INTRODUCTION

Thyroid gland is one of the important and sensitive endocrine glands. The major function of thyroid gland is to control the rate of metabolism. These functions can be said to be similar to the functions of Agni. Hypothyroidism results from inadequate production of thyroid hormone. There is no direct mention of thyroid gland in Ayurveda, but disease by the name Galaganda is mentioned in Ayurvedic samhitas. Hypothyroidism has many symptoms related to many systems of the body. So it is better not to restrict comparison of hypothyroidism to Galaganda only. As Kapha Dosha is predominant in Urdhvajatrugata pradesh and ura is the Sthana for Udana Vayu, vitiated Kapha obstructs the Gati of Udana and it leads to Kaphavritta Udana and shows symptoms of Kaphavritta Udana viz. difficulty in speech and voice (Vaksvara Graha), heaviness of body (Guru Gatrata), debility (Daurbalya), discoloration (Vaivarnya) and anorexia which are similar to the symptoms of hypothyroidism. It is observed that there are some symptoms of vitiated Vata Dosha in hypothyroidism but as no Vata Dosha vitiating Hetu is seen in the present study it can be concluded that the Dushti of Vata Dosha may be due to Avarana of Vata by vitiated Kapha. After review of literature regarding avritta vata we found that the symptoms of Kaphavritta Udana and hypothyroidism are similar hence the Samprapti (pathogenesis) of hypothyroidism has been explained in the terms of Avritta Vata.

Keywords: Hypothyroidism, Galganda, Avarana, Avritta vata, Kaphavritta udan, samprapti.
Ayurvedic principles which can aptly explain the Samprapti of hypothyroidism with an Ayurvedic perspective. This shall definitely help to shed light on not only diagnosis but also the prognosis as well as help formulate the guidelines for the treatment of hypothyroidism in Ayurveda.

AIM & OBJECTIVES

AIM
To study and elaborate the Nidan panchak of an Anukta vyadhi hypothyroidism with an Ayurvedic perspective

OBJECTIVES
To study Samprapti of hypothyroidism so that it might be helpful to treat the patients according to Ayurvedic principles.

MATERIALS AND METHODS
Study was conducted in two phases.

1. Conceptual
2. Clinical

1. CONCEPTUAL
a) Literary review
1) All the references of hypothyroidism were studied from modern medical text books and related web sites.
2) The Samprapti of an Anukta vyadhi hypothyroidism is attempted according to Ayurvedic principles.

HYPOTHYROIDISM AND AGNI

Normalcy of Agni is a definite prerequisite for rhythmic body functions. Majority of the body’s metabolic activity is controlled by thyroid hormones according to modern medicine and through Jatharagni, Bhutagni and Dhatvagni according to Ayurveda. Hence the cause of alteration in metabolic activity according to Ayurveda, is by vitiation of dhatvagni.\cite{3}

This vitiation can occur in two ways – when Jatharagni gets impaired, on one hand, its moieties which are distributed to Dhatvagnis get impaired disturbing the status of Dhatvagnis too, while, on the other hand, this Jatharagnimandya leads to formation of Ama (undigested moieties) which in turn causes Srotorodha.\cite{4}

Due to above pathological sequences, vitiated rasa Dhatu is formed causing impairment of other Dhatus too and thus, a chain of pathological events is initiated. Jatharagni mandya can be corrected at an earlier state but once the vitiation of Dhatvagnis is set in, it cannot be rectified easily.

GALAGANDA

Galaganda has been defined as the swelling, big or small, which hangs like scrotum in the neck. Charaka attributes Galaganda only to vitiated kapha dosha\cite{5} but Sushruta and Vagbhata describe three types of Galaganda.

AVRITTA VATA

The term Avarana implies, to cover, to mask or to obstruct. Here Gati is unique feature of Vata, whenever its Gati is disturbed due to Avarana then its vitiation occurs.

2. CLINICAL STUDY DESIGN

1) Patients were selected irrespective of age, sex caste, religion, social status etc.
2) Total number of 30 patients aged above 18 years diagnosed as hypothyroidism by TFT (Thyroid Function Test) was selected.
3) Valid written informed consent was taken from each patient prior to case taking.
4) Detail case of the patients was taken with the help of a specially designed case paper to find out the Hetus, Purvaroopa, Roopa of hypothyroidism.
5) Further with the help of above data, Samprapti of hypothyroidism was established on the Ayurvedic basic principles.

SELECTION OF PATIENTS

1. INCLUSION CRITERIA
1) Patients in age group: 18 years and above suffering from hypothyroidism.
2) Patients of both the gender.
3) All the patients from OPD/IPD who have already been diagnosed as hypothyroidism by pathological investigations viz. TFT

II. EXCLUSION CRITERIA
1) Patients below 18 years.
2) All the patients suffering from heart disease, any major illness like cancer, TB, AIDS and pregnant women.

CRITERIA FOR ASSESSMENT:
Dosha, dushya, dhatu, mala, Ama, agni, ashaya, avayava, strotas pariksha, strotodushti, dushti prakara, vyadhinarga, utpattisthana, vyaktisthana, sadhyasadhya火车, vyadhishwarupa, adhishthana, avarana, ashayapakarshaka gati, and dheedhruvi-smruti

Nidan panchak:- Hetu, purvaroopa, roopa, upashay/anupashay and samprapti.

HYPOTHYROIDISM - In hypothyroidism there is decrease in level of T3 and T4 and increase in level of TSH. Normal values of thyroid hormones in adults are:[6]

T3: 86 -187 ng/dL
T4: 4.5-12.5 ug/dL
TSH: 0.3-5. UIU/mL

NIDAN
Adhyatmika vyadhi hetus are:
1. Adibala pravrita hetu- This nidana is found in patients of congenital hypothyroidism.
2. Jannabala pravrita hetu- Here jada (mandabuddhi) can be correlated with the condition of cretinism in young children.
3. Doshabala pravrita hetu- Ama dosha acts as the basic factor for the occurrence of hypothyroidism. Secondly nidana can be discussed as vyadhi hetu and dosha hetu.
   a. Vyadhi hetu: Improper functioning of avatu (thyroid gland) is taken as vishesh hetu.
   b. Doshha hetu: This includes the factors which cause pitta kshaya and kapha vrid-dhi, jatharagnimandya and formation of Ama dosha. It can be classified as a) aharaja hetu (dietary causes) b) viharaja hetu (causes related with life style) c) manasika hetu (psychological factors).[7]

Kaphavrita udana – As kapha dosha is predominant in urdhvajatriyugara pradesh and ura is the sthana for udana vayu, vitiated kapha obstructs the gati of udana and it leads to kaphavrittudana and shows symptoms of kaphavrita udana viz. difficulty in speech and voice (vakṣvara graha), heaviness of body (guru gatrata), debility (daurbalya), discoloration (vaivar-ya) and anorexia which are similar to the symptoms of hypothyroidism.[8]

Ojovyapat —The symptoms of ojovyapat like sthabdhaugratra, vatajashotha, varnabheda, glani, tandra, nidradhikya are also observed in these patients of hypothyroidism.[9]

Samprapti is defined as the manner in which the doshas are vitiated and traverse through the body and produce the disease.[10] Madhura, sheeta, guru, abhishandhyadi ahara and divaswaap, avyayam like vihara cause vitiation of kapha dosha. This vitiated kapha dosha is responsible for samprapti (aetiopathogenesis) of hypothyroidism in following different perspectives.
1. Kledaka kapha vikruti
2. Jatharagnimandya -Formation of Ama
3. Sthansanshraya at galapradesha
4. Kaphavrita udana
5. Rasavaha and medovaha strotas dushti

This avarana also impairs the normal function of udan vayu like praya-tna, urja etc. Thus in hypothyroidism there may not be a direct dushti of vata dosha but as vata gets avrutta by vitiated kapha it causes pathogenesis and shows symptoms of kaphavrita udana.

All these above different pathogenesis collectively results in the disease called hypothyroidism.
1. Symptoms of Ama

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Symptoms of Ama</th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Balabhramsha (Loss of strength)</td>
<td>22</td>
<td>73.33</td>
</tr>
<tr>
<td>2.</td>
<td>Gaurava (Heaviness in the body)</td>
<td>20</td>
<td>66.66</td>
</tr>
<tr>
<td>3.</td>
<td>Anil mudhata (Delayed tendon reflexes or</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>decreased bowel sound)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Alasya (Lassitude)</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>5.</td>
<td>Apakti (Improper Digestion)</td>
<td>20</td>
<td>66.66</td>
</tr>
<tr>
<td>6.</td>
<td>Nishtivana (Spit Out)</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>7.</td>
<td>Mala sanga (Constipation)</td>
<td>13</td>
<td>43.33</td>
</tr>
<tr>
<td>8.</td>
<td>Aruchi (dysgeusia)</td>
<td>13</td>
<td>43.33</td>
</tr>
<tr>
<td>9.</td>
<td>Klama (Tiredness)</td>
<td>19</td>
<td>63.33</td>
</tr>
</tbody>
</table>

2. Symptoms of Ojovyapat

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Symptoms of ojovyapat</th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Stabdhata (stiffness)</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>2.</td>
<td>Gurugatrata (heaviness in the body)</td>
<td>20</td>
<td>66.66</td>
</tr>
<tr>
<td>3.</td>
<td>Vataja shotha (oedema)</td>
<td>09</td>
<td>30</td>
</tr>
<tr>
<td>4.</td>
<td>Varna bheda (discoloration of skin)</td>
<td>14</td>
<td>46.66</td>
</tr>
<tr>
<td>5.</td>
<td>Glani (fatigaibility)</td>
<td>22</td>
<td>73.33</td>
</tr>
<tr>
<td>6.</td>
<td>Tandra (drowsiness)</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>7.</td>
<td>Nidra (sleepiness)</td>
<td>19</td>
<td>63.33</td>
</tr>
</tbody>
</table>

3. Symptoms of kaphavritta udana

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Symptoms of kaphavritta udana</th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Vaksvara graha (difficulty in speech and voice)</td>
<td>03</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Guru gatrata (heaviness of body)</td>
<td>20</td>
<td>66.66</td>
</tr>
<tr>
<td>3.</td>
<td>Daurbalya (weakness)</td>
<td>22</td>
<td>73.33</td>
</tr>
<tr>
<td>4.</td>
<td>Vaivarnya (discoloration)</td>
<td>14</td>
<td>46.66</td>
</tr>
<tr>
<td>5.</td>
<td>Annanabhilasha (Anorexia)</td>
<td>20</td>
<td>66.66</td>
</tr>
</tbody>
</table>

4. Symptoms of Rasa dhatu dushti

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Symptoms of Rasa dhatu dushti</th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ashraddha</td>
<td>06</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Aruchi (dysgeusia)</td>
<td>13</td>
<td>43.33</td>
</tr>
<tr>
<td>3.</td>
<td>Arasadnyata (loss of taste)</td>
<td>02</td>
<td>6.66</td>
</tr>
<tr>
<td>4.</td>
<td>Hrillas (nausea)</td>
<td>01</td>
<td>3.33</td>
</tr>
<tr>
<td>5.</td>
<td>Gaurava (heaviness in the body)</td>
<td>20</td>
<td>66.66</td>
</tr>
<tr>
<td>6.</td>
<td>Tandra (drowsiness)</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>7.</td>
<td>Angamarda (bodyache)</td>
<td>08</td>
<td>26.66</td>
</tr>
</tbody>
</table>
8. **Jwara** (fever) | 00 | 00
9. **Panduta** (anemia) | 01 | 3.33
10. **Klaibya** (erectile dysfunction) | - | -
11. **Angasada** (debility) | 19 | 63.33
12. **Krushaangata** | 00 | 00
13. **Agnimandya** (loss of appetite) | 20 | 66.66
14. **Valita** | - | -
15. **Palita** (gray hair) | - | -

### 5. Symptoms of Medo dhatu dushti

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Symptoms of <em>medo dhatu dushti</em></th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sthaulya</td>
<td>14</td>
<td>46.66</td>
</tr>
<tr>
<td>2.</td>
<td>Daurabalya</td>
<td>22</td>
<td>73.33</td>
</tr>
<tr>
<td>3.</td>
<td>Tandra</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>4.</td>
<td>Sluggishness</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>5.</td>
<td>Nidradhikya</td>
<td>16</td>
<td>53.33</td>
</tr>
</tbody>
</table>

*Samprapti* of Hypothyroidism with *Ayurved* perspective:

*Samprapti bhanga* of Hypothyroidism with *Ayurved* perspective:
Thus this article will help to formulate the guidelines for the treatment of hypothyroidism in Ayurveda. Here is an attempt to propose the chikitsa sutra. Vaman karma will be useful for shodhan of kapha dosha and administration of kanchanar guggulu, trijata, trikatu and amalaki will be useful for deepana, pachana, medohara, lekhana and karshana karmas.

**DISCUSSION**

Now a day due to advancement in technology and instrumentation it is very easy to diagnose hypothyroidism on the basis of pathological investigations. The modern treatment of hypothyroidism is unsatisfactory and majority of the patients have to take thyroid extract throughout their life. The treatment though effective, has many side effects. In Ayurveda there is no direct mention about hypothyroidism but a disease by the name galganda is mentioned in many samhitas. After studying various causes and symptoms of galaganda we observed that it is grossly inadequate to restrict hypothyroidism to galaganda only; as galaganda is a localised disease while hypothyroidism is a systemic one. The major function of thyroid gland is to control the rate of metabolism which is similar to the function of agni. Hence the dysfunction of agni is the basic cause for the manifestation of this disease. So this article endeavours to put forward the nidan panchanka of hypothyroidism as an anukta vyadhi with an Ayurvedic perspective. This should definitely shed light on the diagnosis, prognosis and help to formulate guidelines for the treatment of hypothyroidism according to principles of Ayurveda.

The signs and symptoms of hypothyroidism depend upon the severity of the disease. Now from the above literature it is clear that metabolic activities of the body is controlled by the thyroid gland which is similar to the functions of jatharagni, bhutagni and dhatwagni. Hence the cause of the disease is alteration in the metabolic activity which according to Ayurveda is nothing but vitiation of dhatwagni. Lastly it is observed that there are some symptoms of vitiated vata dosha in hypothyroidism but as no vata dosha vitiating hetu is seen it can be concluded that the dushti of vata dosha may be due to avarana of vata by vitiated kapha. After review of literature regarding avritta vata we found that the symptoms of kaphavritta udana and hypothyroidism are similar hence the samprapti (pathogenesis) of hypothyroid-
Out of all symptoms of Ama, 73.33% patients showed balabhransha [loss of strength], 66.66% patients showed gaurava [heaviness in the body], 66.66% patients showed apakti [improper digestion]. Out of all symptoms of ojovypat, 73.33% patients showed glani [fatigability], 66.66% patients showed guru gatrata [heaviness in the body]. Out of all symptoms of kaphvrtta udana, 73.33% patients showed daurbalya [weakness], 66.66% patients showed guru gatrata [heaviness in the body] and 66.66% patients agnimandya [anorexia]. Out of all symptoms of rasa dhatudushti, 66.66% patients showed gaurava [heaviness in the body], 66.66% patients showed agnimandya [loss of appetite]. Out of all symptoms of medo dhatudushti 73.33% patients showed daurbalya [weakness].

**CONCLUSION:**

- The patients of hypothyroidism have to take the thyroid extract as a treatment throughout their life.
- In this disease the vitiation of agni not only takes place at jatharagni level but also at dhathwagni level hence long term management is required.
- Though the udbhavasthana of the disease is at galapradesh it cannot be restricted to galganda only.
- Observations highlight that major etiological factors found responsible in the occurrence of the disease in this study was kapha prakopaka araha, vihara.
- Shedding light on the symptomatology of the disease on the basis of Ayurvedic fundamentals it becomes evident that kaphadosha is the chief culprit along with vitiation of vata dosha.
- Basically hypothyroidism can be correlated to vatavadyadhi; especially of ava-ranajanya vata vyadh; wherein udana vayu gets avrrita by kapha dosha. Hence hypothyroidism can be compared to kaphavritta udana.
- Pradhan dosha is kapha dosha and pradhan dushya is rasa dhatu and medo dhatu.
- The udbhavasthana is at galapradesha.
- Adhishthana and vyaktisthana of hypothyroidism is sarva sharir.
- The prognosis of disease is it is a yapya vyadhi.
- The management of hypothyroidism includes treatment of agnimandya, which includes multifactorial approaches i.e nidan parivarajana, use of deepana, pachana drugs and symptomatic treatment.
- The dravyas acting on rasa dhatu and medo dhatu along with the treatment of kaphavritta udana in the management of hypothyroidism may help in samprapti bhanga.
- Finally hypothyroidism may be correlated with kaphavritta udana.

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