

Preliminary Evaluation of Kanchnar Shunti Ghanavati in Primary Hypothyroidism: A 12-Week Pilot Study

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Abstract Primary hypothyroidism is a common endocrine disorder resulting from insufficient thyroid hormone production, causing fatigue, weight gain, and cold intolerance. In Ayurveda, it is associated with Kapha dosha and Meda dhatu imbalance, leading to sluggish metabolism. Kanchnar Shunti Ghanavati, combining Kanchnar (*Bauhinia variegata*) and Shunti (*Zingiber officinale*) in a concentrated tablet form, is traditionally used for Kapha balancing and thyroid support. This open-label pilot study evaluated its preliminary efficacy and safety in 10 patients with primary hypothyroidism over 12 weeks. Patients received 500 mg twice daily. Key outcomes included changes in thyroid-stimulating hormone (TSH), free thyroxine (FT4), symptom scores, and adverse events. Mean TSH decreased from 8.2 mIU/L to 4.5 mIU/L, FT4 increased from 0.7 to 1.1 ng/dL, and symptoms like fatigue improved by 45%. Mean body weight reduced by 2.3 kg. No serious adverse events occurred. These findings suggest potential benefits of Kanchnar Shunti Ghanavati, warranting larger controlled trials.

I. Introduction

Primary hypothyroidism occurs when the thyroid gland fails to produce sufficient thyroid hormones (T3 and T4), most commonly due to autoimmune conditions such as Hashimoto's thyroiditis, iodine deficiency, or environmental factors. Globally, prevalence is 2–5% in developed countries and up to 11% in India, with women being more affected. Conventional therapy involves lifelong levothyroxine replacement, which may cause adverse effects including cardiac complications or bone loss in some patients.

In Ayurveda, hypothyroidism is considered akin to Galaganda (goiter) or Gandamala (lymphadenopathy), attributed to vitiated Kapha dosha obstructing Pitta function, resulting in metabolic sluggishness and glandular dysfunction. Symptoms typically include lethargy, weight gain, cold intolerance, constipation, and swelling. Ayurvedic management focuses on balancing doshas, enhancing Agni (digestive/metabolic fire), reducing Meda dhatu (fat tissue), and supporting thyroid function using herbal formulations.

Kanchnar (*Bauhinia variegata*) is valued for its Ruksha (dry), Laghu (light), and Ushna (hot) qualities, beneficial for Kapha-dominant disorders. It exhibits anti-inflammatory, immunomodulatory, and thyroid-protective properties. Shunti (*Zingiber officinale*) complements these effects by promoting digestion, metabolism, and Kapha reduction. Ghanavati, a concentrated tablet form, improves bioavailability. Previous studies on Kanchnar-based formulations like Kanchnar Guggulu have demonstrated reductions in TSH and symptom improvement. This pilot study explores Kanchnar Shunti Ghanavati as a potential adjunct or alternative therapy for primary hypothyroidism.

Objectives - Primary: Assess changes in TSH, T3 and T4. - Secondary: Evaluate symptom improvement, body weight changes, and safety.

Materials and Methods Study Design This open-label, single-arm pilot study was conducted at Kayachikitsa Department, SMBT Ayurved College and Hospital, India (January–April 2025). Ethical approval was obtained, and informed consent was collected from all participants.

Participants Inclusion criteria: adults aged 18–60 years, diagnosed with primary hypothyroidism (TSH >4.5 mIU/L, FT4 <0.8 ng/dL), mild to moderate symptoms (Zulewski score >3), and willingness to avoid other thyroid medications. Exclusion criteria included secondary hypothyroidism, pregnancy, lactation, severe comorbidities, recent thyroid surgery, or known allergies to study ingredients.

Sample Size 10 patients enrolled via convenience sampling.

Intervention Kanchnar Shunti Ghanavati 500 mg tablets administered twice daily after meals for 12 weeks with lukewarm water. A Kapha-pacifying diet was recommended.

Assessments - Biochemical: TSH, FT4, T3 via chemiluminescence immunoassay at baseline and Week 12. - Symptom Scoring: Modified Zulewski's scale (0–12). - Anthropometric: Body weight and BMI. - Safety: Weekly monitoring of adverse events; liver and kidney function at baseline and Week 12. - Compliance: Pill count and patient diaries.

Statistical Analysis Paired t-tests were used for pre-post comparisons ($p < 0.05$ significant). Descriptive statistics reported as mean $\pm$ SD.

Results Patient Demographics Mean age: 41.5 ± 5.2 years; 7 females, 3 males. Mean baseline TSH: 8.2 ± 2.1 mIU/L; mean FT4: 0.7 ± 0.2 ng/dL. All patients completed the study with >90% compliance.

Thyroid Function Tests

Parameter	Baseline (Mean ± SD)	Week 12 (Mean ± SD)	Change (%)	p-value
TSH (mIU/L)	8.2 ± 2.1	4.5 ± 1.3	-45.1	<0.001
FT4 (ng/dL)	0.7 ± 0.2	1.1 ± 0.3	+57.1	<0.01
T3 (pg/mL)	2.4 ± 0.5	2.9 ± 0.4	+20.8	0.03

8/10 patients achieved TSH normalization (<4.5 mIU/L).

Symptom Scores Zulewski total scores decreased from 7.1 ± 1.8 to 3.2 ± 1.1 (-54.9%, $p < 0.001$). Fatigue and cold intolerance showed the most improvement.

Anthropometrics Mean weight reduced by 2.3 kg ($p = 0.02$); mean BMI decreased by 0.9 kg/m^2 ($p = 0.03$).

Safety Mild transient gastrointestinal discomfort in 2 patients resolved spontaneously. No serious adverse events or changes in liver/kidney function were observed.

Compliance >90% for all participants; all completed 12-week study.

II. Discussion

Kanchnar Shunti Ghanavati showed preliminary efficacy in primary hypothyroidism. Reduction in TSH and increase in FT4 aligns with Ayurvedic properties of Kapha-shamaka and Lekhana (scraping), supporting thyroid metabolism. Symptom improvement and weight loss are consistent with Shunti's anti-inflammatory and metabolism-enhancing effects.

Compared to other Kanchnar-based formulations like Kanchnar Guggulu, this combination may offer similar efficacy with fewer gastrointestinal effects. Limitations include small sample size, lack of control group, and short duration; dietary modifications may have influenced outcomes.

Future randomized controlled trials with larger sample sizes and longer follow-up are warranted to confirm efficacy and optimize dosing strategies.

III. Conclusion

Kanchnar Shunti Ghanavati appears safe and potentially effective for managing primary hypothyroidism, improving biochemical markers and clinical symptoms. It may serve as a complementary or alternative therapy alongside conventional management.

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