A review on Yuvanpitika with special reference to Acne Vulgaris

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Abstract

Acne vulgaris is a chronic inflammatory condition of skin in youth. In Ayurveda, acne has been elaborated as one of the Kshudra Rogas (minor ailments). It is manifested in adolescence thus called as Yuvanpidika or Tarunyapitika. Symptoms of Mukhadushika show close resemblance with bacterial infection and inflammatory factors of acne. According to Ayurveda, vitiation of Kapha dosha, Vata dosha and Rakta dhatu lead to acne development. Kapha vitiation may resemble with excess sebum production, Vata vitiation may resemble with hyperkeratinization and Rakta vitiation may resemble with inflammatory mediators in blood, play an important role in pathogenesis of acne. Both modern and Ayurvedic sciences have considered the use of topica as well as oral medications and their combinations for the treatment of acne. Modern medications provide relief from acne vulgaris but cause noticeable side effects. In Ayurveda, acne has been treated mainly by Shodhana (purification of body) and Shamana (conservative treatment) Chikitsa or combination of both. Though, several Ayurveda texts such as Sushruta Samhita, Ashtanga Hrudaya etc., have elaborated the pathophysiology and treatment of acne, 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 acne vulgaris.

Keywords: Acne vulgaris; Kshudra Roga; Yuvanpidika; Tarunyapitika; Mukhadushika

1. Introduction

Acne is a common chronic inflammatory condition of skin with significant cutaneous and psychological disease burden[6]. Acne affects both males and females, although males tend to have more with onset of puberty. Across the globe, acne affects 80% of individuals between pubescence and 30 years of age. Many research studies have reported acne in 79–95% in the age group of 16-18 years. In India, research studies have reported acne in 50.6% of boys and 38.13% of girls in the age group of 12-17 years[2,3]. Though, acne is not a life-threatening condition, the complications of acne such as permanent scarring effects on the quality of life and emotional well-being of person.[4,5]

Acne vulgaris is related to the pilosebaceous follicle. It is considered as adolescent disorder which is characterized by formation of open and closed comedons, papules, pustules, nodules and cysts. According to studies, several factors such as disturbed hormonal (androgen) production, excess sebum production, hyperkeratinization are involved in pathophysiology of acne. Accumulation of excess sebum, epithelial cells and keratin obstruct the pilosebaceous follicle. This obstruction causes formation of a keratin plug and follicle swelling below skin surface, resulting in acne lesion[6,7]. Colonized bacteria of skin such as P. acnes may cause severe kind of infection which leads to scarring and unpleasantness of face[7,21]. In modern medicine, several treatments are available for acne vulgaris but treatment must

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comply with type and severity of the lesions. Treatment mainly includes prolonged use of antibiotics, comedolytic and anti-inflammatory agents. Though, these medications are better treatment options for acne management, the side effects of these medications such as increase frequency and severity of skin dryness, scaling, erythema, burning, stinging, itching and bacterial resistance limits their use[11,13].

In Ayurveda, acne has been elaborated as one of the Kshudra Rogas (minor ailments). Acne is called as Yuvanpidika and Tarunyapitika as it manifested in Yuva or Taruna (adolescence). As the disease has local spread over the face and due to the inflammatory and scarring nature of lesions, acne is also called as Mukhadushika[14,15]. Yuvanpidika or Tarunyapitika or Mukhadushikais characterized by Saruja (mildly painful), Ghan (firm on touch), Medogarbha (filled with oil /sebum) and shape of Shalmali Kantaka (thorn of Salmalamalabarica)[16,17]. Many authors elaborated that acne is caused due to vitiation of Kapha and Vata doshas and Rakta dhatu. Vitiated doshas and dhatu cause obstruction of Lomakup (pilosebaceous unit) of skin which causes acne. Further, rupture of acne causes scar formation. Also, vitiation of Vata and Rakta leads to hyperpigmentation of skin[18,19]. In Ayurveda, mainly two types of Chikitsa (treatments) have been used to treat acne i.e. Shodhana (purification of body) and Shamana (conservative treatment by oral and topical medicines). Shodhana includes Yamana and Nasya, whereas Shamana includes Lepa, Upanah and Kshara application. Also, several Ayurvedic proprietary medicines are available in the market for the treatment of acne.[20,22]

Ayurveda texts such as Sushruta Samhita, Sharangadharma Samhita, Chakradatta etc., have elaborated the pathophysiology and treatment of acne. There are few published articles on pathophysiology and treatment of acne vulgaris with regards to Ayurveda but the available references are scattered. Hence, there is need of in-depth review and compilation of Ayurvedic texts and literatures for better understanding of Yuvanpidika or Tarunyapitika or Mukhadushika and its comparison with acne vulgaris described in modern science. Subsequently, it is also important to share the traditional knowledge of Indian system of medicine i.e. Ayurveda to offer safe and effective alternative for acne vulgaris.

### 2. Kshudra Roga (minor ailment)

Kshudra Rogas (minor ailments) are described in Charaka Samhita, Sushruta Samhita, Ashtanga Hrudaya, Madhava Nidana, Yogaratnakar, Bhavaprakash, Chakradatta etc. The word Kshudrameans ‘minimum’ i.e. with minimum Hetu (causative factors), Lakshana (signs & symptoms) and Chikitsa (treatment) and Rogas meaning diseases. Hence, Kshudra Rogas are diseases which have minimal causative factors, signs and symptoms and which need minimal treatment to cure. In Kshudra Roga, mainly Rakta dhatu (blood) and Mamsadhatu (muscles) are vitiated. Kshudra Rogas are mainly explicated through the Twaka (skin). Sushruta has quoted 44 Kshudra Rogas, Vagbhata has mentioned 36 whereas Madhava has mentioned 43 Kshudra Rogas in their texts. Yuvanpidika (acne vulgaris) is one of the Kshudra Rogas described in various Ayurveda text[21].

According to Ayurveda, healthy skin is a result of overall health condition of individuals. Skin is formed by the Paka (metabolism) of Rakta dhatu (blood) by its Dhavagni (metabolism inducing agent) during intrauterine life. Sushruta has elaborated the formation of Twaka by an excellent example. According to Sushruta, after the Paka of Rakta dhatu, it becomes dry (due to Vata) in the form of skin like deposition of Santani (artificial cream) on the surface of boiling milk. This elaboration suggests that Rakta dhatu (blood) is basic element in formation of skin during intrauterine life. [23] Rakta (blood) nourishes the skin through-out the life. Thus, impurities (inflammatory mediators) in blood explicate by skin in the form of Kshudra Rogas including Yuvanpidika (acne). Twaka (skin) is the Moolsthana (primary site) for acne formation hence acne is considered as ‘Twagdosha’.

In ancient period (2 B.C.), Yuvanpidika was first described in ‘Tristreshniya Adhyaya’ of Charaka Samhita. Charaka has mentioned that Pidika (pimple) is Bahya Roga (external disease) and Marga Ashrita Roga (disease caused due to obstruction. Sushruta has also described Yuvanpidika or Mukhadushika in Kshudra Roga Nidana Adhyaya (13th Chapter) of Nidana Sthana. He also described the treatment of Yuvanpidika in Kshudra Roga Chikitsa Adhyaya (20th Chapter) of Chikitsasthana[24]. Likewise, Yuvanpidika has been described by Madhava, Vagbhataand Yogaratnakar under Kshudra Roga chapter in their text.

### 3. Causative factors of Yuvanpidikavis-à-vis Acne vulgaris

In Ayurveda, very short description is available about causative factors of acne. In Ayurveda texts, it has been mentioned that almost all the diseases are attributed to an abnormality of 3 doshas and 7 dhatus or dushyas. Components which cause Dushti (abnormality) in functions of these doshas and dhatus are considered as causative factors for acne. Kapha dosha (oily in nature as sebum), Vata dosha (dry in nature) and Rakta dhatu (blood) are main SampraptiGhataka (main
pathophysiological components) in the development of acne. According to Sushruta, Raktadhatu Dushti (blood impurities) is one of the main pathogenic factors of acne formation. Sushruta described that several other important local and systemic pathogenic components related to sexual changes during adolescence are also responsible for acne formation. The causative factors of acne (Table 1) are mainly divided into 4 types viz. Kalaja (age), Aaharaja (diet), Viharaja (physical activities) and Manasika (psychological). Ayurveda, sexual changes depending upon the age are considered as important causative factors for acne formation. In Kashyapa Samhita, it has been mentioned that at the age of 16 years, the changes in secondary sexual characters (including changes in sexual organs) start and also Shukra dhatu (semen) development occurs. It has been also elaborated that these changes of sexual characters occur due to the combined and forceful action of Pancha Mahabhutas during the young age or adolescence. Other authors such as Sushruta and Vagbhata have also explained that Mukhadushika (acne) primarily occurs during adolescence. Bhavaprakasha mentioned that acne is caused due to Svabhava (behavioral changes). In Sharangadhar Samhita, it has been mentioned that acne is caused due to Shukradhatumala (byproducts during semen formation).

According to modern science, several causes such as excess androgen secretion, bacteria etc., play an important role in pathophysiological process of acne. The precise mechanism of acne is not known but there are four major factors responsible for acne formation: First, increased and altered sebum production under androgen control (or increased androgen sensitivity); second, follicular hyperkeratinization (process leading to comedones); third, proliferation and colonization by Propionibacterium acnes (P. acnes) and Staphylococcus epidermidis and fourth, release of inflammatory mediators including cytokines.

4. Types of Yuvanpidika vis-a-vis Acne vulgaris

In Ayurveda, there is no specific description on types of acne. But many Ayurvedic physicians use anti-acne medicines as per the pathological factors i.e. vitiated Vata, Kapha, Pitta and Raktadhatu. Thus, acne may be classified on the basis of these pathological factors. According to characters of doshas and dhatus involved, acne is categorized in four groups’ viz. Vataja, Pittaja, Kaphaja and Raktaja. If there is intense itching, scaling, dryness, blackish coloration of acne lesion then it is called as Vataja Yuvanpidika. In case of Pittaja and Raktaja Yuvanpidika symptoms such as redness, heat and pus at acne lesion occurs. If there is increased oiliness and pus at acne lesion, that acne is called as Kaphaja Yuvanpidika.

In 1990, American Academy of Dermatology developed a classification scheme for primary acne vulgaris. This grading scale delineates three levels of acne: mild, moderate, and severe.\(^{[26]}\) Mild acne is characterized by the presence of few to several papules and pustules, but no nodules. Patients with moderate acne have many papules and pustules, along with a few to several nodules. With severe acne, patients have numerous or extensive papules and pustules, as well as many nodules.

5. Pathophysiology of Yuvanpidikavis-à-vis Acne vulgaris

According to Ayurveda, Samprapti (pathophysiology) of acne is complex process. Initially, causative factors vitiate Kaphadosha, Vata dosha and Raktadhatu. These vitiated elements go in the skin and obstruct the skin pores i.e. Lomakup (pilosebaceous unit).

Obstruction of Lomakup (pilosebaceous unit) leads local swelling and microcomedones formation. Paka (metabolism) of these elements in microcomedones cause pustule, papule and cyst formation. Rupture of these microcomedones leads to Vrana Vastu (scar) formation\(^{[27, 28]}\).

Also, Vata dosha and Raktadhatu cause hyperpigmentation of skin which leads to Vyanga (black spotting) formation\(^{[25]}\).

As per modern medicine, though the pathophysiology of acne is multifactorial process; the initial stage of acne formation is obstruction of sebaceous gland. Pathophysiology of acne vulgaris starts at adolescence when hormonal changes (androgens) are on peak in the body. Locally on the skin, androgens are involved in the regulation of cell proliferation and lipogenesis\(^{[29]}\).

Hormones may also play a role in the follicular hyperkeratinization. The skin surface in acne prone areas is colonized with Staphylococcus epidermidis and Propionibacterium acnes. It is widely accepted that acne vulgaris is induced mainly by inflammatory reaction however, it is by no means clear that either bacteria or bacterial products initiate follicular inflammation. Despite this, some experimental studies have suggested that P. acnes are the main organism which plays an important role in pathogenesis of acne vulgaris. The overgrowth of P. acnes hydrolyses sebum.
triglycerides, producing free fatty acids and release inflammatory mediators (cytokines) which may lead to inflammatory lesions including papules, pustules, cysts and nodules.

6. Treatment of Yuvanpidikavis-à-vis Acne vulgaris

As per Ayurveda, treatment for acne is mainly divided into two types, i.e. medicinal treatment and surgical treatment[20].

6.1. Medicinal Treatment

Classical medicinal treatment for acne is of two types i.e. Shodhana (purification) and Shamana (conservative) Chikitsa. Vitiated doshas are expelled out of body by Shodhana Chikitsa, whereas Shamana Chikitsa corrects vitiated doshas instead of expelling out from the body. Sushruta has elaborated Vamana (emesis) as Shodhana Chikitsa. Vamana is one of best abutting therapy along with topical and oral Ayurveda formulations in acne vulgaris[30]. Vamana is a procedure in which doshas are eliminated through upper channels i.e. mouth. It helps to prevent the forthcoming diseases due to Kapha and Pitta. Nasya i.e. introduction of medicines through the nasal cavity is another type of as Shodhana Chikitsa used to treat acne. Nasya is a type of systemic therapy for acne elaborated by Vagbhata in his texts. In Nasya, different types of oils, powder, etc., have been used to treat acne.

Shamana Chikitsa includes use of topical as well as oral formulations such as pills, pastes, oils, scrubs, etc.[31] These formulations normalize the vitiated doshas. Many classical Ayurvedic formulations are also available in the market in convenient dosage forms for conservative management of acne vulgaris. These classical therapies have not only been used to cure acne but also for rejuvenation of the skin.

6.2. Herbs and their action[32]

- Lodhra
  - Symplocosracemosa
    - Anti-bacterial, Anti-inflammatory, Anti-septic
- Vacha
  - Acorus calamus
    - Anti-bacterial, Anti-inflammatory
- Dhanyaka
  - Coriandrum sativum
    - Anti-bacterial, Anti-septic
- Yashtimadhuuka
  - Glycyrrhiza glabra
    - Skin Soothing, Regulates sebum production, Useful in hyperpigmentation, Blood purifier, Anti-bacterial
- Shalmali
  - Salmaliamalabarica
    - Anti-bacterial, Anti-inflammatory, Effective in Acne vulgaris
- Danuharidra
  - Berberis aristata
    - Analgesic, Anti-bacterial, , Anti-dermatitis
- Jatiphala
  - Myristica fragrans
    - Rectify uneven skin pigmentation, Inhibits melanin biosynthesis, Anti-inflammatory
- Manjishtha
  - Rubia cordifolia
    - Useful in hyperpigmentation, Increase skin complexion & skin-glow, Anti-oxidant, Anti-inflammatory
- Nimba
  - Azadirachta indica
    - Anti-bacterial, Useful in various skin Disorders, Anti-septic
- Khadira
  - Acacia catechu
    - Anti-bacterial, Overall skin disorders like Anti-Eczema, Anti-scabies, Anti-dermatitis
7. Discussion

Acne is one of the most common skin problems in all over the world treated by dermatologists. Adolescents are mostly susceptible to acne, but it can occur in any age group. Several Ayurveda texts including Sushruta Samhita, Ashtanga Hrudaya Bhavaprakash, Chakradatta Tika, Yogaratnakar, Charaka Samhita, Sharangadhar Samhita and modern literatures have been reviewed concerning with acne vulgaris. After review, it has been observed that both sciences have shown great similarity in the understanding of acne vulgaris in terms of causative factors, onset of symptoms, age factors, pathophysiology and methods of treatment of acne vulgaris. Acne has been elaborated in Ayurveda as a Kshudra Roga (minor ailment), as it is not a serious or life threatening disorder but it seriously impacts quality of life of person. Yuvanpidika or Tarunyapitika or Mukhadushika are the terminologies used in Ayurveda to define the acne. Yuvan or Yauvana and Tarunya are related to age factors i.e. adolescence (youthfulness) and physical changes that occur during the young age. According to Ayurveda and modern science, behavioral changes during adolescence such as anger and stress have also been considered as contributory factors for acne development. In the definition of Mukhadushika, the word Dushika can resemble with inflammatory mediators and bacteria that cause acne vulgaris. The word, Paka (metabolism) also may resemble with inflammatory pathophysiological factors of acne. In the Samprapti (pathophysiological) process of acne, factors stated by Ayurveda such as vitiated Kapha, Vata and Rakta can resemble with modern pathophysiological factors such as excess sebum production, hyperkeratinization and blood impurities, respectively. Vata is known to have Pravartaka i.e. stimulant action (for hyperkeratinization), whereas Kapha is oily in nature.[34]

As far as the treatment of acne 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 the acne, similarly Ayurveda has also advised Raktamokshana (bloodletting) for severe cases of acne.[35]

Ayurveda believes in expelling the root causes of acne by advising Shodhana Chikitsa.

Modern science also aims at eliminating one of the main factors of acne i.e. P. acnes bacteria 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.[36]

In the present review, an effort is made to compile scattered references of acne under one roof and also a comparison is made between Ayurveda and modern medicines with regards to understanding of acne. Looking at the incidence of acne in the society, continuous efforts have to be made towards development of newer effective and safe remedies for the treatment of acne. Looking at in-depth knowledge, Ayurveda can certainly contribute in the development of newer effective and safe remedies for the treatment of acne.

8. Conclusion

This study infers that Ayurveda formulations can be used to support the management of acne vulgaris when a suitable diet and lifestyle are practiced.
Compliance with ethical standards

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Disclosure of conflict of interest

There are no conflicts of interest.

References


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He is working as an Ayurved Physician, Panchakarma Specialist since 17 Years. He is a FORMER BOARD OF STUDIES MEMBER for Paraclinical Ayurved Board of Maharashtra University of Health Sciences Nashik. He is a FORMER FACULTY MEMBER for Post Graduate Paraclinical Ayurved Board of Maharashtra University of Health Sciences, Nashik. He is working as a Research Faculty for Research Methodology and Medical Statistics of Maharashtra University of Health Sciences, Nashik. He is a Ph.D. GUIDE for Eight Ph.D. Kayachikitsa (Medicine) students and M.D. GUIDE for 20 M.D. Kayachikitsa (Medicine) students out of which 21 M.D. Kayachikitsa (Medicine) students. His research experience is 15 Years. His research interest in Anxiety Disorder, Diabetes Mellitus, Obesity, Hyperacidity, Diarrhoea, Anaemia, Infertility etc.