



Endocrinology from Ayurvedic perspective

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ABSTRACT: *Ayurveda* is a science of body, mind and consciousness, it is not enough to merely focus on just physical symptoms and imbalances; one's mind and consciousness also play a major role, especially in endocrinology. Endocrinology is derived from a Greek word, *endon* means "within" and *krinō* means "to separate"; *logia* is a branch of biology and medicine which deals with the endocrine system, diseases related with glands and their specific secretions or hormones. Endocrine system works according to the master gland (in most of the cases) which is a part of the hypothalamus (related with emotions of an individual). Due to altered lifestyle and increased stress factor, problems with the endocrine systems are increasing. However, there is a limited knowledge of about causes the initial imbalance and functional problems of the endocrine system. In ancient times, *Acharyas* thought of disorders related to endocrine system. *Charakacharya* in *Sootra stana* 21st chapter unveiled *Ayurvedic* endocrinology in his language. '*Ashtouninditiya purusha*' can be the term which may be used for various endocrine disorders. This is an attempt to review *Ayurvedic* endocrinology as compared to modern endocrinology. *Ayurveda*'s comprehensive understanding of endocrinology applies a natural and holistic approach that may significantly help prevent and reduce hormonal challenges.

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1. Introduction

Ayurveda is one of the most ancient medical science of the world. It conceives and describes the basic and applied aspects of life process, health, diseases and its management in terms of its own principles and approaches.

Imbalance in the state of body tissues is known as Disease and equilibrium is called as Health [1]
Aim of entire stream of science (*Ayurveda*) is to re-establish the state of equilibrium among different tissues. [2]

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The method of diagnosis in *Ayurveda* mainly depends on in-depth understanding of *Dosha-Dooshya* and accordingly treatment is given so as to pacify *Doshas* and achieve the healthy condition. Still there are some individuals like eight undesirable individuals in which extra efforts are required to achieve equilibrium state of the body.

In twenty first century, with its continuous changing life styles, environmental variations and alteration of habits have made man as main victim of many diseases. Changing life style of modern human being has created several dis-harmonies in his biological system. A survey shows that endocrine disorders in several millions of children and adult in India remain undetected & untreated because of inadequate professional expertise and lack of reliable diagnostic services. Therapeutic benefits are not available to millions suffering from endocrine disorders in India.

Endocrine disorders are typically grouped into two categories:

- Endocrine disease that results due to imbalance of hormones when a gland produces too much or too little of an endocrine hormone.
- A disease of endocrine system caused by development of lesions (such as tumors or nodules) in the endocrine system, which may or may not affect hormone levels.

The endocrinology or effect of diseased endocrine glands on the body are of two types, under the effect of the glands-

1. Hyper
2. Hypo

So, the disorders related to endocrine can be divided into two categories:

- Due to hyper-secretion of endocrine gland
- Due to hypo-secretion of endocrine gland

This matches with the *Ashtou-nindita purushas*, four pairs of disorders exactly opposite to each other. Though any endocrine gland is not described in *Ayurveda*, yet several references are scattered in various texts. Eight types of *Nindita Purusha* can be described on the basis of various hormonal disorders.^[3]

Eight undesirable constitutions:

Acharya Charaka has described eight most undesirable diseases (*nindita purusha*) i.e. *Atideergha*, *Atihraswa*, *Atiloma*, *Aloma*, *Atikrushna*, *Atigoura*, *Atisthula* and *Atikrusha*. *Ashtou-ninditiya* are physio-pathological diseases which are not described in-detail in *Nidana* or *Chikitsa Sthana* of *Samhita* but in *Sutra Sthana* of it, since he was a perfect physician. In *Sutra Sthana*, basics of ayurvedic management are given in short, where he stated that these eight types of physical constitutions are very difficult to treat.

eha khalu shariram adhikrutya ashtau purusha nindita bhavanti, tadyatha atideerghashcha, atihraswashcha, atiloma cha, aloma cha, atikrushanashcha, atigourashcha, atishulashcha, atikrushashcheti ||3||

Eight types of undesirable (nindita) physical constitutions are described below :

Ati Deergha too tall,
Ati Hrasva too short,
Ati Loma too hairy,
Aloma hairless,
Ati Krushna too black,
Ati Goura too white,
Ati Sthoola too corpulent and
Ati Krusha too emaciated.

(The above description of eight types of undesirable persons is based on physical constitution only. Out of these eight types, first six are not significant for medical purpose. They are undesirable in the society and cannot be treated. *Acharya Charaka* has considered **Atisthoulya** as '**Nanatamaja**' or specific disease of *Kapha*, also included **Atisthoulya** in **Dusita medoja roga**.)

The word undesirable should only be understood from the health perspective. The term undesirable in present context means, extra efforts of healthcare are required so as to maintain good quality of health of the above individuals. Very tall person is correlated to gigantism, very short person means dwarfism. In a normal colored family, if a baby with abnormally excess black or white skin color is born, then they are grouped under *Ati-krushna* and *Ati-goura*. This does not apply to generally tall or short or white or black skin colored persons.

1) **Ati-deergha**

Ati = extra

Deergha chi. (drunateeti) dru vidarane + bahulakat ghay) aayatama etyamarah |

Lambine jast

This can be co-related with gigantism or pituitary giant.

In children, growth hormone in excess is called gigantism. If acidophilic cells i.e. growth hormone producing cells of anterior pituitary gland become more active due to some reason such as acidophilic tumor, there is increased secretion of growth hormone (GH). In such a condition all the body tissues including bones grow rapidly. If this occurs before adolescence, a person becomes giant, as till this age epiphyses of long bones are not fused with the shaft.

2) **Ati-hraswa**

Ati = extra

Hraswa (chi.) (s + van) dravastumtvam |

Tatparyayah neechakah neechah eti shabdaratnavali | Vamanah |

Aakhud, kamee lambiche

This can be co-related with pituitary dwarf.

Growth hormone is produced by acidophilic cells of anterior pituitary gland i.e. master gland of the body situated in sella turcica cavity of sphenoid bone and is under the influence of hypothalamus. It exerts its effect directly on all or almost all tissues of a body when release into blood. Growth hormone is also called as somatotropin. It causes growth of almost all the tissues of the body which are capable of growing. Growth hormone enhances proteins storage in the body, it uses up the storages of fats and also conserves carbohydrates. Growth hormone deficiency is a condition in which the body does not secrete enough quantity of growth hormone. Other names for growth hormone deficiency are dwarfism and pituitary dwarfism.

If acidophilic cells of pituitary gland does not secrete appropriate amount of growth hormone, growth can slow down. Growth hormone deficiency is commonly seen in children but it can develop at any age. If it is present at birth, it is called congenital growth hormone deficiency. However, one can also develop growth hormone deficiency during childhood or as an adult as a result of a trauma, such as a severe injury to brain or any other medical condition. When this condition is seen in children or adults, it is called as acquired growth hormone deficiency.

Growth hormone deficiency may have different effects on a person depending on at what age he/she develop it.

Growth Hormone Deficiency in Children

Growth hormone is very crucial for normal growth and development of an individual. In children having growth hormone deficiency, they are usually abnormally shorter than other children with normal growth hormone. In many children having growth hormone deficiency puberty is often delayed and some of them having pan hypopituitary dwarfism may never go through puberty and never secrete sufficient quantities of gonadotropic hormones to develop adult sexual functions.

Growth Hormone Deficiency in Adults

Growth hormone is necessary even if further growth is stopped, because it helps to maintain the proper amounts of muscle, fat, tissue and bone in body. Growth hormone deficiency in adult causes lethargy, poor bone density with reduced muscle mass and may accompany some mental and emotional symptoms, such as fatigue, depression and poor memory.

3) Ati-loma

Ati = extra

Loman (na.) sharir (Cha. Su. 1/69) asthnou malah (Cha. Chi. 15/19)

Bahyatvak vartikeshah tanurooham romaloma (Amar, Su. Sha. 3/33)

Tatsamkhyā ekontrinshatsahasrani nava cha shatani shat panchashatkani

Keshashmashrulomani (Cha. Sha. 7/14)

Ati pramanat lava/roma asalela

This can be co-related with hirsutism and/or hypertrichosis

Hirsutism is the growth of terminal hair in a male pattern in a female. While, hypertrichosis can be described as the excessive growth of terminal hair in either sex in a non-androgenic distribution.

Hirsutism is excessive hairiness on women in those parts of the body where terminal hair does not normally occur or is very minimal for example, upper lip, beard or chest hair. Some degree of hirsutism is common after menopause. But this is androgenic pattern of body hair and therefore it is primarily of cosmetic and psychological concern. Hypertrichosis affects members of any gender, since increased androgen levels can cause excessive body hair, particularly in body parts where normally terminal hair do not develop during puberty. The amount of terminal hair varies in people due to genetic factors so clinical context should be taken into account.

Causes :

Increased production of androgens

4) Aloma

A = no

Loman (na.) sharir (Cha. Su. 1/69) asthnou malah (Cha. Chi. 15/19)

Bahyatvak vartikeshah tanurooham romaloma (Amar, Su. Sha. 3/33)

Tatsamkhyā ekontrinshatsahasrāni nava cha shatāni shat panchashatkāni

Keshashmashrulomani (Cha. Sha. 7/14)

Lava/roma nasalela

This can be co-related with Hypotrichosis.

Hypotrichosis is loss of hair or reduction in hair density. It occurs, most frequently; in the areas of the body that normally produce terminal hair are replaced by the growth of vellus hair. Hypotrichosis is a common feature of Hallerman-Streiff syndrome as well as some other diseases like Leprosy.

5) Atikrushna

Ati= extra

Krushna Pun. (Karshatyareen mahaprabhavashaktya)

Eti bahulakat varnam |

Black coloured

This can be co-related with Hypermelanosis.

Hypermelanosis may be localized or diffused. The term refers to one of several disorders of melanin pigmentation resulting in increased melanin in either the epidermis in which coloration is brown or blue or slate gray in the dermis.

Causes :

Due to hypersecretion of melanin in the body.

6) Atigoura

Ati = extra

Gouram stree (Gurate chittam yatra |)

Gur sha y

Having fair colour

This can be co-related to Hypomelanism/Albinism.

Hypomelanism is due to decreased production of pituitary melanotrophic hormones. The complexion has a pale or with yellow tinge.

Albinism (In Latin albus means white) is a genetic abnormality and also called as achromia, achromasia or achromatosis. Albinism is usually inherited as an autosomal recessive trait. It is characterized by decrease in production of melanin and by partial or complete absence of pigment in the skin, hair and eyes due to defect in tyrosine, a copper-containing enzyme involved in the production of melanin.

Causes :

Due to defective gene

7) Atisthula

Ati = extra

Sthula kleeba (Sthulat kay bruhane | eti Kavikalpadrum |)

Adantachura aatma ak set deergho y atusthoolat + bruhanam vrudhihi | eti Durgadasah |)

Tatparyayh peenam, peevam, peevram |

Fatty person

This can be co-related with obesity.

Obesity is a medical condition in which excess body fat has accumulated to the extent so that it can have a negative effect on individual's health. Obesity has adverse effects on both mortality and morbidity. ABMI of 25 to 29.9kg/m² indicates that an individual has overweight; a BMI of 30 kg/m² or more indicates that a person has obesity.

Endocrine disorders causing obesity

Hypothyroidism

PCOS

Cushing's syndrome

8) Atikrusha

Ati = extra

Krusha er ya karshe | eti Kavikalpadrumah |

Karshyam Krushakranam |

Lean person

This can be co-related with leanness/malnutrition.

The property of being lean, without excess or fat. ABMI which is below 18.5kg/m² indicates that an individual is malnourished.

Causes:

Malnutrition, Reduced appetite

Loss of appetite

Difficulty chewing

Elderly difficulties simple problem with shopping and cooking

Anorexia nervosa

Body dysmorphic disorder

Female athlete syndrome

Discussion

Ashtou-nindita purushas, four pairs of disorders exactly opposite to each other. Though any endocrine gland is not described in *Ayurveda*, yet several references are scattered in various texts. Eight types of *Nindita Purusha* (Cha. Su. 21) can be described on the basis of various hormonal disorders. The word undesirable should only be understood from the health perspective. The term undesirable in present context means, extra efforts of healthcare are required to maintain good quality of health in the above individuals. Very tall person is correlated to gigantism, very short person means dwarfism. In a normal colored family, if baby is born with abnormally excess black or white skin color, then they are grouped under *Ati-krushna* and *Ati-goura*. This does not apply to generally tall or short or white or black skin colored persons.

Conclusion

Ayurveda s comprehensive understanding of endocrinology applies a natural & holistic approach that may significantly help present & reduce hormonal challenges.

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