Review Article

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A SHORT REVIEW ON MUKHADUSHIKA WITH SPECIAL REFERENCE TO ACNE VULGARIS

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ABSTRACT

Acne Vulgaris is a chronic inflammatory disease of the pilo-sebaceous follicles characterized by papules, pustules and often scars, mainly on face and upper trunk. Acne Vulgaris is an almost universal skin disorder that affects 79 to 95% of adolescents. In the present era, owing to stress, growing pollution, changes in diet, changes in lifestyles, hormonal changes, the number of young people suffering from a very prevalent acne vulgaris issue. In Ayurveda it is termed as Mukhadushika or Yuvanpidika, In Sushruta Samhita Mukhadushika is mentioned under Kshudra Rogas. Acharya Sushruta has described Mukhadushika as the eruptions similar to Shalmali thorn on face especially of adolescents. Vitiating of Kaphadosha, Vatadosha and Rakta dhatu lead to Mukhadushika according to Ayurveda. Two main kinds of chikitsa are described i.e. Shodhana chikitsa and Shamana Chikitsa in Ayurveda treatment for Mukhadushika. This article aims to emphasize the details of Mukhadushika with Acne Vulgaris.

Keywords: Acne Vulgaris, Mukhadushika, Kshudra roga, Shalmali thorn.

INTRODUCTION

The skin is often referred to as the largest body organ and serves as the main protective barrier against damage to internal tissues from trauma, ultraviolet light, temperature, toxins and bacteria. Changes in the skin color may indicate homeostatic imbalance in the body. Everyone wants to look his/her face beautiful, clean and attractive. Even a small spot on the face especially of younger ones causes worry. Acne is the scourge of mankind and the travesty of youth. Some consider acne to be merely a cosmetic problem, but it may have significant and enduring emotional and psychological effects. Acne affects skin of the face, the upper part of the chest and the back. Acne vulgaris is self-limited disorder primarily in teenagers and young adult, although perhaps 10 to 20% of adults may continue to experience same form of diseases.¹ Acne is a disorder of the pilo-sebaceous apparatus characterized by comedones, papules, pustules, cysts and scars. Maharshi Charaka said that, 'the skin is one of the important sense organs in all of five-sense organ'. It is called as Sparshendriya which occupies whole body and Manna (Mind) also.² In Ayurveda texts there is a group of diseases called Kshudra Roga, which include 44 diseases. Mukhadushika is a disease that occurs as papules resembling the sprout on the bark of the shalmali tree (*Bombax malabaricum*) appearing on the face and adolescents caused by vitiated kapha, vatadosha and Rakta dhatu together which makes the face ugly and also known as Yuvanapidika.³ The main aim of this review article is detail study of Mukhadushika with Acne vulgaris.

Modern review of acne vulgaris

According to the Global Burden of Disease (GBD) study, Acne vulgaris affects approximately 85% of young adults with age group ranging from 12-25 years.⁴ Acne vulgaris is characterized by open and closed comedones, papules, pustules, cyst, nodules and scars. Open comedones are filled with blackhead and are

usually caused by outer environment. Closed comedones have white heads, usually caused by your own body. Comedones are usually about one millimeter in size. Acne can affect people of all ages, but it predominantly occurs during the teenage years.⁵ Acne vulgaris was found to be more common in urban boys than their rural counterparts. Acne vulgaris, one of the most commonly seen diseases in adolescence, is a chronic inflammatory disease of pilo-sebaceous units, characterized by the development of comedones in forms of papules, pustules and less commonly nodule.

Etiopathogenesis

The key components of etiology are increased sebum production, colonization of pilosebaceous ducts by *Propionibacterium acnes*, which in turn causes inflammation, hyper cornification and occlusion of pilosebaceous ducts.

Causes of acne vulgaris

Many factors combine to cause acne characterized by chronic inflammation around pilosebaceous follicles.

1) Sebum

Sebum excretion is increased. However, this alone need not cause acne; patients with acromegaly, or with Parkinson's disease, have high sebum excretion rates but no acne. Furthermore, sebum excretion often remains high, long after the acne has gone away.⁶

2) Hormonal

Androgens (from the testes, ovaries and adrenals) are the main stimulants of sebum excretion, although other hormones (e.g. thyroid hormones and growth hormones) have minor effects too. In acne, the sebaceous glands respond excessively to what are

usually normal levels of these hormones (increased target organ sensitivity). This may be caused by 5 α -reductase activity being higher in the target sebaceous glands than in other parts of the body. Fifty per cent of females with acne have slightly raised free testosterone levels, usually because of a low level of sex hormone binding globulin rather than a high total testosterone, but this is still only a fraction of the concentration in males and its relevance is debatable.

3) Poral occlusion

Both genetic and environmental factors (e.g. some cosmetics) cause the epithelium to overgrow the follicular surface. Follicles then retain sebum that has an increased concentration of bacteria and free fatty acids. Rupture of these follicles is associated with intense inflammation and tissue damage, mediated by oxygen free radicals and enzymes such as elastase, released by white cells.

4) Bacterial

Propioni bacterium acnes, a normal skin commensal, play a pathogenic part. It colonizes the pilosebaceous ducts, breaks down triglycerides releasing free fatty acids, produces substances chemotactic for inflammatory cells and induces the ductal epithelium to secrete pro-inflammatory cytokines.

5) Genetic

The condition is familial in about half of those with acne. There is a high concordance of the sebum excretion rate and acne, in monozygotic but not in dizygotic twins. Further studies are required to determine the precise mode of inheritance.⁷

Types of acne

Acne Vulgaris is divided into four grades according to its severity: first grade is some open or closed comedones with no inflammation; in second grade, skin has comedones and some pustules and papules, which look like small solid bump; third grade is papular Acne, which means having both papules and pustules; the fourth grade is nodulo-cystic Acne, which means including all forms of Acne comedones, papules and pustule. Both third and fourth grade indicate different degrees of skin inflammation and inter rupture of the sebaceous glands and they may leave scars if not carefully treated.

Course

Acne vulgaris clears by the age of 23–25 years in 90% of patients, but some 5% of women and 1% of men still need treatment in their thirties or even forties.⁸

Investigations

None are usually necessary. Cultures are occasionally needed to exclude a pyogenic infection, an anaerobic infection or Gram-negative folliculitis. Only a few laboratories routinely culture *P. acnes* and test its sensitivity to antibiotics.

Differential diagnosis

1. Acne Rosacea affects older individuals; comedones are absent; the papules and pustules occur only on the face; and the rash has an erythematous background.
2. Hidradenitis suppurativa is associated with acne conglobata but attacks the axillae and groin.

3. Pseudo folliculitis barbae, caused by in growing hairs, occurs on the neck of men with curly facial hair and clears up if shaving is stopped.

Treatment of acne

At some time, most teenagers try anti acne preparations bought from their pharmacist; local treatment is enough for most patients with comedo-papular acne, although both local and systemic treatment is needed for pustulocystic scarring acne.

Local treatment

1. Regular gentle cleansing with soap and water should be encouraged, to remove surface sebum. Antibacterial cleansers are also useful, e.g. chlorhexidine.
2. Benzoyl peroxide. This antibacterial agent is applied only at night initially but can be used twice daily if this does not cause too much dryness and irritation. It is most effective for inflammatory lesions.
3. Azelaic acid is bactericidal for *P. acnes*: it is also anti-inflammatory and inhibits the formation of comedones by reducing the proliferation of keratinocytes. It should be applied twice daily, but not used for more than 6 months at a time.

Systemic treatment

Antibiotics: tetracyclines

1. Oxytetracycline and tetracycline

An average starting dosage for an adult is 250 mg up to four times daily, but up to 1.5 g/day may be needed in resistant cases. The antibiotic should not be used for less than 3 months and may be needed for a year or two, or even longer. It should be taken on an empty stomach, 1 h before meals, or 4 h after food, as the absorption of these tetracyclines is decreased by milk, antacids and calcium, iron and magnesium salts.

2. Doxycycline

100 mg once or twice daily is a cheaper alternative to minocycline, but more frequently associated with phototoxic skin reactions.

Tetracyclines should not be taken in pregnancy or by children under 12 years as they are deposited in growing bone and developing teeth, causing stained teeth and dental hypoplasia. Rarely, the long-term administration of minocycline causes a grayish pigmentation, like a bruise, especially on the faces of those with actinic damage and over the shins.

3. Hormonal

A combined anti androgen–estrogen treatment (Dianette: 2 mg cyproterone acetate and 0.035 mg ethinylestradiol) is available in many countries and may help persistent acne in women.⁹

Review on Mukhadushika

In Ayurvedic texts the disease, Mukhadushika has not mentioned independently. It has been described with some minor diseases. This group of minor diseases is known as ‘Kshudra roga.’ According to Sushruta, 44 diseases have been described under this group; Mukhadushika is one of the diseases between them.

The Shalmali thorn like eruptions on the face of adults due to vitiation of Kapha, Vata and Rakta are known as “Yuvanpidika” or “Mukhadushika.”¹⁰ Acharya Vagbhata has mentioned the role of Meda in the pathology of Mukhadushika which resembles the modern theory of sebum involvement in the pathogenesis of acne.

Nidana

There are no specific etiological factors mentioned regarding the disease in the texts. All the Samhitas have mentioned Kapha, Vata and Rakta as the causative factors of the disease. Acharya Charaka has narrated involvement of vitiated Pitta along with Rakta in pathophysiology of pidika.¹¹ So involvement of Pitta should also be considered here. As Medogarbhata (filling Meda inside the Pidika) is one of the symptoms of the disease,¹² The causative factors which vitiate Meda can also be incorporated as Nidana of Yuvanapidika. Bhava Prakash mentioned that acne is caused due to Svabhava (behavioral changes). In Sharangadhara Samhita, it has been mentioned that acne is caused due to Shukradhatumala (by products during semen formation).¹³ The causative factors of acne are mainly divided into 4 types viz. Kalaja (age), Aaharaja (diet), Viharaja (physical activities) and Manasika (psychological).

- **Kalaja-** Vasanta Ritu, Grishma Ritu, Sharad Ritu, Tarunya (Young age).
- **Aharaja;** Excess intake of Katu, Tikta, Amla, Lavana Rasa, Snigdha, Guru, Picchila, Abhishyandi Aharsevana, Ushna Tikshna Ahar.
- **Viharaja;** Divaswapa, Excess Atapasevana, Ratri jagarana, Vegavarodha.
- **Manasika;** Atichinta, Atikrodha, Atibhaya, Udvega, Svabhava.

Purvarupa (Premonitory symptoms/signs)

Yuvanapidika Purvarupa is not specifically mentioned by any Acharyas. It may be as followed- Kandu (itching), Todwatvedana (pain), Shotha (swelling), Vaivarnya (skin discoloration).

Rupa

Acharya Vagbhata has described the signs and symptoms in more details than Acharya Sushruta.¹⁴

- Pidika – means eruption. The disease is in the form of eruptions.
- Saruja – The eruptions are painful. The pain may be mild or acute in nature.
- Ghana – means thick, hard or indurate. So, the eruptions of the disease are hard and thick.
- Medogarbhata – The eruptions are impregnated with Meda. Meda is known as comedone.
- Yuna Mukha – This disease occurs on the face of adults.

According to Sushruta –

- Shalmali–Kantakprakhya- It explains the shape of the pidika. Shalmali Kantaka has a conical shape. In most of the patients, shape of the pidika is found to be conical.
- Yunam-vaktrey- This explains the site of the disease and the age in which it occurs. Disease occurs in the face i.e. cheeks, chin, nose and forehead. It is seen in the youth i.e. adolescent age group.

Samprapti of Mukhadushika

The accurate knowledge of Samprapti helps in the understanding of the specific feature and it is very essential for the line of treatment. In the discussion of Samprapti of any disease, the components to be essentially considered are Doshas, Dushaya, Srotas, Agni, Ama and Sthanasamshraya of Doshas at the point of Khavaigunya producing a disease. According to Acharya Sushruta, the disease Yuvanapidika is due to disturbed state of Kapha, Vata and vitiation of Rakta Dhatu. The exact description about the disease process is not available and the involvement of Pitta Dosha is also not explained in any of the Ayurvedic text. But when Rakta is involved, Pitta will automatically be vitiated, because the aggravating factors for both Rakta and Pitta are similar. According to Acharya Charaka Pitta is most essential in the formation of Pidaka. As mentioned earlier all the three Doshas as well as Rakta, Meda and Shukra Dhatu are involved directly or indirectly in the Samprapti of the disease. Though Vyaktisthana of the Pidaka is on the skin, involvement of Rasa Dhatu can also be considered here.

Samprapti Ghataka

- Dosha – Kapha, Vata, Rakta
- Dushya – Rasa, Rakta, Meda, Shukra
- Srotas – Svedavaha, Rasavaha, Raktavaha
- Mala – Sweda, Tvaka Sneha
- Srotodusti – Sanga, Atipravritti
- Agni – Jatharangimandya
- Udbhavasthana – Amashayasamuttha
- Roga Marga – Bahya

Chikitsa of Mukhadushika

Line of treatment prescribed by different Acharya can be summarized as follows.

- Sushruta – Vamana, Lepan¹⁵
- Ashtanga Hridaya – Lepana, Vamana, Nasya, Shiravyadh¹⁶
- Bhavprakash - Lepa, Vamana, Abhyanga¹⁷
- Yoga Ratnakara - Siravedha, Pralepa, Abhyanga¹⁸
- Sharangadhara Samhita - Lepa¹⁹
- Bhaishajjya Ratnavali - Siravedha, Pralepa, Abhyanga²⁰

In Ayurvedic texts mainly following two therapies are to be advised for the disease Mukhadushika as-

Shodhan Therapy- Vamana, Virechan, Nasya, Raktamokshna etc. Shaman Therapy- Internal medicine and external applications of drugs.

Shodhana Chikitsa

Acharyas have mentioned Vamana, Virechana, Nasya and Raktamokshana as Shodhana therapy in the treatment of Mukhadushika.

a. Vamana

Vamana Karma to cure the disease has been mentioned by Acharya Sushruta and Vagbhata. As Vamana is the main therapy for Kaphaja abnormalities, Kapha is one of the main Dosha involved in the pathogenesis.

b. Virechana Karma

This therapy is indicated specially to subside Pitta Dosha or Pitta Sansargaja Dosha. The purgative drugs expel the excess Pitta

from the Guda Marga. Property of Rakta is analogous to Pitta Dosha, there for Virechana is also effective in Raktaja Vikara. Acharya Charaka has explained Upvasa, Virechana and Raktasrava as treatment modalities in Raktaja and Pittaja Vikara. There are many studies have been done where Virechana shows significant effect on management of different skin diseases.

c. Nasya

Nasya Karma for the treatment of Mukhadushika has been indicated by Vagbhata. Acharya Charaka has also mentioned the Nasya Karma in Urdhva Jatrugata Vikara.

d. Raktamokṣana

Acharya Vagbhata and Chakrapāṇi have mentioned Raktamokṣana as a treatment for Mukhaduṣhika. Acharya Charaka has opined Raktamokṣana in all the Raktaja diseases, while Acharya Sushruta has mentioned it in some Kṣudra Roga. Acharya Vagbhata has indicated Siravedha of Lalata region, where frontal and temporal veins are found.

Shamana Chikitsa

a. Internal medication

According to Doṣha and symptoms of Mukhadushika drugs having Kapha Vatahara properties, Strotoshodhaka and which purifies the blood can be used internally. Some herbal drugs useful in the treatment of Mukhadushika are Shalmali, Haridra, Sariva, Vacha, Dhanyaka, Lodhra, Daruharidra, Manjistha, Nimba, Khadira, Guduchi, Methika, Jatiphala and Kakamachi.

b. External medication

Ayurveda classical texts have stated numerous external medications for Mukhaduṣhika and other Kṣudra-roga. Several lepas used in treatment of Mukhadushika are Yashtimadhvadi Lepa, Kaliyakadi Lepa, Sharapunkhadi Lepa, Masuradi Lepa, Lodhradi Lepa, Shalmalikantakadi Lepa, Arjunadi Lepa, Jatiphadi Lepa, Siddharthadi Lepa, and Marichyadi Lepa.

CONCLUSION

Mukhadushika is well explained in Ayurvedic Samhita. The ancient knowledge of Ayurveda will help in diagnosis and management of Mukhadushika in present era very well. So, its review article is an attempt to highlight the details of Mukhadushika co-relating with acne vulgaris.

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