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# A CLINICAL STUDY OF KANCHANARA PATRA SWARASA PANA & NASYA IN HYPOTHYROIDISM

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## ABSTRACT
Hypothyroidism is also called as underactive thyroid, is a disorder of endocrine system in which thyroid gland does not produce enough thyroid hormone. Normal TSH level typically fall between 0.4-4.0 mille units per liter (mu/L). Higher levels suggest hypothyroidism or underactive thyroid. It's a very uncommon disease to be found in children. It's usually said to be a genetically evolving disorder. The worldwide statistics says it affects one child out of thousand two hundred and fifty children. While analyzing the signs and symptoms of hypothyroidism in Ayurvedic view, we note the involvement of all srotas. The Kapha dosha and Vata dosha vruddhi is elicited and Pitta dosha kshaya is seen. Though some physicians consider it as a sthanika vyadhi under Galaganda roga, it's dushti lakshanas are seen in whole body. In Ayurveda, Kanchanara twak (bark) is widely used in various formulations like Kanchanara guggulu, Triphaladya gugglu to treat Galaganda. Use of Kanchanara patra swarasa in the form of oral medicine as well as nasya is a folklore practice which is usually not practiced. There is a need of this study and effect of its therapeutic concept. A study has been conducted in our hospital and has shown significant results in hypothyroidism in child.

**KEYWORDS:** Hypothyroidism, TSH, Children, Kanchanara swarasa, Pana, Nasya.

## INTRODUCTION
Thyroid disorders are most common worldwide and hypothyroidism is commonest of them. It's a clinical condition resulting from reduced production of the thyroid hormone.[1] The incidence of thyroid disorders in India is high, with hypothyroidism being a condition that is not adequately controlled in the country at present. Lack of thyroid hormone or resistance of the body tissue to thyroid hormone with respect to metabolic demand results in disorder called hypothyroidism. The thyroid hormone is required for the normal metabolism of tissues and functioning of numerous tissues. They act to increase the basal metabolic rate, affect protein synthesis, and help regulating long bone growth. It's the hormone very essential for the proper development and differentiation of body cells and help to maintain the energy usage by the cells. They also stimulate the vitamin metabolism. It helps in generation of heat in the human body. Hence, its deficiency manifests as multisystem involvement. It is estimated that about 42 million people suffer from thyroid disorders in India, of which hypothyroidism is most common with a prevalence of 5.4%. It's a very uncommon disease to be found in children. It's usually said to be a genetically evolving disorder. The worldwide statistics says it affects one child out of thousand two hundred and fifty children. Children affected with this disorder express symptoms such as fatigue, constipation, coarse dry hairs and skin, weight gain, drowsiness, decreased muscle tone, reduced growth, short stature, delayed puberty, poor mental development, and pallor.[2]

Ayurvedic medicine is one of the oldest traditional medical systems in the world. It originated in India more than 3,000 years ago and aims to prevent disease by keeping the mind, spirit, and body in balance. Today, it's a widely practiced form of alternative medicine. There is no direct context in Ayurveda stating about the disease Hypothyroidism. But its symptoms can be correlated to the diseases like Gandamala explained by Acharya Sushrutha[3] or Galaganda explained by Acharya Charaka.[4] These diseases can be considered under Urdwa Jatrugata vikaras i.e., diseases pertaining to the organs situated in and above the neck. Thyroid gland is one such gland that is situated near the front of neck lying against and around the front of the larynx and trachea. So any disorders pertaining to this gland are considered under Jatrurdhwa Vikara. Galaganda and Gandamala are the diseases of Gala where the vitiation of kapha dosha and medha dhatu. Acharya Sharangadhara on Dipika commentary said Karkundu that is Shringalakoli, Bhrihatbadara and Amalaki samana shotha formed in gala pradesha and looks like garland is nothing but Gandamala.[5] Acharya Madhavakara

explained manifestation of small or big Andakoshakara shotha in galapradesha is said to be Galaganda.[6]

The major function of the thyroid gland is to act as a spark for the maintenance of oxidative metabolism in most tissues. In Ayurveda parlance, this is attributed as the function of agni (system related to metabolism). As far as the management of hypothyroidism through Ayurveda is concerned, hormonal replacement is not possible through drugs. However, one can interpret the pathogenesis of hypothyroidism in the context of Ayurveda, in which role of agni is foremost and through its management; wholesome normal activity of the thyroid gland may be achieved. Srotoshodhana, agnideepana, pachana and vatanulomana are the main principles of treatment. Along with that, Acharyas also mentioned shirovirechana or nasya karma as the prime modality to treat these disorders.

The plant Bauhivia variegata is called Kachnara in Hindi, commonly known as Rakta Kanchan in Sanskrit and Mountain Ebony in English. It was planted in garden, park and roadsides as ornamental plant in many warm temperate and subtropical regions. It was native to Southeast Asia and grows in tropical and subtropical climate. The various parts of the plant viz., flower buds, flowers, stem, stem bark, leaves, seeds and roots are practiced in various indigenous systems of medicine for the cure of variety of ailments. It is considered best for treating diseases of lymphatic system and glands.

In Ayurveda Kanchanara is mentioned as drug of choice in Granthi roga. But in Bruhattrayis there is no mentioning of Kanchanara but instead Acharya Charaka has mentioned its two of the varieties i.e, Kovidara and Karbudara in Vamanopaga gana[7] where as Acharya Sushrutha has mentioned the same in urdwa bhagarahara dravya.[8] According to Ayurveda it is kashaya rasa pradhana dravya and has laghu, rooksha in nature. It is katu vipaka and sheeta in veerya. By its prabhava it is gandamala nashaka.[9] Today different species of Bauhinia are used as Kanchanara which belongs to Caesalpinaceae family. Ayurvedic clinical practice, Kanchnar guggulu and Triphaladya guggulu are commonly used in the treatment of Hypothyroidism.[10] Both the formulations comprises Kanchanara twak as one of the ingredients. Maximum references say about the use of bark and flower in different forms like decoction, powder, for alleviating various diseases. References' regarding utility of Kanchanara leaves in treatment is rarely available. Use of Kanchanara patra svarasa in the form nasya as well as internal administration is a folklore practice. The nasal administration of medication is called nasya. It is particularly useful in the diseases of pertaining to supra clavicular region, but indirectly helps to improve the functioning of endocrine glands and nervous system. Nasya aushadha reaches the brain via nasal route and acts on higher center of brain controlling different neurological, endocrinal and circulatory functions and thus showing local and systemic effects. To explore the action of this kind of treatment in Hypothyroidism, an attempt was made in our hospital on a child suffering from same.

## AIMS AND OBJECTIVES

1. To analyze the therapeutic efficacy of Kanchanara patra swarasa pana and nasya in Hypothyroidism.

### Medical history

A 7 year old female patient visited OPD of Department of Shalakya Tantra at SDMIAH, Bengaluru on 23/12/2019 with complaints of weight gain, puffiness in the face, hair loss, laziness, constipation and loss of interest in day to day activities since 15 days. Her laboratory investigation showed increased levels of TSH and was diagnosed with Hypothyroidism and was on modern medications for the same i.e., Thyroxin 100mcg since 10 days. Her laboratory reports were mentioned in table no.1

**Table No. 1: Initial Laboratory reports of the patient with date.**

| Date | Laboratory Investigation | Results |
|---|---|---|
| 14/12/2019 | TSH | Above 450µIU/ml |
| | $T_3$ | 56.72ng/dL |
| | $T_4$ | 0.98µg/dL |
| | Anti TPO Antibodies | 262.0 IU/ML |

### Therapeutic Focus

The treatment arranged accordingly

1. Course of Nasya Karma with Kanchanara patra swarasa two drops to each nostril after mukhabhyanga with Asanabilvadi taila and sthanika tapa sweda for 7 days in empty stomach at 8.00am in the morning
2. Kanchanara Swarasa Paana 10ml twice in a day in empty stomach.
3. Arogyavardhini Rasa 1 tablet thrice in a day after food.
4. Kumariyasava 10ml twice daily after food with equal water.

## RESULTS

There was significant decrease in the levels of TSH and Anti TPO Antibodies and increase in the levels of $T_4$ (Table.No.2)

**Table No. 2: Laboratory reports of the patient after treatment with date.**

| Date | Laboratory Investigation | Results |
|---|---|---|
| 25/12/2019 | TSH | 3.52µIU/ml |
| | $T_3$ | 2.36ng/dL |
| | $T_4$ | 15.2µg/dL |
| 27/12/2019 | Anti TPO Antibodies | 24.56IU/ML |
| | TSH | 2.27 µIU/ml |
| | $T_3$ | 2.11ng/dL |
| | $T_4$ | 15.63 µg/dL |

Thyroxin dosage was reduced to 50mcg on 25/12/2019 and was gradually discontinued after 3 days. All the signs and symptoms were recovered to the normalcy there after. Patient was advised to follow the oral medication for 15 more days and then asked for the follow up.

## DISCUSSION

Hypothyroidism is a burning issue, and the present treatment is not helping much in resolving the underlying pathology. In hypothyroidism, etiological factors mainly vitiate Tridosha. The Kapha dosha and Vata dosha vruddhi is elicited and Pitta dosha kshaya is seen. Agni represented by Pitta in the body which brings about good or bad effects according to its normal or abnormal state. This Pitta kshaya invites derangement of jatharagni, ultimately leading to the derangement of dhatvagni and subsequent appearance of ama. This ama obstructs the srotas in the body thereby afflicting as dhatu to which these srotas deliver, results in symptoms like, loss of strength, feeling of heaviness in the body, inactivity of vata, lassitude, loss of digestive power, more of expectoration, accumulation of wastes, anoexia, exhaustion etc. The conceptual analysis of sympto-matology of hypothyroidism helps us to identify it as kapha pradhana tridoshaja disease with rasa and medo dhatu vitiation predominantly.

Chikitsa of Galaganda is said as "Chardi Virechanam Nasyam Swedo Dhooma Siravyadha Agnikarma Ksharayoga Pralepo Langanani Cha"[11] Nasya Karma is one of the procedures in which instillation of drug is done through the nasal route. Even though it is mainly indicated for the diseases located in supra clavicular region, its indication in other systemic diseases shows if region of head is effected in any disease then nasya should be given there because nose is the only route for the delivery of the drug into the head region. Hypothyroidism being correlated with Galaganda which is pertaining to supra clavicular area caused mainly due to the kapha, nasya karma is considered as best treatment for it.

As per maximum references useful part of Kanchanara is bark and flower. Recent studies mentions the properties of Kanchan leaves as nutritive and anti diabetic. They are used both topically and externally. Leaves contain lupeol, alkaloids, oil, fat, glycoside, phenolics, lignin, saponins, terpenoids, β-sitisterol, tannins, kaempferol-3-glucoside, rutin, quercitin, apigenin, apigenin-7- o-glucoside amides, carbohydrates, reducing sugar, protein, vitamin C, fiber, calcium and phosphorus. Presence of insulin like protein in leaf, stem bark of B. variegata is widely utilized in popular medicine, as an antidiabetic agent. The leaves and stem-bark of Bauhinia used in different phyto preparation to lower blood glucose levels. Aqueous and organic solvent ethanol and hexane extract of Bauhinia in a model of alloxan-induced diabetes in rats caused reduced glucose, triglycerides, total cholesterol and high density lipid (HDL) cholesterol levels. As the bark having thyroid hormone regulating and anti obesity properties, partly leaf may also exhibit same action on the body.[12]

Kanchanara has kashaya rasa, katu vipaka, sheeta veerya, laghu, ruksha properties. Kashaya rasa helps in reducing the sneha guna of kapha. Nasya karma of Kanchanara patra swarasa by virtue of its properties reaches the vessels in the supra clavicular area and circulates in the head and neck area by the help of vyana vata. Due to its kaphagna property it dries up the compact and adhered doshas which are responsible for the obstruction of srotas and helps in the free flow of the dhatu's. The morbid dhatu reaches the nasa and mukha and gets expelled out. Thus brings the doshas to state of equanimity and helps to cure the pathogenesis. Internal administration of same swarasa, reduces obesity by drying the sneha guna of kapha and also due to its laghu ruksha properties. Just 10ml of swarasa is given internally once daily in empty stomach so as to maintain the normalcy of vata dosha. Advanced researches highlight the anti diabetic and anti lipidemic action of kanchanara patra extracts. Gandamala and Galaganda are the diseases mainly related to medovaha srotas indicating medohara property of the drug in terms of dryness.

Katu vipaka of Kanchanara swarasa leads to vata vridhi, rukshata, laguta in the body as well as it also leads to constipation and obstruction to the flow of urine. Its shita and parthiva nature leads to loss of appetite. Combination Arogyavardhani rasa and Kumaryasava along with Kanchanara swarasa pana and nasya helps in relieving side effects resulted from it. Arogyavardhini vati and Kumaryasava both are an excellent digestive formulations, which increases appetite, reduces indigestion, stimulates better absorption of nutrients in the body and hence promotes a healthy digestive system. The laxative nature of these formulations, softens stools and relieves from constipation.

## CONCLUSION

Hypothyroidism can be considered as condition which results due to agni dushti. kapha vata dosha vruddhi and pitta kshaya results due to agnimandya. Dhatwagnimandya especially rasa and medho dhatwagni mandhya contributes to thiscondition. The folk practice of Kanchanara patra swarasa nasya and pana has got significant results in hypothyroidism of children. Combination of Arogyavaerdhani rasa and Kumaryasava helps in correcting adverseeffects caused by Kanchanara svarasa pana. Large sample clinical study may help in exploring statistically significant efficacy.

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