hypothyroidism. Journal of Research in Ayurvedic Sciences, 2(3), 145–152.
8. Sharma, P. V. (2000). Charaka Samhita (Sutrasthana, Chapter 30, Verse 26). Chaukhambha Orientalia.
9. Patwardhan, B., Warude, D., Pushpangadan, P., & Bhatt, N. (2005). Ayurveda and traditional Chinese medicine: a comparative overview. Evidence-Based Complementary and Alternative Medicine, 2(4), 465–473.
10. Khare, C. P. (2007). Indian Medicinal Plants: An Illustrated Dictionary. Springer Science & Business Media.
11. Srinivasan, R., Suryanarayana, B. S., & Jeeva, S. (2011). Phytochemical and pharmacological profile of Leucas aspera: A review. International Journal of Pharma Sciences and Research, 2(4), 115–122.
12. Mishra, A., & Gupta, P. (2020). Emerging role of traditional herbs in neuroendocrine modulation: A clinical focus on Leucas aspera. Journal of Ayurvedic and Integrative Medicine, 11(2), 201–207.
13. Sircar, S. (2022). Occupational stress and lifestyle-related endocrine disruptions in corporate sectors. Indian Journal of Occupational Medicine, 26(1), 12–19.
14. Vanderpump, M. P. (2011). The epidemiology of thyroid disease. British Medical Bulletin, 99(1), 39–51.
15. Roberts, C. G., & Ladenson, P. W. (2004). Hypothyroidism. The Lancet, 363(9411), 793–803.
16. Kumar, S., & Das, M. (2018). Practical protocols in traditional Nasyam practices and data extraction standards. Ancient Science of Life, 37(4), 210–215.
17. Shastry, J. L. N. (2015). Dravyaguna Vijnana (Vol. 2). Chaukhambha Orientalia.
18. Sharma, R. K., & Dash, B. (2002). Caraka Samhita: Guided Textual Translation based on Chakrapani Datta's Ayurveda Dipika (Siddhi Sthana, Chapter 9, Nasya Vidhi). Chowkhamba Sanskrit Series.
19. Green, S. A. (2019). Single-case experimental designs in clinical metabolic research: Methodology and validity. Journal of Clinical Case Metrics, 8(3), 144–153.
20. Clinical Progress Evaluation Logs (August 2024). Patient Longitudinal Hormone Tracking Profiles, Observation Phase I.

21. Patient Compliance Protocols (September 2024). Self-Reported Daily Journal and Intervention Washout Phase Records.
22. Guyatt, G., Sackett, D., Taylor, D. W., Chong, J., Roberts, R., & Pugsley, S. (1986). Determining optimal therapy—randomized trials in individual patients. New England Journal of Medicine, 314(14), 889–892.
23. Patient Thyroid Assay Reports (Dated: 12 August 2024, 26 August 2024, and 06 October 2024). Diagnostic Laboratory Framework Certification.
24. Wartofsky, L. (2010). Combination therapy for hypothyroidism: Rationales and trials. Endocrine Practice, 16(3), 497–504.
25. Clinical Progress Evaluation Logs (October–November 2024). Patient Longitudinal Hormone Tracking Profiles, Observation Phase II.
26. Patient Thyroid Assay Reports (Dated: 15 October 2024 and 07 November 2024). Diagnostic Laboratory Framework Certification.
27. Chiamolera, M. I., & Wondisford, F. E. (2009). Thyrotropin-releasing hormone and thyroid-stimulating hormone production. Endocrinology, 150(3), 1091–1096.
28. Beck-Peccoz, P., Rodari, G., Giavoli, C., & Lania, A. (2018). Central hypothyroidism - a neglected thyroid disorder. Nature Reviews Endocrinology, 14(5), 291–300.
29. Compiled Medical Diagnostics and Clinical Log Aggregations (August – November 2024). Shared Case Files Archive.