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A RAY OF HOPE TO HYPOTHYROIDISM: A CASE STUDY

[1]B.Rangarajan, [2]N Ashwini, [3]Muralidhara
[1]PG Scholar, Dept., of PG studies in Kayachikitsa,
[2] PG Scholar, Dept., of PG studies in Kayachikitsa,
[3] MD (AYU) Professor, Dept., of PG studies in Kayachikitsa,

ABSTRACT

Background: Hypothyroidism is a common endocrine disorder resulting from deficiency of thyroid hormone. Even though there are no direct references in Ayurvedic classical texts in terms of hyper or hypo production of the hormone by the thyroid gland (*Avatu Granthi* in Sanskrit), but there is a disease by the name *Galaganda,* characterized by neck swelling that can be understood as diseases of Thyroid gland. **Objective:** In this article a single case study is reported who came to OPD with TSH levels of 31.93 UI/ ml where we diagnosed it as Sub- Clinical Hypothyroidism and *Ayurvedic* formulations was used as intervention in treating which aimed at balancing *Tridosha* and improving the metabolism. **Material & Method**: The authentic subject material has been reviewed from Ayurveda & modern medical literature. Different research & review article were searched on internet. **Discussion and conclusion:** The explanation of *Ashta Nindita Purusha* based on *Lakshanas* and concept of *Agni Mandya or medo-dhatvagni mandhyata* can be considered in understanding Hypothyroidism. The incidence of hypothyroidism is increasing day by day, and there is increasing demand to treat the disease through the Ayurveda system of medicine. The root cause of hypothyroidism is disequilibrium of *Tridosha***.**Hence this case study was taken to formulate a effective treatment protocol in case of Sub-clinical Hypothyroidism.

Keywords: *Agni Mandya, Ashta Nindita Purusha, medho-dhatvagni mandyata, Galaganda,* Sub- Clinical Hypothyroidism.

INTRODUCTION: Thyroid problems are among the most common endocrine disorders presently seen worldwide. Hypothyroidism results when the thyroid gland fails to produce enough of the thyroid hormone, due to structural or functional impairment that significantly impairs its output of hormones, this leads to the hypo metabolic state of hypothyroidism. It is estimated to affect between 3.8-4.6% of the general population.[1]

Thyroid Gland-

The thyroid gland secretes thyroid hormones, which control the speed at which the body's chemical functions proceed what is known as metabolic rate. Thyroid hormones influence the metabolic rate in the following ways[2]

- By stimulating almost every tissue in the body to synthesis proteins
- By increasing the amount of intracellular enzymes and oxygenation
- By increasing the size and number of the mitochondria in most cells of the body
- By increasing the active transport of ions through cell membrane

Signs[3]: The signs of hypothyroidism include Dry &coarse skin ,Cool extremities, Myxoedema, Diffuse alopecia, Bradycardia, Peripheral oedema, Delayed tendon reflexes, Carpel Tunnel syndrome and Serous cavity effusions.

Symptoms[4]: The symptoms of hypothyroidism include Tiredness, weakness, Dry skin, Feeling cold, Hair loss, Difficulty in concentrating, Poor memory, Impaired Hearing, Constipation

,Weight gain with poor appetite, Dyspnoea, Hoarse voice, Menorrhagia and Paraesthesia.

Treatment[5] in contemporary science: The modern treatment is hormone replacement therapy by Levothyroxine. The daily replacement is needed ie.1.6µg/Kg body weight (average 100-150µg). Levothyroxine is Synthetic T4 under brand names Levothyroid, Levoxyl, Synthyroid, Tirosint, Unithroid, Thyronorm, Eltroxin, Cytomel, Thyrolar.

Understanding In Ayurveda

There is no one disease mentioned in Ayurveda for direct co-relation of Hypothyroidism. Yet signs and symptoms which we approach in day-to-day clinical practice can be seen in Ayurvedic texts in different manners. In *Charak-Samhita*, eight type of *Nindita Purushas* Viz. *Atidirgha, Atihrusva, Atiloma, Aloma, Atigaura, Atikrishna, Atisthula, Atikrisha*[6] have been discussed which can be taken as functional disorders of endocrine gland.

Concept of *Agni* - *Agni* is responsible for metabolism thus reduction in *Agni*[7] i.e., both *Jataragni* and *Dhatwagni Mandya* can be considered as cause for hypothyroidism. *Acharya Vagbhata* explains *Kapha Vriddhi* as main cause for *Agni Mandya* leading to symptoms such as *Nidra* (Excessive sleep), *Tandra* (Lethargy) and *Gatra Gourava* (Heaviness of body).[8]

The *Avarana* concept i.e., *Kapha Avruta Vata* [9] presenting with *Lakshanas* such as *Shaitya-Shopha-Gurutva* can be considered few symptoms explained under Hypothyroidism.

Galaganda [10,11,12,13] explained by *Acharyas* go in favour of more so over goitre.

CASE STUDY

A moderately built 30 years old female, Hindu by religion, student belonging to the middle socio economic background, complaints of weight gain, tiredness, diffuse hair loss, puffiness of face, occasional irritation and decreased interest in works since 3 months.

Associated C/O - Body pain, inability to concentrate for more than 1 hour, intolerance to cold climates or wind since 2 months.

Family history – All others are said to be healthy (no contributing factors)

Rajo Vruttanta – LMP- 04/07/2018

M.C - 3-4 / 28 – 3- days

Findings during history taking and examination

- Pallor
- Non pitting edema of extremities
- Puffiness of face
- Dull facial expression
- Loss of scalp hair
- Weight gain of 10 kg
- Hoarseness of voice
- Constipation
- Lethargy

O/E:

The general examination of patient showed pulse rate of 67/min, respiratory rate of 20/min, blood pressure of 140/80mm of Hg & body weight of 72kg with BMI – 28.1 kg/m^2

Patient had *Vata- Kapha prakriti* with *Avar sara, Avara samhanana, Avara satmya, Madhayam satva, Madhyam vyayamshakti* (optimal capability to carry on physical activities), *Madhyam aharshakti and Jaranshakti* (medium food intake and digestive power). Weight was 72 kg, height was 160 cm.

Systemic evaluation:

Her Higher mental function, mental state and speech were normal. Neurological, skin, cardio respiratory, per abdomen and genitourinary system examination were normal.

L/E: No features of goitre or thyrotoxicosis, thyroid gland – Normal isthmus , nodules absent.

Subjective parameter considered for assessment in this case are-

- Fatigue
- Overweight
- Constipation
- Hair loss
- Myxedema
- Depression

Objective parameter considered for assessment in this case are-

- HB
- T3
- T4
- TSH

SAMPRAPTHI

Hetu Sevan

⇩

Kapha (Kledak) & VataPrakop Prana(Swas), Udan (Urdhwajatrugatvikar)

⇩

Saman(Agnimandya) Vyan (Sarvadehavyapi Vikar) Apan (Vibandha)

⇩

Agnimandya (Saman Vayu Dusti)

⇩

Aama

⇩

Srotorodha (Swedakshay)

⇩

Vitiated Vata (Udan) takes the Dushta Kapha to Galapradesh

⇩

(Hrutpida,Rukashata,Shabda Asahishnuta)

⇩

Galapradesh Khavaigunya

⇩

Galapradesh SthanSanshray

⇩

Dhatwagnimandya

⇩

Rasa Dhatu vikruti (Sandhishaithilya, Shrama,Asamyak Kayika, Vachik, Mansik Kriya)

⇩

Uttarottar Dhatu Vikruti

⇩

Ojo Vyapat (Dushti)

⇩

Hypothyroidism

SAMPRAPTHI GHATAKA

Dosha: Kapha, Vata
Dushya: Rasa, Meda (predominantly)
Agni: Jatharagni, Dhatvagni
Ama: Jatharagni mandya Janita, Dhatvagnimandya Janita
Srotas: Rasavaha Srotas and Medovaha Srotas predominantly
Srotodusti: Sanga, Vimarga – Gamana
Adhisthana: Sarva Shareera
Udbhavasthana: Amashaya
Prasara: Rasayanis
Vyaktasthana: Sharira
Rogamarga: Bahya

Investigations:

OBJECTIVE PARAMETERS	*BT*
HB	*9.0 %*
T3	*1.91 nmol/L*
T4	*79.86 nmol/L*
TSH	*31.93 UI/ ml*
TIBC	*487 ug/dl*
RBS	*124 mg/dl*
Free T3	*3.77 pmol/l*
Free T4	*13.83pmol/l*

DIAGNOSIS

- Sub- Clinical Hypothyroidism
- *Kapha -Meda / Kapha Avruta Vata*

Treatment duration - 60 days
Follow-up period- 30 days

- Intervention-For 60 days

TREATMENT PROPOSED

MEDICINE	**JUSTIFICATION**
Cap. Thyronil 1 BD	*Vyadhi Pratyanika Dravya*
Varanadi Kashaya 3 tsf	*Vata- Kapahaja Vyadhi , Gandamala*
Pippali Churna bd 3 gm BD	*Dhatvagni Deepanam*
Tab .Haritaki 2 tab HS AF	*Rukshanam , Vatanulomanam*
Tab. Chitrakadi Vati 2 TID	*Dhatuna Prutakatwam*
Gomutra Arka 20 ml BD with 30 ml hot water	*Lekhana , Rukshana*
Katuki lepa L/A	*Sthanika Shodhana*

- Patient was later changed to *Gandharvahastyadi Taila 15* ML HS AF from Tab. *Haritaki* for next 15 days with above medicines acting as *snigdha virechana.*

Observation during treatment

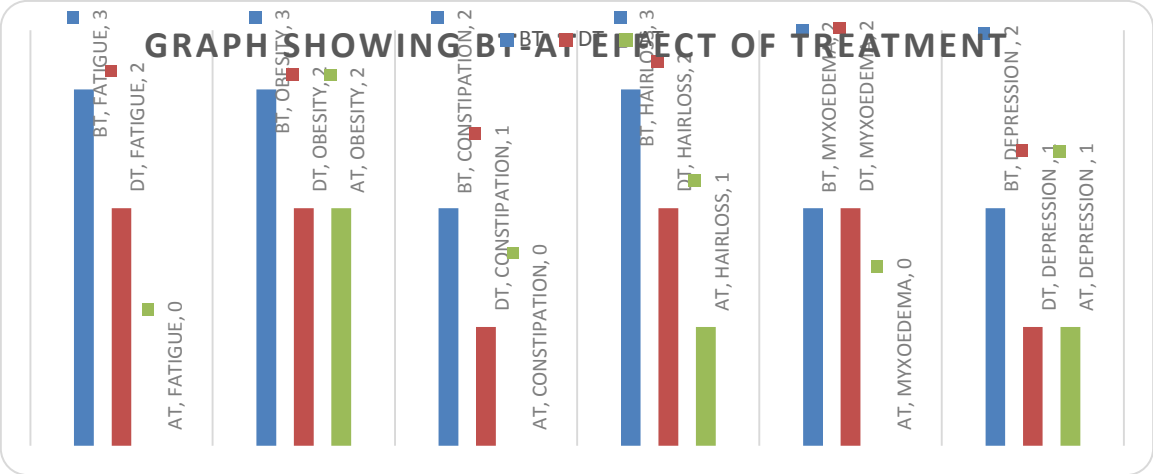
- Moderate improvement seen in all the subjective parameters considered.
- Objective parameters

Objective parameters	**BT**	**DT(after 60 days)**
HB	9.0 %	10.0 %
T3	1.91 nmol/L	1.51 nmol/L
T4	79.86 nmol/L	80.24 nmol/L

TSH	31.93 UI/ ml	9.68 UI/ ml

OUTCOME-

- The study was conducted for 90 days and patient had marked improvement seen in all the subjective parameters considered.
- At follow up after 30 days – Patient had increase in the symptoms of hair loss, depression marginally.



PARAMAETERS	BT	AT (after 90 days)
HB	9.0 %	9.7 %
T3	1.91 nmol/L	2.20 nmol/L
T4	79.86 nmol/L	99.66nmol/L
TSH	31.93 UI/ ml	0.66 UI/ ml

DISCUSSION: The *Agni* is essential for metabolic activity of the body as well as physical & mental growth and maturation. Ayurveda advocates that the equilibrium state of *'Agni' i.e. 'samagni'* consist of healthy person. Wherever the 'Agni' disturbed by its Hypo or Hyper function it leads to disorder. Agni is the chief factor which is directly related with all basic pathogenesis. Hypothyroidism is a disorder of hypofunction of Agni specially *'Dhatwagni'* which leads to formation of *Ama.* The symptoms of *Aamavastha are Agnimandhya, Shrotorodha, Gaurava, Alasya, Balanasha, Apakti, Aruchi, Vataprakopa, Klama.* When we closely analyze the signs & symptoms of primary Hypothyroidism it seems that chronic hypo function of *jatharagni* means *Aamavastha*. So, hypothyroidism can be considered as stage of *Agnimandya* resulting in the formation of *Ama*. So, in the line of treatment main target is to treat these *Doshas,* remove *the Sroto Avarodha* particularly in *Rasavaha, Medovaha, Manovaha Srotas.*

Mode of action of treatment:

- Cap.Thyronil – It is a proprietary patent medicine of Ajmera pharmacy contains *Kanchanara, Guggulu, vibhitaki, karjura, Vacha, Varuna, Rakta Chandan, Haritaki, Mulethi, shunti, Patherchur, Behman surkh, Ashwagandha and Bala*[14].

Studies prove that Thyronil capsules possess wide range of herbs which improve thyroid health and protect its functions from getting affected by other factors. These herbal thyroid supplements possess herbs which maintain healthy hypothalamic-pituitary-thyroid axis, overt

release of TSH hormone by pituitary gland or lesser secretion of TSH can make thyroid over or underactive, by providing healthy balance between all three glands these pills prevent and treat condition of hypo or hyperthyroidism effectively.

- *Vranadi kashaya*[15]- *Varanadi kashaya* is used in *Vata kaphaja* disorder and it is also very well indicated in *Gandmala*.
- *Pippali churna* - *Pippali* (Piper longum Linn) increases the absorption of selenium which is required for the chemical reaction that converts the less active T4 to more active T3 [16- 18]
- *Chitrakadi bati* - the purpose of *deepan* (appetizer) and *pachana* (digestive), thus eliminating the root cause of the disease. In hypothyroidism, correcting the *agni* (digestive fire) only at the thyroid level is not sufficient but removing the peripheral resistance is also important i.e removing the *avarana* (blocking or covering) at the *dhatwagni* (metabolism at tissue level) level.
- *Haritaki – Ruksha vatanulomaka*
- *Gomutra arka – lekhana, teekshna, rukshana, kapha- medohara.*
- *Katuki lepa – tikta rasa, laghu, ruksha guna, sheeta veerya,* anti-inflammatory properties reduces kapha-pitta dosha and enhances metabolism.

Hence with above drugs initially *kapha-meda avarana* was removed and then *Agni* was improved by with metabolism was corrected by virtue of which harmones are regulated.

CONCLUSION:

- Hypothyroidism is more common in women than men, probably because hormonal imbalance acts as a trigger for thyroid problems.
- Women's bodies have a delicate balance of hormones such as oestrogen and progesterone, which can be upset when the body is under stress and not receiving enough support; and also oestrogens increases the concentration of Thyroxine Binding Globulins and of total T_3 and T_4 levels.
- The research indicates that if a patient is willing to reduce their stress through lifestyle changes and take key therapeutic herbs, healing from this chronic disease seems possible.
- Hence even though an exact co-relation is not possible thus the *Dosha* involved and understanding the *Samprapthi* will be helpful in treating the condition.
- Hypothyroidism can be considered as condition which results due to *Kapha Vata Dosha Vruddhi (increase) and Pitta Kshaya (decrease)* which results due to *Agnimandya (indigestion). Dhatwagnimandya* (slow metabolism at tissue level) especially *Medas Dhatwagni Mandya* contributes to this condition.
- Drugs used for normalizing kapha vata vriddhi janya dhatwagni mandya prove to be helpful in this condition.
- It is important to validate these findings using a larger sample and suitable research design.

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Corresponding Author:

Dr. Dr.Rangarajan B

Final PG Scholar, Dept., of PG studies in Kayachikitsa, SKAMCH& RC, Vijayanagar, Bengaluru, and Karnataka, India.

Email id: rangarajan1991@gmail.com

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