AYURLOG
National Journal of Research in Ayurved Science
(A peer-reviewed open access Indexed e-journal of Ayurved Since 2013)
http://www.ayurlog.com July- 2020 | Volume 08th | Issue: 4th ISSN: 2320-7329

A critical review of *Vyanga* w. s. r. to Melasma- A classical and modern approach.

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ABSTRACT

In todays globalized era facial impressions has become very important to survive. Good Facial complexion with depigmented skin helps to Improve personality and self-confidence. Various cosmetic disorders are occurring due to hectic lifestyle, dietary habits, increased pollution etc.

Vyanga is one of those cosmetological issues which affect one's facial beauty. Vyanga is classified as kshudraroga in classical texts which occurs due to vitiated vata and pitta dosha and characterized by the presence of Niruja and Shyavavarna mandalas on face. It is one of the most common problem as regards the face is concerned. On the basis of clinical features, it can be compared with facial melanosis, one of the hyperpigmented disorders.

Before treating any disorder it is very important to understand it by all means like by signs and symptoms, etiology, pathogenesis, classification to achieve a success in treatment.

Current article focuses to gather all of types, diagnosis, etiology, pathogenesis and treatment of vyanga according to both modern and classical view.

KEYWORDS – Vyanga, Melasma, topical-internal-procedural treatment.

INTRODUCTION-

The concept of beauty i.e. its maintenance and enhancement also cosmeceutics used for treating various cosmetic disorders is as old as human race. In those days mostly natural products were used to improve the beauty or to treat cosmetic disorders. Few years or decades back the use of chemical or synthetic cosmetic products was on the top. But again now-a-days peoples are returning towards the natural way of living, natural foods, organic farming and natural or herbal or ayurvedic cosmetics.

Modern depigmenting agents such as hydroquinone, kojic acid etc. although highly effective can raise several safety concerns e.g. ochronosis, atrophy, carcinogenesis, and other local and systemic side effects with long term exposure. Hence the appropriate use of granthokta medications for treatment of vyanga is definitely going to overcome such side effects due to modern

medications.

Also this study will be helpful to compare classical and modern point of vyanga i.e. melasma in each aspect of disease.

AIMS AND OBJECTIVES-

1. To review and gather modern approach of vyanga.
2. To review and gather classical approach of vyanga.
3. To correlate both the approaches of vyanga.

MATERIAL AND METHOD-

Materials used for this article was various classical texts –Brihatrayi, Laghutrayi, various Nighantu's and rasagranthas and modern texts, published journals, articles, books and websites etc.

MELASMA ACCORDING TO MODERN SCIENCE-

Melasma is generally a clinical diagnosis consisting of symmetric reticulated hyper melanosis in three predominant facial patterns.[1]

1. Centro facial- 50–80% of cases is the Centro facial pattern, which affects the forehead, nose, and upper lip.
2. Malar- restricted to the malar cheeks on the face. while mandibular melasma is present on the jawline and chin.
3. Mandibular- while mandibular melasma is present on the jawline and chin.
4. Extra facial- occur on non-facial body parts, including the neck, sternum, forearms, and upper extremities.

Diagnosis-[1]

1. A Wood's lamp, the hyperpigmentation can be accentuated when the pigment is epidermal. How- ever, this accentuation may be seen with dermal or mixed melasma.
2. Reflectance confocal microscopy (RCM) is a non-invasive technique that detects pigmentary changes in melasma at a cellular level resolution.

Epidemiology-

Melasma is a common acquired hyperpigmentary disorder, prevalence of which varies between 1.5% and 33.3% depending on the population. Its prevalence in pregnancy is around 50-70%. An Indian man represents 20.5-25.83% of the cases.[2] An Indian study of 312 patients with melasma found a 4:1 female to male ratio.[1]

Etiology-

Several factors have been implicated in the etiology of melasma. These are genetic predisposition, UV radiation, thyroid disease, pregnancy, oral contraceptive pills (OCPs) and drugs such as phenytoin. [2]

Pathogenesis-[3]

Multiple factors have been incriminated in the pathogenesis of melasma. The current concepts include.

Increased melanisation

In melasma, there is no increase in the actual number of melanocytes. Melanocytes in lesional melasma skin are highly dendritic, and shows increased DNA synthesis in electron microscopic studies. Melanocytic activity is exaggerated resulting in increased formation, melanisation and transfer of melanosomes to keratinocytes. The melanosomes are also increased in size. Higher amounts of melanin are found in the epidermis and within macrophages in dermis. Increased melanogenesis - associated genes and proteins are also found in the epidermis. In addition, there are high levels of tyrosinase-related protein

1 (TRP-1) mRNA indicating a regulating mechanism at the mRNA level.

Basal membrane damage

This leads to falling off or migration of active melanocytes and melanin into the dermis and may be responsible for the persistent hyperpigmentation in melasma.

Dermal microenvironment

Dermal inflammation caused by ultraviolet (UV) irradiation may activate fibroblasts, resulting in up-regulation of stem cell factors leading to increased melanogenesis.

Vascular factors

Interactions between altered cutaneous vasculature and melanocytes influence the development of hyperpigmentation in the overlying epidermis. There is a significant increase in both number and size of the dermal blood vessels in melasma lesions. Melanocytes respond to angiogenic factors as they express increased number of vascular endothelial growth factor (VEGF) receptors.

Neural factors

It has been reported that lesional melasma skin has increased expression of nerve growth factor receptors and neural endopeptidases thus paving way for various neural peptides to act as etiological factors.

Miscellaneous

Stem cell factor, c-kit and mast cells may also have probable roles. Tranexamic acid has been found to prevent binding of plasminogen to keratinocytes, leading to a possible mechanism for treatment of melasma.

Classification of Melasma-[2]

On the depth of melanin pigments it classify into 3 types.

1. **Epidermal**- It appears light brown in colour. In this type melanin deposit in basal and supra-basal layers of epidermis. In wood's light examination it shows enhancement to contrast. It show good response to treatment.

2. **Dermal**- It is bluish gray in colour. In it melanin loaded melanophages seen in superficial and mid dermis. In wood's light examination it shows no enhancement. It responds poor to treatment.

3. **Mixed**-It is of dark brown coloured. There melanin deposition found in the epidermis and dermis. In woods light examination some area shows contrast enhancement. It shows partial response to treatment.

Clinical assessment-[1]

1. Melasma Area and Severity Index (MASI) is a validated scale used to measure the extent of facial hyperpigmentation.
2. modified MASI (mMASI) is a global score that incorporates both objective data and patient's subjective assessment. It is now used in clinical trials.
3. Balkrishnan and colleagues created the Melasma Quality of Life Scale (MELASQOL). The scale consists of 10 questions pertaining to the quality of life and impact of the disease rated on a Likert scale.
4. Dermatology Life Quality Index (DLQI)
5. SKINDEX-16

Treatment-[1]

Treatments for melasma include topical, oral, procedural, and combination treatments.

Topical - Iron oxide, Hydroquinone (HQ), Azelaic acid, Ascorbic acid, Kojic acid, Tretinoin, Corticosteroids, Ascorbic acid, Niacinamide.

Oral - Tranexamic acid, Polypodium leucotomos, Glutathione.

Procedures- chemical peels, Microneedling, Laser and Light treatment.

REVIEW OF VYANGA AS PER AYURVEDA-

According to the classical texts vyanga has been classified into " Kshudraroga". Aacharya charaka has mentioned vyanga as Raktapradoshaja vikara.[4] Vagbhata has mentioned vyanga in Raktavridhikar vikara.[5]

Aacharya sushruta has given **pathophysiology** of vyanga as-

"Due to anger and exertion vata dosha get vitiated and with help of pitta dosha this vata forms circular, painless, thin, bluish-black patches mostly on facial region."[6]

Besides sushruta has also mention that origin of vyanga occurs at second layer of skin Named "Lohita".[7]

From these references we can conclude that vyanga occurs mainly due to vitiated vata, pitta dosha and Rakta dhatu.

Classification of vyanga-[8]

Vagbhatacharya has classified vyanga in four sub types according to dominance of doshas.

1. Vatika-Blackish coloured and rough in nature.
2. Paittika-Blue coloured in centre and copper coloured in periphery.
3. Kaphaja-Whitish in colour and itchy nature.
4. Raktaja-In centre copper and on periphery blood coloured associate with burning and tingling sensation.

Review of vyangahar chikitsa-

Our classical texts has given scattered information related to vyangahar chikitsa. By gathering all those references we can classified this chikitsa as- 1. Shodhan chikitsa 2. Shaman chikitsa.

1. Shodhan chikitsa-[9]
   - Vaman
   - Virechan
   - Nasya (Bhringaraj swaras)
   - Raktamokshan
2. Shaman chikitisa-

   For Internal use-
   - Gandhapashan churna[10]
   - Somraji churna[11]
   - Avalgujaadi gutika[12]
   - Khadiroudak[13]
   - Amrutankur vati
   - Panchatiktaghrita Guggulu
   - Mahamanjishthadi Kwath

For external use-

From Charaka samhita –

1.	**Varnya gana**- (Chandana, Nagkeshar, Padmaka, Ushir, Yashtimadhu, Manjishtha, Sariva, Payasa, sita, lata.) [14]

From Chakradatta- [15]

1	Navaneeta + Guda + Madhu + Badarmajja lepa
2	Varuna twak with goatmilk
3	Jatiphala Kalka lepa
4	Katu taila abhyanga
5	Kaliyakadi lepa, Yavadi lepa
6	Haridradya Taila, Kanak taila, Manjishthadya Taila
7	Kumkumadi taila Prathama and Dwitiya, varnak Ghrita

From Sushruta samhita- [16]

1	Kshirivriksha twak lepa
2	Bala + Atibala + Yashtimadu + Haridra lepa
3	Payasya + Arkapushpi + Aguru + Chandan + Gairika lepa

From Ashtanga Hridaya- [17]

1	Kshirivrikshatwak and buds with milk lepa
2	Arjuna twak + manjishtha with Honey
3	Raktachandan + Manjishtha + Kushtha + Lodhra + Vatankura + Masura
4	Jiraka + Shahajiraka + Krushna tila with milk
5	Masura with ghrita and honey, Shalmalikantaka with milk
6	Matulunga + Kushtha with honey, shwetamusli + goat milk with honey
7	Jambu and amra patra + Dadhi + Haridra + Daruharidra + Nava guda
8	Utpalpatra + tagar + Priyangu + Daruharidra + Badarmajja lepa or Snehasidha (Sneha according to season) with Yashtimadhu kwath as drava dravya.
9	Yava, sarjarasa, Lodhra, Ushir, Chandan, Madhu, Ghrita, guda processed in Gomutra
10	Manjishthadi Sneha

From Sharangdhar samhita- [18]

1	Matulungajata + Gosharita + Manashila + Ghrita
2	Vacha + Lodhra + Saindhava + Sarshapa
3	Ashvakhuramasi lepa
4	Vatapatradi lepa

From various Rasagrantha and other literatures-

1	Bhangapatra + Shinshpa + Sthavirmula lepa, Arkaksheera +Haridra (yogratnakar)
2	Aranya tulsi root with goat milk (v.m.r.)
3	Ingudiphalamajja with cold water, Tamradi Taila, Krishnatildi lepa (rajmartanda)
4	Manjishthadi Taila (Vangasena)
5	Makshika + Hartal + Tutha + Rajavarta + Shilajatu + Mahishaksha guggulu with milk, Dadimatwak with honey (R.R.)
6	Madhu + Siktha + Gairika + Ghrita + Guda + Guggulu + Shalniryas (Rasakamdhenu)

CONCLUSION

Though modern medicine has wide range of cosmetics for treating hyperpigmentation disorders, Ayurveda had already given more potent range of topical formulations for treating hyperpigmentation disorders like vyanga. This article had made an attempt to collect all such formulations from Ayurvedic literatures. also various clinical and in vitro trials had already been studied and published regarding this formulations. Besides, one can use various permutation and combination in this drugs and formulations also can convert them into suitable new dosage form for easy application, administration etc. This can help to bring such effective formulations to this globalized era and can compete with modern cosmeceuticals.

ACKNOWLEDGEMENT

The authors are grateful to

1. Dr. Sheela Pargunde, HOD of Rasashastra & Bhaishajya kalpana department

2. Dr. Ninad Sathe, Vice principal and teacher of Rasashastra & Bhaishajya Kalpana department
3. Dr. Meenakshi Amrutkar, Reader of Rasashastra & Bhaishajya Kalpana department
4. Dr. Vaishali Khobragade, Lecturer of Rasashastra & Bhaishajya kalpana department
5. Dr. Ashish Punde, Lecturer of Rasashastra & Bhaishajya kalpana department

At Y.M.T. Ayurvedic Medical College, Kharghar, Navi Mumbai, for their encouragement & support.

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Conflict of Interest: *Non* *Source of funding:* *Nil*

Cite this article:

"A critical review of vyanga w.s.r. to melasma- classical and modern approach."

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Ayurlog: National Journal of Research in Ayurved Science- 2020; (8) (4):01-07