

REVIEW STUDY OF DHATWAGNIMANDYA (HYPOTHYROIDISM) AND ITS AYURVEDIC MANAGEMENT

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Article Received on
24 September 2020,

Revised on 15 October 2020,
Accepted on 05 Nov. 2020

DOI: 10.20959/wjpr202015-19232

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ABSTRACT

Hypothyroidism is a condition in which thyroid gland does not make enough thyroid hormones, which decreases the basal metabolic rate. Principal function of the thyroxine is to act as a catalyst for the maintenance of oxidative metabolism. These functions have similarity with the description of *Agni* in *Ayurveda*. All the metabolic processes of the body are under the control of *agni* (*jatharagni*, *bhutagni* & *dhatvagni*). *Dhatwagni* depends on *jatharagni*, so *jatharagnimandya* leads to *dhatwagnimandya*. There is no direct description of hypothyroidism in *Ayurveda* but on the basis of its clinical presentation hypothyroidism can be correlated with *dhatwagnimandya* (*ras and meda dhatwagnimandya*). The modern treatment of hypothyroidism is Levothyroxine but it has side-effects on long term use include

cardiovascular changes, increased frequency of atrial premature beats and, left ventricular hypertrophy and reduced bone density and bone mass.^[1] Thus in order to prevent life-long medication and side effects of synthetic drugs, using traditional and natural substance for treatment of *Dhatwagnimandya* (Hypothyroidism) and includes drugs having *kapha-vata* pacifying *rasa*, *agni deepana*, and *ama pachana*- *gunas*, *lekhan*, *strotoshodhan*, *anulomana* which may help in normalizing the *agni* and level of *pitta* in the body. so the aim of the study is correlation of Hypothyroidism with *Dhatwagnimandya* and providing provable treatment for hypothyroidism in *ayurveda*.

KEYWORDS: Hypothyroidism, *Agnimandya*, *Dhatwagnimandya*, Ayurvedic management.

INTRODUCTION

Hypothyroidism is the disorder of thyroid gland in which there is decreased secretion of thyroid hormones. It is commonly affecting over 1% of general population and about 5% of individuals over 60 years of age.^[2] Women are affected more with 10% prevalence in India in adults and 3% in adult men.^[3] Subclinical hypothyroidism is found in 6–8% of women (10% over the age of 60) and 3% of men.^[4] It is characterized by tiredness, weakness, dry skin, feeling cold, hair loss, constipation, weight gain with poor appetite, dry coarse skin, cool peripheral extremities, puffy face, bradycardia etc.^[5] Treatment of Hypothyroidism is hormone replacement therapy with thyroxine (i.e.T4) habit for life long.

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According to *Ayurveda*, *mandagni* is the root cause for all the disease. *Agni* is unique concept of *Ayurveda* related to *dhatupaka* or metabolism. Sedentary lifestyle leads to aggravation of *kapha dosha*, and *kapha dosha* cause the *jatharagnimandya* with the formation of *ama rasa*, *dhatwagni* depends on *jatharagni*, so *dhatwagnimandya* occur and causes improper formation of *sapta dhatu* starting from *rasa* to *shukra* and improper *dhatu vridhhi* (especially *meda dhatu*). In *dhatwagnimandya* especially *rasa dhatwagnimandya* leads to *sama rasa vridhhi* and over production of *mala* of *rasadhatu* i.e. *mala rupa kaphavridhhi*. Majority of the *nanatmaja roga* of *kapha dosha* can be included as signs and symptoms of hypothyroidism i.e. *Tandra* (Drowsiness), *Atinidra* (Excessive sleep), *Gurgatrata* (Feeling of heaviness), *Aalasya* (Laziness), *Balasaka* (Loss of strength), *Sheetagnita* (Loos of appetite), *Hridayolepa*(feeling of heaviness over chest), *Galganda* (Goitre), *Atisthoulya* (Obesity), *Svetavbhasta*(Pallor)^[7] leading to symptoms of hypothyroidism.

Medodhatwagni is responsible for the nourishment of *medodhatu*. If there is hypofunctioning of *medodhatwagni*, there will be over accumulation of the *medodhatu* (*saamadhatu*), which acts as the basic factor for the manifestations of hypothyroidism occur in the body.

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Symptoms of *medopradoshajavikara* which are *purvaroopa* of *prameha* and *ashtaninditpurusha* it may be correlated with symptom of hypothyroidism like *Aalasya*(fatigue), *Mukhtaalukanthasosha* (dryness of mouth), *Shithilaangta*(lethargy), *Ghanaangta*(weight gain), *Malamkaayachidrapradeshesu* and *Ashtaninditpurusha*

specifically *Atisthula NinditaPurusha* can be correlated with the dysfunction of thyroid gland. So we can correlate the hypothyroidism to *Dhatwagnimandya*.

MODERN REVIEW

Thyroid gland is one of the important gland of the endocrine system and located in the front of neck which produces two hormones Thyroxin (T4) and Triiodothyronine (T3). Reduced production of thyroid hormone is the central feature of the clinical state termed as Hypothyroidism.^[9] Sub Clinical Hypothyroidism is a condition in which serum TSH raised and serum T3 and T4 concentration are at the lower end of the reference range.

TYPES- Primary hypothyroidism-the thyroid gland is primarily at fault.

Secondary hypothyroidism-is the condition the thyroid is normal but the regulating system is abnormal

CAUSE– 1) Primary hypothyroidism

- **NONGOITROUS**
 - Spontaneous atrophy
 - Congenital defects,
 - surgical removal of thyroid gland
- **GOITROUS**
 - Dyshormonogenesis
 - Iodine deficiencies
 - Drug induced–Carbimazole, lithium
 - Hashimotos disease

2) Secondary hypothyroidism

- Hypopituitarism,
- Isolated TSH deficiency,
- Abnormalities of the hypothalamus [neoplasm, encephalitis].^[9]

SYMPTOMS: Clinical presentation depends on the duration and severity of the hypothyroidism. Clinical features are weight gain, cold intolerance, fatigue, somnolence, dry skin, dry hair, constipation, hoarseness, alopecia, bradycardia depression, infertility.^[10]

Treatment

Hypothyroidism requires life-long replacement therapy. Levothyroxine is Drug of choice and most adult patient require a daily dose of 75 to 150 mcg(1.7mcg/kg).^[11] Levothyroxine has a half-life of 7 days so it should always be taken as a single daily dose.^[12] During treatment the patient TSH level must be monitored to ensure that the correct dose is given.

Ayurvedic Review

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Agni itself which is included in *pitta* in the body is responsible for producing wholesome or unwholesome effect in vitiated or non-vitiated states respectively. Such as –digestion – indigestion, vision –non vision, proper degree or improper degree of heat, normal-abnormal complexion, prowess-fear, anger-exhilaration, confusion and clarity.

Pachak, Ranjak, Sadhak, Alochak and *Bhrajak* are five type of *Pittas*, Out of these 5 types *pachak pitta* have an important role in outbreak of *Agnimandya*. The *pachak pitta* is situated in between *Amashaya* and *Pakwashayai* i.e. *Grahani*. It is responsible for *Pachan* and *Vivechan* of *ChaturvidhAnnapan* and hence called as *Pachakagni*.^[14]

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The *agni* which digested food is regarded as the master of all *agnis*, because increase and decrease of other *agnis* (*dhatwagni* and *bhootagni*) depends on the digestive fire.

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rs"ka lknkfrnhflrH;ka /kkrqo`f){k;ksn~Hkko%AA
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Acharya Vagbhata has given direct relation between *Dhatvagni* & *Jatharagni*. All the *dhatu* has their separate *agni* called *dhatvagni* & are part of *jatharagni*. So with *jatharagni*, *dhatvagni* also gets *manda* or *dipta* & causes *dhatu vridhhi* or *kshaya* respectively.

Function of *Agni* and Thyroid Hormones

Functions of <i>Agni</i> ^[17]	Thyroid Hormones Functions ^[18]
<i>Paka</i>	1. Calorigenic action. 2. Regulates metabolism of carbohydrates, proteins & fat.
<i>Bala</i>	Essential for normal activity of skeletal muscles.
<i>Utshaaha</i>	Essential for normal sexual function.
<i>Maatratva Ushma</i>	Induced Thermogenesis.
<i>Kshudha</i>	Increases Secretion and movements of GI tract.
<i>Medha</i>	Increases blood flow to brain
<i>Varna</i>	Necessary factor for Erythropoiesis.

Function of *Dhatwagni* and Thyroid Hormone

<i>Dhatwagni</i>	Functions of <i>Dhatu</i> ^[19]	Thyroid Hormones Functions ^[20]
<i>Rasaagni</i>	<i>Preenana</i>	Metabolites cause vasodilation so blood flow increases.
<i>Raktaagni</i>	<i>Jeevana</i>	Necessary factor for Erythropoiesis.
<i>Mamsaagni</i>	<i>Lepa</i>	Essential for normal activity of skeletal muscles.
<i>Medaagni</i>	<i>Snehana</i>	1. Maintaining the weight of body. 2. Decreases cholesterol, triglyc & triglycerides levels in plasma.
<i>Asthyagni</i>	<i>Dharana</i>	Closure of epiphysis under the influence of thyroxine.
<i>Majjaagni</i>	<i>Purana</i>	Stimulating factor for central nervous system.
<i>Shukraagni</i>	<i>Garbhotpadana</i>	Essential for normal sexualfunction

These functions of thyroid hormone have some similarity with the description of *Agni* in *Ayurveda*. All the metabolic processes of the body are under the control of *jatharagni*, and *dhatvagni* as per *Ayurveda*. If there is hypofunctioning of *agni* which acts as the basic factor for the manifestations of hypothyroidism occur in the body. So hypothyroidism can be considered as *Dhatwagnimandya*.

RUPA

1. *Nanatmaja Roga of Kapha Dosha* can be included as a signs and symptoms of Hypothyroidism i.e.

<i>Nanatmaja Roga of Kapha Dosha</i> ^[21]	Signs And Symptoms Of Hypothyroidism ^[22]
<i>Tandra</i>	Somnolence
<i>Atinidra</i>	Excessive Sleep*
<i>Hridayolepa</i>	Pericardial Effusion
<i>Gurgatrata</i>	Heaviness In Body*
<i>Aalasya</i>	Laziness
<i>Balasaka</i>	Weakness*
<i>Apachana</i>	Indigestion
<i>Galganda</i>	Goiter
<i>Atisthula</i>	Weight Gain*
<i>Svetavbhasta</i>	Pale Skin Color*
<i>Kanthoplepsh</i>	Serous Fluid Accumulation around Vocal Cord

2. (I) *Rasa dhatu pradoshajvyadhi*

Dushti of *Rasa dhatu* plays a major role in pathogenesis. Many of *Rasa dhatugata vikaras* which have been mentioned in *samhita* are similar to the clinical features of hypothyroidism i.e.

S.no	Dhatu	Symptoms	Symptoms in hypothyroidism ^[24]
1.	<i>Rasa dhatu dusti</i> ^[23]	<i>Ashraddha, Aruchi, Aasyavairasya, Arasadnyata, Pandutva, Palita, Agni nasha.</i>	Poor appetite Pallor, Graying hairs Reduced food intake

(ii) *Rasa Dhatu vridhhi*

S.no	Dhatu vridhhi	Symptoms	Symptoms of hypothyroidism ^[26]
1	<i>Rasa vridhhi lakshan</i> ^[25]	<i>Agnisada, Alasya, Shaitya, Shwasa, Gaurav</i>	Poor appetite* Lethargy Cold intolerance* Dyspnoea* Weight gain*

3.(i) *Meda pradoshaj vyadhi*: Symptoms of *medopradoshajavikara* which are *purvarooopa* of *prameha* and *ashtaninditpurusha* it may be correlated with symptom of hypothyroidism like *purvarooopa* of *prameha*^[27]-*Aalasya*(fatigue), *shithilaangta*(lethargy), *ghanaangta*(weight gain), and *Ashtaninditpurusha* specifically *Atisthula lakshan* mentioned by *Acharya Charak* in *Ashtauninditiya* chapter can be correlated with hypothyroidism.

S.no	Lakshan of meda pradoshaj vyadhi ^[28]	Hypothyroidism signs and symptoms ^[29]
1.	Java uparodh	Tiredness
2.	Kruchhra vyavayata	Loss of libido
3.	Daurbalya	Weakness

(ii) Meda dhatu vridhi

S.no	Dhatu vridhi	Symptoms	Hypothyroidism singh and symptom ^[31]
1	Meda vridhi lakshan ^[30]	Shrama Alpa chestita shwasam Sphiklambanam(buttock) Stan lambanam(breasts) Udarlambanam(abdomen)	Tiredness Dyspnoea on exertion Drooping of buttocks, chest and abdomen

In Dhatwagnimaya lakshan we have include kapha dusti, ras dhatu dusti and medadhatu dusti lakshan because kapha and meda has sadharmi and Ashrayaashrayee bhava kapha is also leads to vitiation of ras and meda dhatu there for all these above mention laksna of dhatwangimandya is kapha dosha predominat.

SAMPRAPTI GHATAK

Dosha: Kapha vridhi associated with Pitta (agni) Dushti and Vata vridhi

Dushya: all dhatu Rasa and Meda(predominantly)

Agni: Jatharagnimandya, Dhatvagnimandya

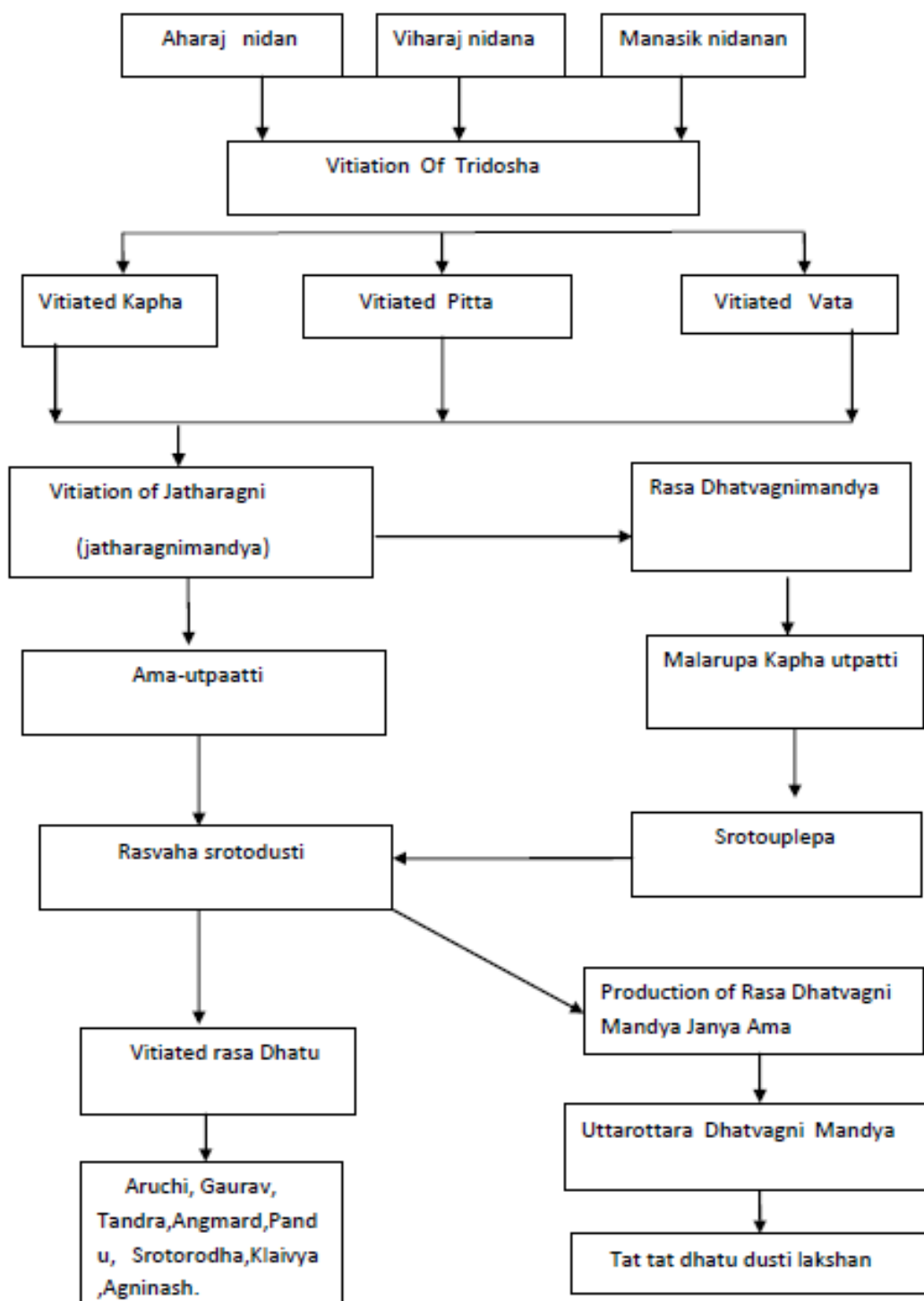
Ama: Jatharagni mandya Janita, Dhatvagnimandya Janita

Srotas: Rasavaha Srotas and Medovaha Srotas predominantly

Srotodusti: Sanga,

Adhisthana: Whole body

Udbhavasthana: Amashay



TREATMENT

Nidana parivarjana

Samshodhana Chikitsa

Vamana:-Pravridha, Bahu Dosha^[32], Ayurveda mentioned shodhana chikitsa. In hypothyroidism dominance of Kapha Dosha and Vamana Karma is best line of treatment for

the *Kapha Dosha*^[33] for curing disease amongst *Shodhana Chikitsa*, thus it may be effective for the patients of hypothyroidism.

Virechana:- can also be used if *shotha* is dominant feature.

Niruha Basti:- should be administered for proper evacuation of bowel and to regularize *Agni*.

Lekhana Basti:-also given in *medovridhi* conditions.^[34]

Samshamana Chikitsa

According to *Ayurveda*, the root cause of hypothyroidism is *Dhatwagnimandya* along with *kapha vata vridhi* and *pitta (agni) dusti*. So the drugs having *Deepana*, *Pachana*, *Lekhan*, *Strotoshodhan*, *Anulomana* and *Kaphashamaka* which may help in normalizing *kapha vata vridhi* *hijaynya Dhatwagnimandya*.

Commonly used drugs are *kanchanar*, *guggulu*, *varuna*, *panchkola*, *triphala*, *punarnava*, *pippali trikatu* ect.

ASANA AND PRANAYAMA

Asana: *Sarvangasana* is the most effective asana for the thyroid gland disorders. *Matsyasana*, *Halasana*, *Dhanurasan* are also found to be helpful in Hypothyroidism.^[35] This *asanas* compress and stretch the throat area and stimulate the blood flow, which provides nourishment to the cells and helps the thyroid to do its work properly.

Pranayama: The most effective *Pranayama* for thyroid problems is “*Ujjayi*”. It acts on the throat area and has relaxing and stimulating effects. *Anuloma-Viloma* and *Kapalbhati Pranayama* is useful in increasing the metabolic rate of the body.^[36]

Pathyaapathya

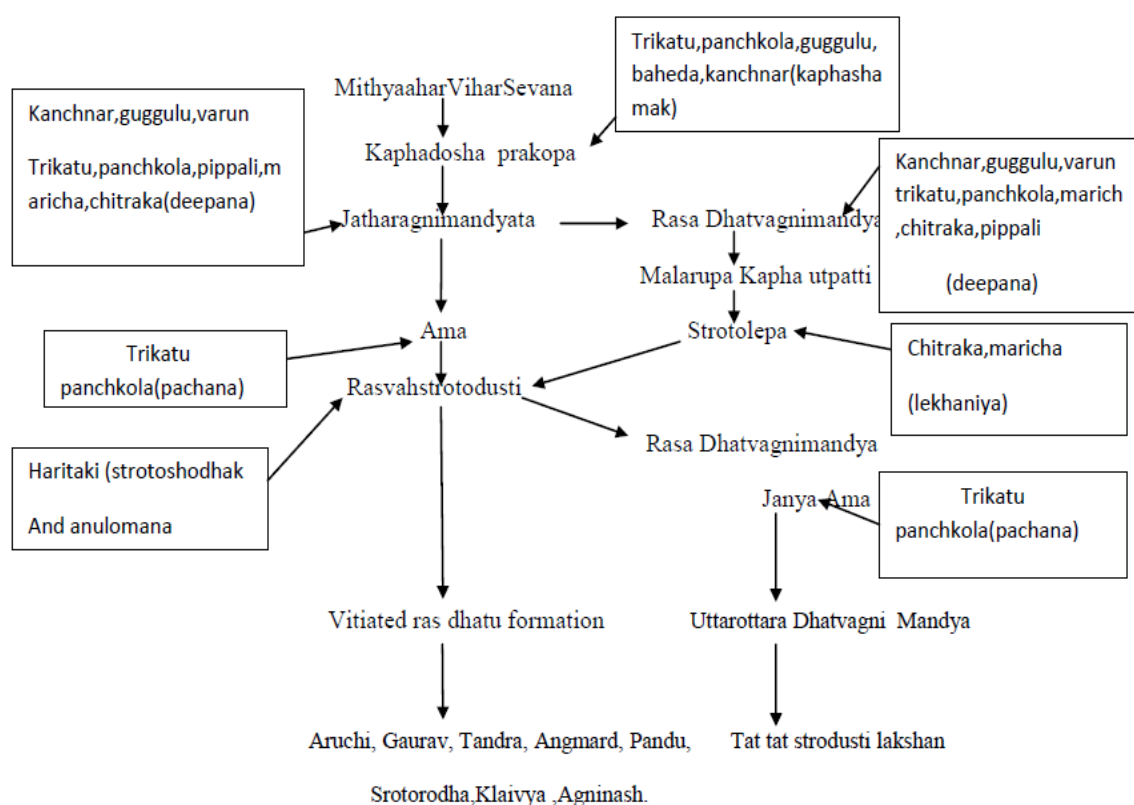
Pathya	Apathya
<ul style="list-style-type: none"> Ahara: <i>Kaphahara Ahara</i> like <i>Yava</i>, <i>chana</i>, <i>mung</i>, <i>shali</i>, <i>shashtik</i>, <i>kulthi</i>, <i>trindhanya</i> and vegetables like bitter gourd, <i>Sarshapa</i>, pointed gourd, garlic, and spices, like <i>Shunthi</i>, <i>Jeeraka</i> and <i>Trikatu</i>, buttermilk, <i>Ushna Jala</i>, <i>madhu</i>. Vihara: Regular exercises, <i>Yogasanas</i>, <i>Pranayama</i> like <i>Surya Bhedana</i>, <i>Kapalbhati</i> etc 	<ul style="list-style-type: none"> Ahara: fast food and fried preparation, refined foods such as white flour, black gram, peas, potatoes, curd, milk, fermented and bakery items. Vihara: Sedentary life style, day sleep, munching

DISCUSSION: Efficacy of drugs depends upon its *ras guna veerya vipaka* and *prabhava*.

Anagnimandya is a root cause of all disease, it's leads to *jatharagnimandya* then *dhatwagnimandya* especially *ras* and *med dhatwagnimandya* there for *durgs* have *deepana pachana* drugs are should be used.

Agnimandya leads to formation of *ama* and occur *srtotodusti* especially *ras* and *medvah shtrotodusti* there for *pachana*, *strotoshodhan* and *anuloman* drugs are used.

kapha dosha plays major role in the manifestaion of disease, there for drug with *katu*, *tikta kashaya rasa lekhan*, *rukshan guna*, *strotoshodhan*, *kaphashamak* properties are used.



CONCLUSION

From above discussion it is concluded that, *dhatwagni* depends on *jatharagni*, so *jatharagnimandya* leads to *Dhatwagnimandya*. *Dhatwagnimandya* causes improper formation of *sapta dhatu* starting from *rasa* to *shukra*, It leads to improper nourishment to the body leading to symptoms of hypothyroidism. So hypothyroidism can be considered as *Dhatwagnimandya* because of similarities in clinical features and drugs having *Deepana*, *Pachana*, *Lekhan*, *Strotoshodhan*, *Anulomana* and *Kaphashamaka* which may help in normalizing *kapha vata vridhhijaynya Dhatwagnimandya*. So ayurvedic management of

hypothyroidisms is effective along with dietary rules and asana and *pranayamas* described in *Ayurvedic* texts.

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