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## Review Article

### A REVIEW ON FORMULATIONS MENTIONED FOR GALAGANDA AND GANDAMALA

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#### ABSTRACT

The thyroid gland is a key endocrine organ that regulates oxygen consumption, basal metabolic rate, growth, and cellular metabolism through the secretion of T<sub>3</sub> and T<sub>4</sub> hormones. Although classical Ayurvedic texts do not describe the thyroid gland, Galaganda characterized by neck swelling and metabolic disturbances is discussed, and it is clinically comparable to hypothyroidism. Galaganda occurs due to vitiation of Kapha and Vata Doshas, impairment of Dhatvagni, and involvement of Meda and Majja Dhatus. Disturbances in Rasadhatu further contribute to manifestations similar to modern hypothyroidism, such as fatigue, heaviness, anorexia, lethargy, and metabolic sluggishness. This review compiles classical formulations from texts such as Bruhatrayi, Sharangadhara Samhita, Bhaishajya Ratnavali, Yogaratnakara, and Chakradatta, alongside recent clinical studies evaluating their therapeutic potential. Several formulations including Kanchanara Guggulu, Kanchanara Twak Kwatha, Triphaladi Guggulu, Jalakumbi Bhasma, Nichuladi Lepa, Nirgundi Taila, and Gandamala Kandana Rasa have shown promising outcomes in reducing glandular swelling, improving symptoms, and normalizing thyroid parameters. Ayurvedic interventions exert therapeutic effects through Agnideepana, Kaphahara, Lekhana, Srotoshodhana, Medohara, and Rasayana actions. Herbs such as Kanchanara, Triphala, Trikatu, Guggulu, Punarnava, Varuna, and Shilajatu enhance metabolism, reduce glandular enlargement, support lymphatic drainage, and rejuvenate endocrine functions. External therapies like Nichuladi Lepa demonstrate significant efficacy in reducing localized swelling, highlighting the importance of Bahya chikitsa. Overall, the integrated use of internal and external Ayurvedic therapies provides a multi-dimensional approach to the management of Galaganda and hypothyroidism.

**Keywords:** Galaganda, Hypothyroidism, Kapha Vata disorder, Agnideepana

#### INTRODUCTION

The thyroid gland is a vital organ of the human endocrine system that plays a crucial role in the regulation of oxygen consumption, basal metabolic rate (BMR), cellular metabolism, growth, and overall development. It maintains metabolic homeostasis by secreting thyroid hormones triiodothyronine (T<sub>3</sub>) and thyroxine (T<sub>4</sub>) which influence almost every tissue in the body.<sup>1</sup> In Ayurvedic literature, there is no direct reference to the thyroid gland as described in modern physiology. However, Galaganda, characterized by swelling in the neck region, is extensively discussed and is considered closely comparable to hypothyroidism in its clinical presentation.

Acharya Sushruta identifies the sixth layer of the skin, Rohini, as the seat of Galaganda.<sup>2</sup> Galaganda occurs when Vata and Kapha Doshas are vitiated, predominantly Kapha. This further disturbs Meda and Majja Dhatus, leading to the formation of Galaganda. Dushti of Rasadhatu plays a major role in its pathogenesis.

Acharya Charaka described multiple swellings around the neck as Gandamala, whereas a single swelling on one side of the neck is termed Galaganda. Charaka states that Galaganda primarily arises due to the vitiation of Kapha dosha. Many Rasaja Vikaras, as mentioned in Charak Samhita, are similar to the clinical features of hypothyroidism, such as Asradhdha, Aruchi, Gaurava, Tandra, Angamarda, Panduroga, Klabha, Srotorodha, Agnimadhya, etc.<sup>3</sup> According to Acharya Vagbhata, Kapha associated with Pitta dusti and the vitiation of Vata due to margavarana, along with the involvement of Rasavaha, Medovaha, and Mamsavaha srotas, can be considered as the basis of the disease.<sup>4</sup>

Hypothyroidism, is one of the most prevalent endocrine disorders, primarily resulting from an underactive thyroid gland. This condition is associated with decreased production of T<sub>3</sub> - T<sub>4</sub> and increased production of TSH.<sup>5</sup> Here we will discuss the various Ayurvedic formulations described in classical texts for the management of Galaganda and Gandamala.

#### FORMULATIONS MENTIONED IN DIFFERENT CLASSICAL TEXTS

Table 1: Formulations mentioned in Bruhatrayi

Sushruta <sup>6</sup>	Ashtanga hridaya <sup>7</sup>	Charaka <sup>8</sup>
Amritati taila - panam	Tila beejadi upanaha	Adopts granti chikitsa
Shanadi lepa	Shigru tilvakadi lepa	
Katutrikadi yoga	Guluchyadi taila - panam	

kakathani aadi kshara - panam		
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**Table 2: Formulations mentioned in Sharangadhara samhitha**

Alambusha swarasa <sup>9</sup>	Maha tiktaka ghrita <sup>13</sup>
Kanchanara twak kwatha <sup>10</sup>	Vachadi taila <sup>14</sup>
Varuna twak kwatha <sup>10</sup>	Langali taila <sup>14</sup>
Kanchanara guggulu <sup>11</sup>	Vidangarishtam <sup>15</sup>
Sarshapadi lepa <sup>12</sup>	

**Table 3: Formulations mentioned in Bhaishajya ratnavali <sup>16</sup>**

Lepa	Kwatha	Vati	Taila
Nicholadi lepa	Kanchanara varuna kwatha	Raudra rasa	Tumbi tailam
Himsraadi lepa		Kanchanara guggulu	Amritaadya taila
Sarshapadi lepa			Chuchundari tailam
Bharangi mula pralepa			Sankotaka bimbaadya tailam
Shobhanjanaadi lepa			Nirgundadya tailam
Vikantakadi lepa			Vyoshadya taila
Dandimuladi lepa			Chandanadya taila
Swarjikadi lepa			Gunjadya taila
			Sinduraadi taila

**Table 4: Formulations mentioned in Yogaratnakara <sup>17</sup>**

Lepa	Bhasma	Taila	Kwatha	Vati
Nicholadi lepa	Jalakumbi bhasma	Amritadi tailam	Kanchanara kwatha	Triphaladi guggulu
Devadarvadi lepa	Mandoora bhasma	Tumbi tailam		Kanchanara guggulu
Suryavarta lepa		Ajamodadi taila		Jayapalapatra vati
Sarshapadi lepa		Nirgundi taila		Gandamala kandano rasa
Mundi pralepa		Chuchundari taila		
Kacchanaradi lepa		Gunja taila		
Gandakadya lepa		Gandakadya taila		
Bhallatakadi lepa				

**Table 5: Formulations mentioned in Chakradatta <sup>18</sup>**

Lepa	Taila	Kwatha	Swarasa
Hastikarna palasa lepa	Amritadya taila	Kanchanara kwatha	Alambusha swarasa
Sarshapa lepa	Tumbi taila		
Suryavartadya upanaha	Chuchundari taila		
Bharangi mula pralepa	Sankotaka bimbaadya tailam		
Shobanjanadi lepa	Nirgundi taila		
Aswathadi pralepa	Vyoshadi taila		
Sarshapadi lepa	Chandanadya taila		
	Gunjadya taila		

**RESEARCH UPDATES ON FORMULATION****Nichuladi lepa**

Ingredients - Nichula, Shigru, Dasha moola

A clinical study was conducted on 20 patients, where Group A received Gandamalakandana Rasa internally along with Nichuladi Lepa externally. The treatment was administered once daily to evaluate its effectiveness in managing Galaganda with special reference to thyrotoxicosis. Result – There was reduction in the size of enlarged thyroid gland but no significant changes in serum T3, T4, and TSH values. <sup>19</sup>

**Kanchanara twak kwatha**

Ingredients – Kanchanara twak with Shunti churna

A comparative study was carried out on 40 participants, divided into two groups of 20 each. Group A received 50 ml of Kanchanara Twak Kwatha along with 2 g of Shunthi Churna, while Group B was treated with Levothyroxine 50 µg once daily before meals to assess their effectiveness in managing hypothyroidism.

Result - Group A - excellent improvement in 95% patients, marked improvement in 5%patients. Group B - excellent improvement in 10% patients, marked improvement in 35%

patients and mild improvement in 35% whereas 20% patients showed no improvement. <sup>20</sup>

**Jalakumbi bhasma**

Ingredients - Jalakumbhi bhasma, Gomutra, Kodrava

A clinical study was conducted on 20 patients over a 15-day period to evaluate the management of hypothyroidism. Participants received Jalakumbhi bhasma bhabitam go mutra at a dose of 250 mg twice daily.

Result - Subjective parameter like hairfall, constipation, weight gain & menstrual disturbance reduced significantly and TSH Showed significant increase. <sup>21</sup>

**Nirgundi taila**

Ingredients – Nirgundi, Langali taila.

A clinical study was carried out on 30 patients to assess a combined therapeutic approach for hypothyroidism. The treatment protocol included administering 8 drops of Nirgundi Taila Nasya daily for 7 days, followed by Gomutra Haritaki.

Result - All parameters showed a mean reduction of symptoms between 68–75%,. A significant improvement was observed in TSH levels after treatment. <sup>22</sup>

**Gandamala kandano rasa**

Ingredients – Parada, Shuddha gandhaka, Tamra bhasma, Mandura bhasma, Trikatu, Saindhava, Stem bark powder of Kanchanara, Guggulu, Goghrita.

A 35-year-old female patient was administered with Gandamalakandano rasa over a 90-day treatment period for the management of hypothyroidism. The dose given is 250 mg twice daily with honey.

Result - Ayurvedic management yielded symptomatic relief and reduced the range of thyroid-stimulating Hormones after treatment.<sup>23</sup>

#### Kanchanara guggulu

Ingredients - Kanchanara, triphala, trikatu, guggulu, tvak, ela, tejapatra, varuna

A clinical study was conducted on 30 patients over a period of three months to assess the management of Galganda. Participants received Kanchanara Guggulu at a dose of 1 g twice daily.

Result - The results were not significant in T3 and T4 levels after completing the course. However, they were significant in TSH levels.<sup>24</sup>

#### Triphaladi guggulu

Ingredients – Triphala, Pippali, Guggulu.

A clinical study involving 20 patients was conducted to assess the effect of Triphaladya Guggulu on hypothyroidism. Participants were given Triphaladya Guggulu at a dose of 2 vatis (500 mg) twice daily after meals, along with Punarnavadi Kashaya.

Result - Highly significant improvement ( $P < 0.001$ ) was observed on all the complaints, such as puffiness oedema, and dry coarse skin, etc. TSH value; mean B.T. was 3.79, which was reduced to 1.39.<sup>25</sup>

### DISCUSSION

In Ayurveda, Galaganda is described as a Kapha Vata dominant disorder primarily arising due to Dhatwagnimandya and vitiation of Meda Dhatu, resulting in glandular enlargement. The pathogenesis aligns with modern understanding of thyroid dysfunction, particularly hypothyroidism, where metabolic derangement and tissue proliferation are central features.

Since Agnimandya is considered the root cause of Galaganda, formulations possessing Laghu properties are more suitable for its management. Therapeutic Interventions such as Agnideepana, Kaphahara, Lekhana, Srotoshodhana, Medohara and Rasayana play key roles in management. Common drugs present in the formulations are Kanchanara, Triphala, Trikatu, Devadaru, Shilajatu and Varuna. These herbs act synergistically to balance Vata and Kapha doshas, correct Agnimandya, and reduce Granthi as seen in Galaganda. Agnideepana dravyas like Trikatu, Guggulu, and Triphala stimulate cellular metabolism and oxygen utilization, thereby enhancing basal metabolic rate and thyroid function. Herbs with Kaphahara and Lekhana properties, including Kanchanara, Varuna, and Guggulu, reduce mucous congestion and glandular swelling, comparable to the reduction of colloid accumulation within thyroid follicles. Similarly, Srotoshodhana herbs such as Punarnava, Varuna and Trikatu facilitate lymphatic and circulatory drainage in the cervical region, helping to resolve local stagnation responsible for thyroid enlargement.<sup>26</sup> Rasayana dravyas like Ashwagandha, Shilajit, and Triphala support endocrine rejuvenation, improve mitochondrial energy metabolism, and help regulate the hypothalamic pituitary thyroid (HPT) axis. Hypothyroidism increases free radical formation, leading to oxidative tissue damage. Rasayana drugs act as antioxidants, neutralizing free radicals and reducing such destruction. They also enhance *Agni*, improving metabolism,

which makes Rasayanas beneficial in hypothyroidism.<sup>27</sup> Medohara dravyas such as Guggulu and Trikatu further aid in balancing lipid metabolism and counteracting metabolic sluggishness associated with thyroid dysfunction.

Clinical studies have substantiated these traditional claims. Positive outcomes have been reported with formulations like Kanchanara guggulu, Kanchanara twak kwatha, Triphaladi guggulu etc in reducing symptoms of Galaganda and Gandamala. External therapies, particularly Nichuladi lepa, have shown significant reduction in glandular swelling, demonstrating the role of Bahya chikitsa in local pathology. Many Lepas mentioned by Acharyas possess Laghu guna, Ushna Veerya, and Kapha vata hara properties. These characteristics may assist in transdermal absorption and targeted drug delivery, enhancing local action while maintaining systemic balance. Hence, combining internal and external measures offers a effective approach for managing Galaganda and Gandamala with Ayurvedic principles.

### CONCLUSION

The Ayurvedic understanding of Galaganda as a Kapha vata predominant disorder rooted in Dhatwagnimandya and Meda dushti closely parallels the modern concept of thyroid dysfunction, particularly hypothyroidism. Ayurvedic formulations with Agnideepana, Kaphahara, Lekhana, Srotoshodhana, Medohara, and Rasayana properties effectively address the underlying metabolic imbalance, Dosha vitiation, and glandular enlargement. Herbs such as Kanchanara, Trikatu, Triphala, Varuna, Guggulu, Shilajatu, and Punarnava act synergistically to improve metabolism, enhance lymphatic drainage, and rejuvenate endocrine function. Clinical evidence further validates these ayurvedic formulations are effective in Galaganda and related conditions.

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