

“STUDY OF CUTANEOUS MANIFESTATIONS OF ENDOCRINE DISORDER: AN AYURVEDIC PERSPECTIVE”

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ABSTRACT

Indians are suffering from increased burden of endocrine disorders. Around 108 millions of people suffer from various endocrine disorders like thyroid disorder, diabetes mellitus, and metabolic bone disorder, reproductive endocrine diseases, pituitary diseases, and adrenal diseases. Endocrine disorder involves many organ systems of human body. Integumentary system of human body is one of the systems that are affected by endocrine disorders. Endocrine disorders show cutaneous manifestations like hair fall, hyperpigmentation, acne, hirsutism, pruritus, urticaria and many more conditions which are seen in various endocrine disorders. Skin manifestations of endocrine disorders can have subtle effects on almost every aspect of person's physical, psychological and social life. Hence, study of cutaneous manifestations of endocrine disorders and treatment in ayurvedic perspective is need of the time. In this conceptual paper, we have tried to correlate cutaneous manifestations of endocrine disorders and its pathophysiology in Ayurvedic perspective.

Keywords: Endocrine disorders, cutaneous manifestation, Ayurveda

INTRODUCTION

Skin is the largest organ of the body; it not only gives shape to the body but also act as a shield that covers and defends the body against injuries, infections and helps body in many ways by performing function like thermoregulation, storage of electrolytes, carbohydrate, water, fat, proteins. Skin manufactures vitamin D which is essential for skeletal development¹. Skin excretes some toxins from the body, it also performs absorptive functions. Skin is a mirror of feelings which display the feelings like emotions, blanching, blushing, and sweating in response to the internal feelings. Skin manifestation is very common in many disorders like metabolic, endocrine, liver diseases, renal diseases, anaemia etc. As per survey Indians are suffering from increased burden of endocrine disorders. About 108 million Indian people are suffering from various endo-

crine disorders². In endocrine disorders skin manifestations are seen very commonly; even most of the skin disorders remain undiagnosed or untreated without knowing the underlying endocrine pathology. Bond between skin and mind has deep roots many skin conditions worsen due to stress, even some surveys also concluded that stress is one of the factor of endocrine disorder^{3, 4} hence there will be specific bond between endocrine disorder, skin manifestation and stress. In polycystic ovarian disease female patients shows skin manifestations like hirsutism, hair fall, acne. These types of skin manifestations of endocrine disorders can have subtle effects on almost every aspect like physical, psychological and social life of female patients which will again be a cause of stress; Hence to avoid cycle of stress, endocrine and skin disorders, there is need for study

of skin diseases with underlying endocrine pathology. Skin diseases with underlying endocrine pathology include⁵: thyrotoxicosis; hypothyroidism; Cushing syndrome; Addisons disease; acromegaly; hyperandrogenism; hypopituitarism; primary hyperparathyroidism; hypoparathyroidism; pseudohypoparathyroidism and manifestations of diabetes mellitus. Thyrotoxicosis may lead to multiple cutaneous manifestations, including hair loss, pretibial myxedema, onycholysis and acropachy. In patients with hypothyroidism, there is hair loss, the skin is cold and pale, with myxedematous changes, mainly in the hands and in the periorbital region. The striking features of Cushing syndrome are centripetal obesity, moon facies, buffalo hump, supraclavicular fat pads, and abdominal striae. In Addisons disease, the skin is hyperpigmented, mostly on the face, neck and back of the hands. Virtually all patients with acromegaly have acral and soft tissue overgrowth, with characteristic findings, like macroglossia and enlarged hands and feet. The skin is thickened, and facial features are coarser. Conditions leading to hyperandrogenism in females present as acne, hirsutism and signs of virilization (temporal balding, clitoromegaly). A prominent feature of hypopituitarism is a pallor of the skin with a yellowish tinge. The skin is also thinner, resulting in fine wrinkling around the eyes and mouth, making the patient look older. Primary hyperparathyroidism is rarely associated with pruritus and chronic urticaria. In hypoparathyroidism, the skin is dry, scaly and puffy. Nails become brittle and hair is coarse and sparse. Pseudohypoparathyroidism may have a special somatic phenotype known as Albright osteodystrophy. This consists of short stature, short neck, brachydactyly and subcutaneous calcifications. Some of the cutaneous manifestations of diabetes

mellitus include necrobiosis lipidica diabetorum, diabetic dermopathy, scleredema adultorum and acanthosis nigricans. PCOD, Thyroid disorder and diabetes mellitus like endocrine disorders shows high prevalence rate of cutaneous manifestation.

Observations: Cutaneous manifestations of Diabetes mellitus, PCOD and Thyroid disorder in brief are as follows: Diabetes mellitus is most common endocrine disorder; around 5.4% population expected affect by year 2025 because of DM⁶. Diabetes mellitus is distinguished by increase serum glucose level and disturbed carbohydrate and lipid metabolism resulting into long term systemic disorders. According to different author's cutaneous manifestations varies between 30% and 70%⁷.

Skin diseases seen in diabetes mellitus⁸:

Diabetic dermopathy - most common diabetic cutaneous manifestation characterized by pretibial papules and shin spots which is common in geriatric people
Diabetic bullae – spontaneous blisters usually bilateral containing serous and non-inflammatory base. They heal within two weeks to five weeks time with leaving a scar marking.

Eruptive xanthomas – multiple eruption yellow, waxy papules

Neuropathy – cutaneous manifestations of autonomic neuropathy show disturbances in sweating, peripheral erythema, edema and atrophy. Polycystic ovarian syndrome is an endocrine disorder affecting 5-10% population of all reproductive age group females. The endocrinologic abnormality of PCOS begins soon after menarche. Chronically elevated luteinizing hormone (LH) and insulin resistance are 2 of the most common endocrine aberrations seen in PCOS. Prevalence rate of cutaneous manifestation is around 90%. Cutaneous manifestations like acne are seen in highest

percentage i.e. 67.5%, followed by hirsutism 62.5% and androgenic alopecia 30%. Fasting insulin levels was the most common hormonal abnormality seen in both acne and hirsutism, whereas AGA was associated with high testosterone levels⁹. Both hypothyroid and hyperthyroidism are known to cause skin disorders. The most common cutaneous feature in patients with hypothyroidism is coarse, rough, dry skin, pallor of skin, nail changes, and diffuse hair loss and loss of a lateral third of the eyebrows. The cutaneous features in patients with hyperthyroidism were warm, moist skin, with increased temperature patients, Exophthalmos, diffuse non-scarring alopecia, facial flushing, skin pigmentation, pretibial and nail changes like onycholysis and plummernails¹⁰. In *Ayurveda* many such examples have been discussed. The symptoms like *pandutva*, *vali* (wrinkles), *svedabadha* (sweat disorders) etc., which are seen in thyroid disorders are described. *Pandutva*, *atiloma* (Hirsutism), *Ativaivarnya* (hyperpigmentation) etc. symptoms are described under *yonivyapda* and PCOD is showing similar skin manifestations. *Prameha* producing *daha*, *suptata*, *pramehapidaka*, *visra sharir gandha* like symptoms as skin manifestations.

DISCUSSION

In *Ayurvedic* texts, the skin is named as *Tvaka* which is the outer most part of body. In *Charak samhita* *Tvaka sar* is defined which has the ideal presentation of healthy skin.¹¹ and it is nothing but the *Rasa sar*. The very first *dhatu* *Rasa* is represented by healthy skin. The skin automatically gets affected when this *Rasa dhatu* is affected. There are various endocrine secretions which are carried in the body by *Rasa dhatu* as it is the main *dhatu* which is flowing in the whole body. Whenever this *Rasa dhatu* is disturbed by

any means it will bring out many manifestations that will reflect on the skin. Thyroid disorders are very common now days. In *Rasa dhatu dushti charaka* has given symptoms including *pandutva* (Paleness of skin), *vali* (skin wrinkles), *palit* (premature greying), hair fall etc., which are commonly seen in thyroid disorders.¹² Similarly the basic metabolism is disturbed in thyroid disorders resulting in excessive sweating, bad odour. This is explained very well in the *sthaulya dosha* (Obesity) as *daur-gandhya*, *swedabadha*.¹³ *Aartava* is one of the *updhatu* of *Rasa dhatu*. *Rasa dushti* leads to *Aartavdushti*. PCOD is very common disorder in today's life which is producing menstrual problems, obesity. It also shows symptoms like hirsutism. In *Charak samhita* various disorders are elaborated in the *yonivyapda* which are showing symptoms similar to PCOD. Some of these *yonivyapada* show symptoms on skin like *pandutva*, *atibaivarnya*¹⁴. *Atiloma* i.e. hirsutism is described as one of the disease in *Charak samhita*.¹⁵ this is the cutaneous manifestation in PCOD. Diabetes Mellitus is the most prevalent endocrine disorder all over the world. In India also there is marked increase in the cases of DM. This disease is affecting many systems in the body and which gets reflected on the skin also. In *Ayurveda* this topic is broadly described under the *Prameha*. *Rasa* is one of the *dushya* in the *Prameha*. Naturally *ras-dushti* will be leading to *tvaka dushti* and produce symptoms like *jatilbhav* (dryness of hairs), *visra sharirgandha* (Bad odour) from the body.¹⁶ Carbuncle is seen as one of the complication of DM. It is described as *pramehapidaka* which is the cutaneous manifestation of *prameha*.¹⁷ Diabetic neuropathy produces burning of soles, palms. This is described as *Daha*, *suptata*¹⁸ in hands and feet (numbness of palms and soles)

Treatment: From various studies it is observed that *shodhana* is very much beneficial in the treatment of PCOD¹⁹, DM(*Prameha*)²⁰ and thyroid disorders²¹. *Shodhana* is best treatment to avoid recurrence and it produces fast result. Stress management is also effective in management of endocrine which is also very well explained in *Ayurveda* as *satvavajay* as stress is the main root cause of many endocrine disorders.

CONCLUSION

Endocrine glands are maintaining balance and equilibrium of the body. Endocrine disorders affect various systems as well as skin. Skin shows various disorders like dryness, acne, xanthomas etc. PCOD, DM and Thyroid disorders are very common among them. These disorders produce symptoms as hirsutism, erythema, alopecia etc. which are seen as cutaneous manifestations. In *Ayurvedic* texts various conditions of skin are described as a result of *tvakdushti* like *pramehapidka*, *daha*, *sup-tata*, *atiloma* etc. In *Ayurveda*, *shodhana* chikitsa is explained in the treatment of *prameha*. From various surveys it is seen that *shodhana* is very much beneficial in the treatment of PCOD, thyroid disorders. *Shodhana* is best treatment to avoid recurrence and it produces fast result. Recent studies showed that PCOD, DM, Thyroid disorders have stress as one of the etiological factor. Hence stress management is also effective in management of endocrine which is also very well explained in *Ayurveda* as *satvavajay*. Thus combined effect of *shodhana* and various other treatments in *Ayurveda* is definite answer to endocrine disorders and their cutaneous manifestations.

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