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Review Article

EFFICACY OF VIRECHAN KARMA IN THE MANAGEMENT OF HYPOTHYROIDISM: AN ARTICLE REVIEW

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ABSTRACT

Thyroid gland is one of the important glands of the endocrine system. Principal function of thyroid gland is to act as a 'catalyst' for the maintenance of oxidative metabolism. Hypothyroidism is the most common endocrine disorder observed all over the world in present time. It occurs about 7-8 times more frequently in females than males. In infants, symptoms do not appear till six months because enough hormone is present in mother's milk. It affects the quality of life of individuals. The only treatment available is synthetic thyroxine tablets which patients had to take life-long. Agni is the unique concept of Ayurveda related to Pachana or conversion, Dhatupaka or Metabolism, etc. i.e. various chemical reactions occurring in the body. It is responsible for and controls each and every process of conversion. The normal as well as abnormal functions of thyroid gland can be correlated to healthy and altered status of Agni. So hypothyroidism can be considered as a stage of Agnimandya resulting in the formation of Ama. In the bahu dosha avastha of ama, doshavsechana or samsodhana is done which includes expelling out ama by vamana or virechana.

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INTRODUCTION

Thyroid disorders are the most common disorders of the endocrine glands. The Thyroid gland produces two related hormones Thyroxin [T4] and Tri-iodothyronine [T3]. These hormones play a critical role in cell differentiation during development and help maintain thermogenic and metabolic homeostasis in the body. Hypothyroidism is a clinical syndrome resulting from a deficiency of thyroid hormones¹, which results in a generalized slowing of metabolic processes. About 1-2% of the total adult population is known to suffer from thyroid disorders. According to a projection from various studies on thyroid disease, it has been estimated that about 42 million people in India suffer from thyroid diseases². Hypothyroidism generally describes an under- active thyroid that does not produce enough thyroid hormones causing an overall decrease in physical and mental activity³. Hypothyroidism can result from a defect anywhere in the hypothalamic-pituitary-thyroid axis, either insufficient TSH from the pituitary or insufficient TRH from the hypothalamus. Risk factors for hypothyroidism include being female, exposure to radiation in the neck, prior thyroid surgery, having an autoimmune disease, experiencing hormonal changes due to pregnancy or menopause, personal history of lithium use etc. The main causes of hypothyroidism can be classified into⁴

Primary hypothyroidism in which the most common cause is Iodine deficiency, autoimmune thyroiditis, iatrogenic causes, drugs, congenital defects. Secondary hypothyroidism is due to pituitary TSH deficit and Tertiary hypothyroidism is due to hypothalamic deficiency of TRH.

Thyroid hormone is required for the normal functioning of each and every tissue of body, hence deficiency manifest as multi system involvement. The daily requirement of iodine recommended is 150 micrograms/day. When there is iodine deficiency, the thyroid gland compensates by increasing the iodine trapping mechanism and synthesis of hormone under the influence of TSH. This result in diffuse enlargement of the gland, which later on becomes multinodular⁵. The onset and progression of disease is very gradual, the basal metabolic rate is decreased, deposition of hyaluronidase in dermis and all tissues and hence leading to non- pitting oedema i.e., myxoedema, which is the result of long lasting hypothyroidism. Signs and symptoms of hypothyroidism include Tiredness, weakness, Dry skin, Feeling cold, Hair loss, Difficulty concentrating & poor memory, Constipation, Weight gain with poor appetite, Dyspnea, Hoarse voice, Impaired hearing, Menorrhagia, Dry, coarse skin, Cool peripheral extremities, Puffy face, hands and feet (myxedema), Diffuse alopecia, Bradycardia, Peripheral edema, Delayed tendon reflex relaxation, Carpal tunnel syndrome, Serosus cavity effusions⁶.

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Hypothyroidism can be co related to *Ama* in Ayurveda as symptoms of *ama* are very much similar with that of hypothyroidism (as shown in table 1). Ayurveda has endowed the function of thermogenesis and metabolism in the body to *Agni*. It is defined as substance or entity that brings about transformation / conversion in any form. The thirteen types of *Agni* bring about all the chemical reactions and transformations in the body. *Samagni* is one of the most important criteria of *SwasthaPurusha*. *Agnimandya* is one of the commonest disorders of *Agni*. *Agnimandya* leads to formation of *Ama* – noxious form of *Rasa Dhatu* that causes various diseases.

Agni is the unique concept of Ayurveda related to *pachana* or conversion i.e. various chemical reactions occurring in the body. It is defined as “*Nayateparinaamyati*” that which brings about changes in an organism or a substance, indicating that it is a key factor in transformation of consumed *AaharaviharadiDravya* of *vijatiya* origin into *Sajatiya* nature. It is responsible for and controls each and every process of conversion. Of the thirteen types of *Agni*, *jathargni* is the one of the prime importance controlling other *agni*⁷. *Agnimandya* is the vitiated state where *Agni* is unable to digest even the meagre quantity of ingested food which ultimately leads to production of *Ama*. *Ama* is described in Ayurveda by different *Aacharyas* as:

1. Due to hypo functioning of *ushma*, the first *Dhatu* ‘*rasa*’ is not properly digested; instead the *annarasa* undergoes fermentation being retained in the *amashaya*. This *rasa* is called as *Ama*⁸.

Ushmane-Dalhana-dhatwagni, *Dhatwagnibhihapakat Amaityuchyate*

Adyadhātu-Hemadree-Rasa which is not capable of executing its function and also not capable of transforming into *Rakta*.

DushtaAmashaya-Hemadree-“Amasayoyaatra Ama Annatisthati” The name of this, ‘*Ashaya*’ itself suggests that the digestion of food is not completed here.

2. The *Adyaahara* *dhatu* is known as *Ama*, which is undigested and formed due to hypo functioning of *Agni*, in *Amasaya*⁹.
3. The matter which has not undergone *Vipaka*, leading to *Durgandhta*, which is large in quantity, which is *Picchila* and which leads to *Gatrasadana* called as *Ama*¹⁰.
4. “*ApakwamarasaitiAma*”-if *anna* *rasa* is not properly digested and formed then the outcome of such a digestion is known as *Ama*.

Various *lakshnas* produced due to *ama* include¹¹ *Srotorodha*, *Balabramsha*, *Gaurava*, *Alasya*, *Anilamudhata*, *Apakti*, *Nisthivana*, *Mala sanga*, *Aruchi*, *Klama*.

These features of *ama* can be compared to that of features of hypothyroidism as shown under in the table.

Table 1 showing Comparison of *Ama* Lakshana and Hypothyroidism Symptoms

<i>Amalakshana</i>	symptoms of hypothyroidism
<i>Srotorodha</i>	Stunted growth, hoarseness of voice.
<i>Balbhramsha</i>	Delayed development milestones, cold intolerance, lowered resistance, mental impairment.
<i>Gaurava</i>	Swollen, puffy oedematous face, weight gain.
<i>Anil mudhta</i>	Slow heart rate, reduced respiratory rate, decreased

<i>Alasya</i>	hearing, and inability to concentrate.
<i>Aruchi</i> ,	Lethargy, sleepiness
<i>Apakti</i>	Decreased appetite, BMR.
<i>Malsanga</i>	Constipation, decreased perspiration.
<i>Klama</i>	Loss of energy, apathy, fatigue.

Management of Hypothyroidism with synthetic thyroid hormone derivatives may bring the value of TSH and T4 to normal range but the increased dosage and continuous medication are cost expensive and makes the patient drug dependent till the end of mortal life. So, a better, safer and long lasting therapy is needed for the present society and now it is the need of hour to search the management for this type of ailment through the alternative medicine. *Ayurveda* has not mentioned endocrine disorders, instead for treatment of unspecified syndromes, it emphasizes on careful observation of symptoms and patho physiology.

The line of treatment of *Ama* *dosha* revolves around *pachana* (digestion of *ama*) then *deepana* (igniting digestive fire) and lastly *shodhana* after *sneha* and *sweda* *karma*¹². *Shodhana* without *ama* *pachana* results in further complications.

According to *AcharyaVagbhata*, the *ama* should be treated according to *doshabala*¹³:

In case of *Alpadosha*; *Langhana* is done.

In case of *Madhyamadosa*; *laghana* along with *pachana* is administered.

In case of *bahudosha*, *dosha* *avsechana* or *samsodhana* *chikitsa* is done which includes expelling of morbid *doshas* from the body by the means of *vamana* or *virechana* *karma*.

DISCUSSION

After *Deepana* & *Pachana*, *doshas* attain *Niramavastha* and may require elimination from the body by *shodhana*. Here, *Virechana* is chosen in spite of *Vamanabecause*:

Production of *ama* is the result of *Avarana* of *pitta* *sthana* by *kledakakapha*, thus hampering the digestive activity of the *pachaka* *pitta*. *Virechana* helps in this condition through two ways; firstly it removes the *Avarana* produced by *kledaka* *kapha* & secondly, it is the most suited therapy for the *sthanika* *dosha* *pitta*. Also, *virechana* causes *srotoshodhana*.

Virechana drugs carry out the therapeutic purgation due to their *prabhava* (potency). As these drugs are having *Jala* and *Prithvimahabhuta* dominance, they have a natural tendency to go downward and thus they can help in induction of purgation. *Virechana* *dravyas* possesses the following properties:

GUNA: *Ushana*, *teekshana*, *sukshma*, *vyavayi* and *vikasi*.

Panchabhautikasanghathana: *Prithvi* and *jalamahabhuta*.

Mode of Action of Virechanakarma¹⁴:

Virechana drug possessing the above properties reaches the *hridaya* by virtue of its *virya* and then following the *dhamni*, it pervades the whole body through large and small *srotasa*.

Due to *vyavayiguna* of *virechandrayas*, they are quickly absorbed.

Vikasiguna causes softening and loosening of the bond by *dhatu* *shaitilyakarma*. *Ushnaguna* causes *vishyandana* of *sanghathadoshas*.

Teekshana properties of virechana drugs dochedana of the doshas, which are already softened due to oleation therapy. According to dalhana, this action is due to quick excretion (*DoshaSrvana-Karatvam*). Thus liquefied *doshas* are dragged towards the *koshtha*.

Due to *sukshma* property by reaching in micro channels, disintegrates endogenic toxins, which are then excreted through micro channels.

Due to dominance of *prithvi* and *jalamahabhootas* in the virechana drugs and their potent *AdhobhagaharaPrabhava*, the vitiated doshas are made to pass through anal route and are expelled out of the body.

In modern science while explaining laxatives said that they probably induce limited low grade inflammation in the small and lower bowel to promote accumulation of water and electrolytes and stimulate intestinal motility. From the above view we can say that purgative drugs are mild irritant to the stomach and the intestinal mucosa respectively, to cause inflammation. Due to this, the permeability of the membrane changes and those substances come out due to the changed permeability which cannot come out in normal condition. This medically produced mild inflammation facilitates quick absorption of the active principles (*veerya*) of the drug in initial stage. Later on, it facilitates the excretion of the morbid matters, which generally are not supposed to be excreted through the mucosa of the gut. It is possible only because inflammation increases the permeability of the capillaries, which in turn allow the absorption, as well as excretion of such substances which are not allowed in the normal condition¹⁵.

CONCLUSION

Thyroid gland is very much essential for the metabolism in the body. Agni is the entity that brings all kind of transformations in the body according to Ayurveda. *Agnimandya* is precursor factor of all the diseases resulting in ama formation. Symptoms of ama and hypothyroidism are almost similar. Treatment of *ama* gives significant result in hypothyroidism.

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