



ISSN 2456-3110

Vol 6 · Issue 2

Mar-Apr 2021

Journal of  
**Ayurveda and Integrated  
Medical Sciences**

*www.jaims.in*

# JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences



**Charaka**  
Publications

Indexed

## Review on *Vyanga vis a vis Melasma*

Dr. Swati Patare<sup>1</sup>, Dr. S. P. Mangoli<sup>2</sup>

<sup>1</sup>Post Graduate Scholar, <sup>2</sup>Professor & HOD, Dept. of Kaychikitsa, BLDEA's A.V.S. Ayurveda Mahavidyalaya, Vijayapura, Karnataka, INDIA.

### ABSTRACT

*Vyanga* (Melasma) is a common, acquired and symmetrical hypermelanosis characterized by more or less dark brownish maculae, with irregular contour, but clear limits, on photo exposed areas, especially the face, forehead, temples, and more rarely on the nose, eyelids, chin, and upper lips. In *Ayurveda*, *Vyanga* has been elaborated as one of the *Kshudra Rogas* (minor ailments). *Vyanga* is a disease which belongs to *Swalpa* variety of *Ksudra Roga*. *Vayu* aggravated by *Krodha* and *Ayasa*, get associated with *Pitta* and suddenly produces a thin, grey colored circular patch when reaches the face. Both modern and *Ayurvedic* sciences have considered the use of topical as well as oral medications and their combinations for the treatment of *Vyanga*. In *Ayurveda*, *Vyanga* has been treated both by *Antah-Parimarjan* and *Bahi-Parimarjana Chikitsa*. Though, several *Ayurvedic* texts such as *Sushruta Samhita*, *Ashtanga Samgraha* & *Hridaya*, etc., have elaborated the pathophysiology and treatment of *Vyanga*, the available references are scattered. Thus, there is need of in-depth review and compilation of *Ayurvedic* texts and literatures. This review may be helpful in better understanding of comparative pathophysiology and management of *Vyanga* (Melasma).

**Key words:** *Melasma, Vyanga, Kshudra Roga, Antah-Parimarjan, Bahi-Parimarjana.*

### INTRODUCTION

Melasma is a common, acquired and symmetrical hypermelanosis characterized by more or less dark brownish maculae, with irregular contour, but clear limits, on photo exposed areas, especially the face, forehead, temples, and more rarely on the nose, eyelids, chin, and upper lips. Even minor changes in the cellular environment affect melanosomes and pigmentation. Numerous intrinsic and extrinsic factors are responsible for a whole range of responses in melanosome structure and distribution under

different types of stress.

Cutaneous pigmentation is the outcome of two important events: the synthesis of melanin by melanocytes and the transfer of melanosomes to surrounding keratinocytes.<sup>[1]</sup> Number of melanocytes in human skin of all types is essentially constant. But the number, size, and manner in which melanosomes are distributed within keratinocytes vary. The melanin content of human melanocytes is heterogeneous not only between different skin types but also between different sites of the skin from the same individual.<sup>[2]</sup> Besides for the most obvious and thoroughly discussed aspect its role in defining ethnicity, melanin plays an essential role in defending the body against harmful UV rays and other environmental challenges. Minor changes in the physiological status of the human body or exposure to harmful external factors can affect pigmentation patterns either in transitory (such as in pregnancy) or permanent (e.g., age spots) manners.

### Mechanism of Melasma Formation

Darkening of the skin due to the over-production of melanin by overactive pigment cells called

#### Address for correspondence:

Dr. Swati Patare  
Post Graduate Scholar, Dept. of Kaychikitsa, BLDEA's A.V.S.  
Ayurveda Mahavidyalaya, Vijayapura, Karnataka, INDIA.  
E-mail: drswatithorat1992@gmail.com

Submission Date: 18/02/2021 Accepted Date: 23/03/2021

#### Access this article online

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Website: [www.jaims.in](http://www.jaims.in)

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melanocytes. However, various factors can provoke melanocytes to go into overdrive, and these different root causes are what distinguish the different types of brown spots. Epidermal melanin deposition causes a brownish appearance, and dermal melanin appears bluish. Combined epidermal and dermal melanin deposition appears gray.

It is a dermatological disease easily diagnosed by clinical examination, typically chronic, with frequent recurrences, great refractoriness to existing treatments, and with many unknown physio pathological aspects.

There is no consensus as to the clinical classification of melasma. Two patterns of facial melasma are recognized: central-facial, which affects the central region of the forehead, mouth, lips, supra labial area, and chin; and malar, which affects the zygomatic region. Some authors also add a third and less frequent pattern, called mandibular.<sup>[3]</sup>

There are countless factors involved in the etiology of melasma, but none of them can be mentioned as the only factor leading to its development. They include: genetic influences, exposure to UVR, pregnancy, hormone therapy, cosmetics, phototoxic drugs, endocrinopathies, emotional factors, anti-convulsive drugs, and others with historic value. However, it seems that genetic predisposition and exposure to sun radiation play an important role, considering that melasma lesions are more evident during or shortly after periods of exposure to the sun.<sup>[4]</sup>

Jointly, comparative studies on skin affected by melasma and normal adjacent skin found that this condition is characterized by epidermal hyperpigmentation without increase in the number of melanocytes, increase in the quantity of melanin in all layers of the epidermis, increase in the number of melanosomes, and augmented dermal elastosis.<sup>[5]</sup>

In Ayurveda, Melasma has been elaborated as one of the *Kshudra Rogas* (minor ailments). Melasma is called as *Vyanga* in Ayurveda. The literary meaning of *Vyanga* is “Vi + Aṅga” i.e. (‘Vi’ means, *Vigata*, *Vikala*) *Vikṛta Anga*. Description about *Vyanga* is found in almost all the Ayurvedic classics. *Ksudrarogas* are

those groups of disorders which are basically characterized by *Alpa Rupa* or these are also termed as *Alpa Vyadhi* (*Shabda Kalpa Druma*). They are also known as *Swalpa*, *Adhama* or *Krura Vyadhi*. *Vyanga* is a disease which belongs to *Swalpa* variety of *Ksudra Roga*. The word *Vyanga* literally means - Spotted, speckled, freckles on the face, a blot or blemish. *Vyanga* has been described by all the *Brhatrayi*. A detailed and separate description of *Vyanga* is described in the chapter of ‘*Ksudra Roga*’ in *Susruta Samhita* which includes *Nidana*, *Lakṣaṇa*, *Samprapti* and *Sapeksa Nidana*. Both *Caraka Samhita* and *Susruta Samhita* consider *Vyanga* as a ‘*Raktaja Roga*’ & a common *Samprapti* for *Tilakalaka*, *Piplu*, *Vyanga* and *Neelika* in *Trisoṭhiya Adhyaya* has been given. Individuals who belong to *Pitta Prakṛti* are said to be prone to *Vyanga*. More elaborate description is available in *Astanga Hrdaya Uttaratantṛa*, in the ‘*Ksudra Roga Prakaraṇa*’ where in the *Dosanusara Lakṣaṇas* of the disease are explained in detail. In *Madhyakala*, *Madhava Nidana*, *Śarangadhara Samhita*, *Bhavaprakasa*, *Cakradatta*, *Yogarātnakar* have described about the disease *Vyanga* in the context of *Ksudra Roga*.

#### Causative factor of Vyanga

*Acharya Charaka* did not specify the causes of *Vyanga*. Overall, according to him *Pitta* vitiated causes are responsible of *Vyanga*. As per *Susruta*, *Krodha* and *Aayasa* are the causes of *Vyanga*. *Madhava Nidan* and *Yogarātnakara* also support *Susruta’s* point of view. According to *Astanga Samgraha* and *Astanga Hridaya*, *Soka* and *Krodha* are the main causes for *Vyanga*.

#### Sign & Symptoms of Vyanga

As per the classics, *Vyanga* is a thin, grey coloured circular patch which occurs in face. *Susruta* and his followers gave an additional point regarding *Rupa* of *Vyanga*. According to them *Vyanga* is painless. *Charaka* did not specifically mention the *Rupa* of *Vyanga*. *Vyanga* becomes hard, rough and grey due to *Vayu*; surrounding becomes red or blue due to *Pitta*; becomes white with itching due to *Kapha*; becomes red or coppery colored in surrounding and possesses burning and pricking due to *Rakta*.

### Pathophysiology of Vyanga

While describing about *Samprapti* of *Vyanga Charaka* said that vitiated *Pitta* by its causes when get dried in *Rakta* of *Twaka*, *Tilakalaka*, *Piplu*, *Vyanga* and *Neelika* develops. As per *Susruta*, *Vayu* aggravated by anger and physical exertion, get associated with *Pitta* and suddenly produces a thin, grey colored circular patch when reaches the face. According to him, second layer of *Twaka* i.e., *Lohita* is the seat of *Vyanga*. *Vagbhatta* mentioned that *Vayu* aggravated by grief and anger along with *Pitta* produces a light, grey colored circular patch in the face and is called as *Vyanga*. He again added that it becomes hard, rough and grey due to *Vayu*; surrounding becomes red or blue due to *Pitta*; becomes white with itching due to *Kapha*; red or coppery coloured in surrounding and possesses burning and pricking because of *Rakta*.

### Treatment of Vyanga

As per Ayurvedic classics, *Yuktivyapashraya Chikitsa* is performed in *Vyanga*. Here at first, *Raktamokshana* was advised in the affected part. Then after rubbing the affected *Part Lepa* should be given as mentioned in classics (Table 1). *Samsamana Chikitsa* is also given with some classical formulations orally. *Samsodhana Chikitsa* was also advised in classics, as *Vaman*, *Virechana*, *Nasya*. In *Samsaman Chikitsa Vagbhatta* in *Astanga Samgraha Uttara Sthana* in '*Khudraroga Pratishedhiya Adhyaya*' mentioned about four types of medicated *Ghrta* preparations to have orally for the treatment of *Vyanga* in *Samsamana Chikitsa*. Many formulations are narrated in different Ayurvedic classics in the form of powder, paste, oil, ghee for the treatment of *Vyanga*.

**Table 1: Treatment for Vyanga as Illustrated by various Acharyas in their Classics.**

SN	Classics	Procedure recommended	Chapter
1.	<i>Sushruta Samhita</i>	<i>Siravedha, Pralepa</i>	Chikitsa Sthan Kshudraroga Chikitsa (20/33-36)

2.	<i>Astanga Hridya</i>	<i>Siravedha, Lepa.</i>	Uttar Sthan Kshudraroga Pratishedha (32/15-32)
3.	<i>Astang Samgraha</i>	<b>Vataj Vyanga</b> - <i>Pana, Abhyanga, Navan, Pralepa.</i> <b>Pittaj Vyanga</b> - <i>Abhyanga, Navan, Virechana, Rudhiravsechan, Lepa.</i> <b>Kaphaj Vyanga</b> - <i>Pana, Navan, Abhyanga, Pralepa.</i> <b>Raktaj Vyanga</b> - <i>Siravishravan, Vaman, Virechana.</i>	Uttar Sthan, Kshudraroga Pratishedha (37/23-33)
4.	<i>Bhav Prakash</i>	<i>Siravedha, Pralepa, Abhyanga.</i>	Chikitsa Prakarana Madhyam Khanda Kshudraroga Adhikar (61/39)
5.	<i>Yoga Ratnakara</i>	<i>Siravedha, Pralepa, Abhyanga.</i>	Uttar Sthan Kshudraroga Chikitsa / (1-12),14
6.	<i>Chakradatta</i>	<i>Siravedha, Pralepa, Abhyanga.</i>	Kshudraroga Chikitsa Prakarana 55/40,43,44,48,49
7.	<i>Bhasajya Ratnawali</i>	<i>Siravedha, Pralepa, Lepa, Abhyanga.</i>	Kshudraroga Chikitsa adhyaya, 60/37, (40-43), (46-48), (90-92), (107=124), (155-157)

### DISCUSSION

It is worth highlighting that melasma is one of the unaesthetic dermatoses that lead to great demand for specialized dermatological care, even though they are just a common and benign pigmentation abnormality. This might be explained by its cosmetically compromising nature and the associated emotional

and psycho- logical effects in individuals affected by this problem, who often, because of dissatisfaction with their appearance, eventually reduce their social lives, even with cases of suicide reported. Although this condition often has only aesthetical implications, such concern can be very important and impacting on the social, family and professional lives those affected, causing psycho- logical effects that cannot be neglected.<sup>[6]</sup>

*Vyanga* is one of the most common skin problems in all over the world treated by dermatologists. Several Ayurvedic texts including *Sushruta Samhita*, *Astanga Hridaya*, *Bhavaprakash*, *Chakradatta*, *Yoga- Ratnakar*, *Charaka Samhita*, *Sharangadhara Samhita* and modern literatures have been reviewed concerning with melasma. After review, it has been observed that both sciences have shown great similarity in the understanding of melasma in terms of causative factors, onset of symptoms, age factors, pathophysiology and method of treatment of melasma.

*Vyanga* has been elaborated in Ayurveda as a *Kshudra Roga* (minor ailment), as it is not a serious or life threatening disorder but it seriously impact quality of life of person. *Vyanga* is used in Ayurveda to define melasma. In *Samprapti* (Patho-physiological) process of *Vyanga*, factors stated by *Acharya's* has given special emphasis towards psychological factors like *Krodha* (anger), *Shoka* (grief) and *Shrama* (exhaustion), which are commonly found in most of the patients. In *Samprapti* of *Vyanga*, *Acharya Charaka* has mentioned that the aggravation of *Pitta* along with *Rakta* is the chief culprit for initiation of the pathology. *Vyanga* is a *Rakta Pradoshaja Vyadhi*, hence the very first *Dosha* affected is *Rakta Dhatu*. *Dosha Prakopaka Hetus* like *Krodha*, *Shoka* and *Shrama* are mainly *Tama (Manasika Dosha)*, *Pitta* and *Vata (Shareerika Dosha)* dominance, vitiates the *Agni (Pitta Dosha)* which resides in *Rasa* and initiates the pathogenesis of *Vyanga*. Here *Ranjaka Pitta* is responsible for the conversion of *Rasa Dhatu* into *Rakta Dhatu* which results in the formation of normal skin color. However due to etiological factors like *Krodha* and *Shoka* mainly *Pitta* vitiation takes place

which in turn affects the *Jatharagni* and normal functioning of *Ranjaka Pitta* i.e., *Varnotpatti*. Based on *Ashraya-Ashrayee Bhavas*, the derangement of *Pitta Dosha* leads to abnormality of *Rakta Dhatu*. *Shrama* and *Shoka* will lead to *Udana Vata* vitiation. Thus, vitiates *Ranjaka Pitta*, *Rakta Dhatu* as well as *Udana Vata* travel in body through *Dhamanis* and get *Sthana Samshraya* in *Mukhagata Twacha* and causes vitiation of *Bhrajaka Pitta* giving rise to discoloration of the skin.

As far as the treatment of *Vyanga* is concerned, both the sciences advise the use of topical as well as oral medications. Modern science describes the treatment as per the severity of *Vyanga*, similarly Ayurveda has also advised *Raktamokshana* for severe cases of *Vyanga*. Ayurveda believes in expelling the root causes of *Vyanga* by giving *Sodhana Chikitsa*. Modern science also aims at eliminating one of the main factors of *Vyanga* by advising oral as well as local antibiotics. Effective treatment modalities are available in both the sciences, but sometimes adverse effects of modern medicines limit their use.

In the present review, an effort is made to compile scattered references of *Vyanga* under one roof and also a comparison is made between *Ayurveda* and modern medicines with regards to understanding of *Vyanga*. Looking at in-depth knowledge, *Ayurveda* can certainly contribute in the development of newer effective and safe remedies for the treatment of *Vyanga*. Therefore, as far as the treatment of *Vyanga* is concerned it is most important for the drugs to have *Kapha Pitta Shamaka*, *Rakta Prasadaka* and *Varnya* property.

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**How to cite this article:** Dr. Swati Patare, Dr. S. P. Mangoli. Review on Vyanga vis a vis Melasma. *J Ayurveda Integ Med Sci* 2021;2:132-136.

**Source of Support:** Nil, **Conflict of Interest:** None declared.

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