CellMed
Cellmed Orthocellular Medicine and Pharmaceutical Association

Original Article

An overview of Acne Vulgaris (*Busoor Labaniya*)

Mehnaz[1], Yasmeen Shamsi[2*], Md. Wasi Akhtar[3], Sahar Zaidi[4,] Sujata Mohanty[5], Sayeed Ahmad[6]

[1]PG Scholar, [2]Professor, [3]Assistant Professor, Dept. of Moalajat, Jamia Hamdard, New Delhi, India, [4]Assistant Professor, Dept. of Physiotherapy, Jamia Hamdard, New Delhi, India, [5]Professor, Centre of excellence for Stem Cell, AIIMS, New Delhi, India, [6]Associate Professor, Dept. of Pharmacognosy, Jamia Hamdard, New Delhi, India

ABSTRACT

Acne vulgaris is a common dermatological condition affecting the pilosebaceous units and having a multifactorial etiology. In Unani terminology, acne vulgaris is referred as *Busoor Labaniya,* characterized by white lesions on the face, nose, and cheeks; on squeezing, release cheesy material. In conventional medicine, mild cases are best addressed with topical regimens**,** but more severe cases require systemic medications**.** Retinoids (retinoic acid, adapalene, isotretinoin, tazarotene), benzoyl peroxide, clindamycin, erythromycin, and azelaic acid are a few examples of topical medications, whereas systemic drugs include antibiotics (Doxycycline, minocycline, erythromycin, azithromycin). In the Unani System of Medicine, numerous single and compound drugs have been used to treat *Busoor Labaniya*. These drugs are considered harmless and do not have any major side effects. In Unani system of medicine, acne vulgaris is effectively managed with natural medicines as well as therapeutic regimens with minimal side effects even after long-term usage. Acne vulgaris is usually treated with systemic blood purifiers along with topical Unani drugs. Hence, clinical studies with proper scientific parameters are needed to be conducted to establish and validate their efficacy in the prevention and control of acne vulgaris.

Keywords *Busoor Labaniya, Comedones, Pilosebaceous unit, Propionibacterium acnes*

INTRODUCTION

Acne vulgaris or acne simplex is a chronic inflammatory condition affecting the pilosebaceous units and having a multifactorial etiology. The disease exhibits both non-inflammatory and inflammatory skin lesions. Non-inflammatory lesions are called comedones, which consist of closed (whiteheads) or open (blackheads) comedones. Inflammatory lesions consist of papules, pustules, nodules, and pseudocysts (Tan, *et al.*, 2015) (Bhat, *et al.,* 2016). Acne is most commonly observed on the face (90%), upper back (60%), and chest (15%), since these areas have a high number of sebaceous follicles and is rarely seen on the thighs and buttocks with a bilaterally symmetrical pattern (Azahar, *et al.,* 2020). Acne may occasionally lead to post-inflammatory hyperpigmentation, scarring, and keloid formation on healing (Okoro, *et al.,* 2016). Despite its self-limiting nature, it remains fairly common among adults. Approximately 90% of teenagers suffer from acne for an extended period, and nearly half of them continue to have it in their adulthood. By the age of 40 years, about 5% of females and 1% of males suffer from acne lesions (Dawson , *et al.,* 2013)**.**

*Correspondence: Yasmeen Shamsi
E-mail: yshamsi@jamiahamdard.ac.in
Received Mar 24, 2022; **Accepted** May 20, 2022; **Published** May 31, 2022
doi: http://dx.doi.org/10.5667/CellMed.2022.009

In Unani terminology, acne vulgaris is referred as *Busoor Labaniya,* where *Busoor* means eruption and *Labaniya* means milky. Ibn Sina described *Busoor Labaniya* as small, white eruptions that appear on the nose and cheeks resembling as condensed drop of milk (Ibn-e-Sina, 2010)**.** Azam Khan and Tabri explained that, this disease is characterized with whitish eruptions over the face and cheeks that appear as '*Nuqtae Sheer'* (drops of milk). When these eruptions are pressed, oily secretion oozes out resembling to *Roghan-e-Zard* (clarified butter). *Busoor Labaniya* most commonly occurs around the age of puberty. Zakariya Razi introduced a special type of eruption '*Atiasoos',* which are small, dry rashes occurring on the face, hard in consistency and chronic in nature. (Tabri, 1997) (Khan, 1917). It is a *Muttaaddi* (infectious) disease characterized by white lesions on the face, nose, and cheeks; on squeezing, release cheesy material. Ahmad bin Tabri referred *Busoor Labaniya* as '*Zeezan',* which appears over the face (Tabri, 1997).

PATHOPHYSIOLOGY OF DISEASE

Acne is caused by a variety of factors, including (i) Hyperkeratinization of the hair follicles, (ii) Excessive sebum production by the sebaceous glands, (iii) Colonization of *Propionibacterium acnes* in the pilosebaceous ducts, and (iv) Inflammation of the skin through the release of inflammatory mediators.

In acne vulgaris, abnormal desquamating of epithelial cells and follicular obstruction occur under the influence of

androgen production, resulting in the production of microcomedones. Microcomedones cannot be seen with the naked eye, but eventually develop into visible lesions. At puberty, increased sebum production is associated with the concentration of androgens in the bloodstream. Thus, follicles are filled with lipid-rich material, forming noticeable open and closed comedones. The sebum provides an ideal environment for bacteria to flourish; therefore, *P.* acnes proliferate easily. The chemical mediators released by *P. acnes* are largely responsible for causing inflammation, which plays a significant role in acne's pathogenesis. Moreover, continuous production of sebum and keratin leads to the rupturing of comedones into the dermis which ultimately provokes inflammation. Papules, pustules, nodules, and cysts are all caused by this inflammation in the dermis. Further, severe inflammation results in scars (Follador, et al., 2006) (Dawson , *et al.,* 2013) (Bhate , *et al.,* 2012)**.** High glycemic or fat rich diet, dirty and humid environment, use of drugs like Phenytoin, Isoniazid, Phenobarbital, Lithium, psychological distress, sedentary lifestyles, and genetic and hormonal factors can also contribute to acne vulgaris (Suva, *et al.,* 2014) (Bhat, *et al.,* 2016).

Unani concept

Busoor Labaniya (eruptions of milk) due to whitish discharge, is a chronic inflammatory disease of the sebaceous glands and pilosebaceous structures of the skin (Ibn-e-Sina, 1930), (Samarqandi, 1999), (Arzani, 1956) The main cause of *Busoor Labaniya* is inflammation of *Ghudud-e-Duhniya* (sebaceous glands), secondary to increased production of oily material that obstructs the openings of these glands. Later on, these glands become inflamed, suppurated, and filled with pus (Arzani, 1956) (Samarqandi, 1999).

According to another theory, a yellow *Madda-e-Sadeedi* (pus-like substance) reaches the skin under the influence of increased abnormal heat and does not resolve easily from the pores results into *Busoor Labaniya* (Kabiruddin, 2009). *Busoor Labaniya* is a skin disease affecting adolescents, it appears as whitish eruptions over the face, produced by *Mādda Ṣadīdīyya* (purulent material); the excessive heat of the body expels out this *Mādda Ṣadīdīyya* to the external surface of the skin where it gets accumulated in the form of *Busoor* (Kabiruddin, 2009) (Baghdadi, 2007) (Tabri, 1997) (Arzani, 2002) (Khan, YNM) (Geelani, 1996).

CLINICAL FEATURES

The Eruption of acne vulgaris is polymorphic, characterized by comedones, papules, pustules, nodules, and cysts. Comedones are non-inflammatory pathognomonic lesions recognized by two main types: open and closed. Open comedones or blackheads occur as a result of keratin and sebum clogging the pilosebaceous orifice on the surface of the skin, while closed comedones or whiteheads develop as a result of sebum and keratin deposition in the pilosebaceous duct below the skin surface (Khanna, 2011) (Boon, *et al.,* 2010). Inflammatory lesions are papules, pustules, nodules, and cysts.

According to severity, acne can be classified as mild, moderate, and severe. Mild acne has non-inflammatory lesions with few inflammatory lesions and is restricted to the face. Acne with moderate severity has an increased number of inflammatory lesions mostly papules and pustules, and it usually appears over the face and often on a minor area of the trunk. Severe acne manifests as nodules and cysts over the face and often on the trunk (Dawson , et al., 2013) (Mitachell, *et al.,* 1996).

MANAGEMENT

Conventional therapy

Mild cases are best addressed with topical regimens**,** but more severe cases require systemic medications**.** Retinoids (retinoic acid, adapalene, isotretinoin, tazarotene), benzoyl peroxide, clindamycin, erythromycin, and azelaic acid are a few examples of topical medications, whereas systemic drugs include antibiotics (Doxycycline, minocycline, erythromycin, azithromycin). These medications can minimize the severity and reduce scarring, but they can also cause adverse effects like skin dryness, redness, burns as well as acne recurrence. Therefore, it is still important to treat acne with impeccable treatment. The treatment is intended to alleviate distress, improve skin appearance, prevent scarring, and restore emotional well-being and self-esteem (Azahar, *et al.,* 2020) (Nasri, *et al.,* 2015) (Larson, *et al.,* 2012).

Physical Therapy

Some other therapies are also used in the treatment of acne, like cryotherapy, laser therapy, and photodynamic therapy (Bhat, *et al.,* 2016). The benefits of light devices and lasers have been demonstrated in the treatment of papulopustular acne and comedonal acne, but with limited evidence to recommend them as routine. Photodynamic therapy has been found to be effective in reducing inflammatory acne lesion count in treating actinic keratoses by generation of reactive oxygen species (Boen M *et al.,* 2017) Light therapy is thought to affect acne vulgaris through bactericidal and anti-inflammatory effects and reduces macrophage cytokine production, has photothermal effects on the sebaceous gland, and leads to formation of reactive oxygen species (Momen S & Al-Niaimi F, 2015). Non-ablative lasers, 1450 nm diode laser and the long-pulsed dye laser are cleared by FDA as effective for treatment of scars in acne vulgaris (Alexiades M, 2017; Cohen BE *et al.,* 2016). Microcurrent therapy accelerates targeted tissue healing by stimulating cell proliferation and growth and greater ATP generation in exposed tissue (Mercola JM & Risch DL, 1995). Gold-plated silica core light-absorbing microparticles in conjunction with light and laser therapy showed statistically significant improvement in inflammatory acne after 1–3 months of treatment (Paithankar DY *et al.,* 2015; Trivedi MK *et al.,* 2018). A moderate reduction in acne was also seen after vacuum-assisted 1540 nm erbium glass laser in the treatment of moderate acne vulgaris (Politi Y *et al.,* 2015). Future studies to investigate the appropriate dosimetry of LASER are warranted.

Unani Pharmacotherapy:

In the Unani System of Medicine, numerous *Mufrad* (single) and *Murakkab* (compound) drugs have been used to treat *Busoor Labaniya*. These drugs are considered harmless and do not have any major side effects. The drugs having *Jāli* (Detergent), *Muhalil* (Resolvent), *Mussaffi dam* (Blood purifier), and *Mujaffif* (Desiccative) properties have been used to treat *Busoor Labaniya* (Azahar, *et al.,* 2020)

Mufrad Drugs (Single drugs) used for the management of acne:

- *Jali* (Detergent agents): *Chana (Cicer arietinum), Haldi (Curcuma longa), Sandal Sufaid (Santalum album),*

Masoor (Lens esculenta), Post Sangtara (Citrus aurantium), and *Neem (Azadirachta indica)*

- *Muhallil* (Resolvent): *Alsi* (*Linum usitatissimum*), *Methi* (*Trigonella foenum-graecum*), *Khatmi* (*Althaea officinalis*), and *Revand Chini* (*Rheum emodi*)
- *Mussaffi dam* (Blood purifier): *Shahtara* (*Fumaria indica*), *Chiraeta* (*Swertia chirata*), *Sarphoka* (*Tephrosia purpurea*), *Unnab* (*Zizyphus vulgaris*), and *Neem* (*Azadirachta indica*) (Kabiruddin, YNM)

Compound formulations for local application having drugs with *Mujaffif* (desiccant or drying) and *Muhallil* (emollients) properties beneficial for *Busoor Labaniya:*

- *Kharbaq abyaz* (*Picrorhiza kurroa*) and *Ersa* (*Iris ensata*)
- *Tukhm Kataan* (*Linum usitatissimum*) along with Borax
- *Anjeer* (*Ficus carica*) with *Shooneez* (*Nigella sativa*)

(Majoosi, 1885)

- *Tila-e-Muhasa, Tila-e-Sosan, Zimaad Majli, Dawa-e- Muhasa* (Qarshi, 2011) (Kabiruddin, 2010) (Jeelani, 2005)
- Ointment of *Samagh-e-Batam* and *Shib-e-yamani* (alum)
- Honey and Vinegar advised by Razi (for small and dry lesions)
- Soap, *Ushq* (*Dorema ammonicum*) and *Kundur (Boswellia serrata)*
- *Samagh Arbi* (*Acacia arabica*) and Vinegar (Razi, 1994)

Murakkab advia (Compound drugs) for systemic use for the management of *Busoor Labaniya*:

- *Majoon Ushba, Itrifal Shahtara, Arq Murakkab Musaffi Khoon, Sharbat Unnab* (Jeelani, 2005; Geelani, 1996) (Kabiruddin, 2010)

Psychological Intervention:

Patients with acne have significant anxiety, depression, and psychopathology within the obsessive-compulsive spectrum. Psychological interventions can modulate psychological factors linked with acne with reports of benefits from biofeedback assisted relaxation which works through monitoring psychological modifications that accompany thoughts, emotions, and behaviors. Cognitive-behavior therapy, which is a problem-oriented therapy, working with thoughts, emotions, physical symptoms and behavior. Simplified Cognitive-behavior therapy can be used in everyday clinical practice with benefits for less severe cases (Katlein França, Torello Lotti, 2019).

Diet and Lifestyle recommendations:

At present no specific regimen has sufficient evidence to be recommended for acne patients. However, an integrative approach would benefit from educating the patient about diet and life style together with the conventional or Unani treatment outlined above. It is observed that high glycemic index diet and skim milk may synergistically influence acne pathogenesis. Lower consumption of vegetables, fruits and fish have also been found to be associated with acne in females. Thus, an adequate diet would include a reduction in glycemic load and skim milk and an increase in the consumption of fish (source of omega-3 fatty acid with anti-inflammatory effects), fruits, vegetables and green tea (Katlein França, Torello Lotti, 2019). The role of Vitamin D in acne has also been studied. It seems that vitamin D makes superoxide dismutase (SOD) and glutathione peroxidase (GSH-Px) which were found at lower levels in papulo-pustular cases of *acne vulgaris* by some Authors (Toossi, Parviz *et al.,* 2015). A link with western diet is also pointed out leading to lower insulin sensitivity and systemic inflammation with effects on the sebaceous gland, contributing to the etiopathogenesis of acne. The role of diet is therefore, a field which deserves more research and whose interest was already mentioned by Hippocrates, who stated "your diet should be your medicine, your medicine should be your diet" (Katlein França, Torello Lotti, 2019).

Being multifactorial in aetiology and lack of complete understanding of the pathophysiology, acne cannot be prevented or cured completely, however, it can be managed effectively through various treatment modalities.

Although acne causes no long-term health problems or any complications but it leaves scars not only on the skin but also on the mind of the patients.

Thus, it should be treated keeping in mind all the aspects of the disease and management should comprise not only medical treatment but also physical therapy, psychological therapy, modification of diet and lifestyle. And among different medical treatments, natural systems of medicine like Unani medicine can be adopted for promising results; Unani medicine offers cost effective management with lesser side/ adverse effects.

CONCLUSION

Acne vulgaris is a very common skin disorder that manifests primarily on the face but can also affect the upper arms, trunk, and back. Acne vulgaris is a chronic condition affecting about 90% of adolescents. Patients with acne vulgaris may experience psychological burdens such as depression, anxiety, and low self-esteem. The Allopathy system of medicine offers numerous treatment options for acne vulgaris, including benzoyl peroxide, retinoids, isotretinoin, salicylic acid, alpha-hydroxy acids, azelaic acid, steroids, chemical peels, radiofrequency, and laser therapy. Long-term use of antibiotics for acne vulgaris contributes to antibiotic resistance, kidney and gastrointestinal problems. None of these regimens is free of adverse effects.

In Unani system of medicine, acne vulgaris is effectively managed with natural medicines as well as therapeutic regimens with minimal side effects even after long-term usage.

Acne vulgaris is usually treated with systemic blood purifiers along with topical Unani drugs.

Hence, clinical studies with proper scientific parameters are needed to be conducted to establish and validate their efficacy in the prevention and control of acne vulgaris.

ACKNOWLEDGEMENT

None

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

Abul Hasan Ali Bin Abbas Al Majoosi, *Kamil us Sana*. (Urdu

Translation by Ghulam Hasnain Kantoori), Vol. 1 (Lucknow : Munshi Nawal Kishore Publications). 1885, pp. 108-110.

Ajmal Khan. Haziq. (Lahore : Bashir & Sons), YNM, pp. 389.

Alexiades M. Laser and light-based treatments of acne and acne scarring. *Clinics in Dermatology*. 2017 Mar 1;35(2):183-9.

Arzani A. *Tib-e-Akbar* (Urdu translation by Hussain M), (Deoband : Faisal Publications), 2002, pp.256,722.

Arzani MA. *Tibb-e-Akbar* (Urdu translation by Hussain M), Vol. II. (Lucknow : Tejkumar Press), 1956.

Azahar Mohd *et al.* Therapeutic Evaluation of a Topical Unani Formulation, *Tila-i Muhāsā* in *Buthūr Labaniyya* (Acne Vulgaris): A Randomized, Controlled Clinical Study. *CellMed*. 2020;10 (2):15.1-15.9.

Baghdadi Ibn-e-Habul. *Kitab-al-Mukhtrat Fit Tib*, Vol. 4, (New Delhi : CCRUM), 2007, pp.188-89.

Bhat Muzaffar DA. *Irfan Mohd* and *Malik Rabia Basoor Labniya* (Acne Vulgaris) in Unani. *STM journals*. 2016; 3(3): 1-5.

Bhate K and Williams HC Epidemiology of acne vulgaris. *British Journal of Dermatology.* 2012;168:474–485.

Boen M, Brownell J, Patel P, Tsoukas MM. The role of photodynamic therapy in acne: an evidence-based review. *American Journal of Clinical Dermatology.* 2017 Jun; 18(3): 311-21.

Boon Nicholas A, Colledge Nicki R and Walker Brain R Davidosn's Principles and Practice of Medicine. Edition 21, (Elsevier : Churchill Livingdstone), 2010, pp.1267-1268.

Cohen BE, Brauer JA, Geronemus RG. Acne scarring: a review of available therapeutic lasers. *Lasers in surgery and medicine.* 2016 Feb; 48(2): 95-115.

Dawson, AL & Dellavalle, RP. Acne vulgaris. *BMJ (Clinical research ed.)*. 2013; *346*: f2634.

Follador Ivonise and Rego Vitória. Etiopathogenesis of acne. Future Drugs Ltd. 2006. 10.1586/17469872.1.1.153. pp. 153-155.

Ghulam Jeelina. *Makhzan-ul-Hikmat.* Vol. 2 (Lahore : S Bashir and Sons), 1996, pp. 689-691.

Ghulam Jeelani. *Makhzan-ul-Ilaj*. (New Delhi : Idara Kitab-us-Shifa), 2005. pp. 726-28.

Ibn-e-Sina. *Al-Qanoon*. (Urdu translation by Ghulam Hasnain Kantoori), Vol. 3, (Lahore : Bashir and Sons), 1984, pp. 161-3.

Ibn-e-Sina. *Al-qanoon Fit-Tib*, (Urdu translated by Ghulam Hasnain Kantoori), Vol. 2, Lucknow : Matba Munshi Nawal Kishore), 1930, pp. 36, 43, 50, 59, 96, 224, 246.

Ibn-e-Sina. *Al-Qanoon-Fil-Tib*. (Urdu translated by Ghulam Hasnain Kantoori), Vol. 4, (New Delhi : Idara Kitabul Shifa), 2010, pp. 1432.

Kabiruddin M. *Bayaz-e-Kabeer.* Vol. 1, (New Delhi : Idara Kitab-us-Shifa), 2010, pp. 258-59.

Kabiruddin M. *Advia ki do Taqseem*. (Hyderabad : Daftarul Masihi). YNM, pp. 19-20,22-23,30-31.

Kabiruddin M. *Tarjuma-e-Kabir,* (Delhi : Idara KItab-ush-Shifa), 2009, pp. 243-244.

Kabiruddin M. *Tarjuma Kabir.* Vol. III, (Hyderabad: Hikmat Book Depot), 1999, pp. 318.

Katlein França, Torello Lotti, Advances in Integrative Dermatology, *Wiley online.* 2019, pp. 35-41.

Khanna Neena Illustrated Synopsis of Dermatology and Sexually Transmitted Diseases. (New Delhi : Elsevier, a division of Reed Elsevier India Private Limited), 2011. 4.

Larson Siri Knutsen *et al.* Acne Vulgaris: Pathogenesis, Treatment, and Needs Assessment. Vol. 30. *Dermatol Clin.* 2012. pp. 99–106.

Mercola JM, Kirsch DL. The basis for microcurrent electrical therapy in conventional medical practice. *Journal of Advancement in medicine*. 1995; 8(2):107-20.

Mitachell Sams W and Lynch Peter J. Principles and Practice of Dermatology, Edition 2, Churchill Livingstone Inc, 1996, pp. 801-810.

Mohammad Azam Khan. *Akseer Aazam (Farsi).* Vol. 4, (Lucknow : Matab Munshi Naval Kishor), 1917, pp. 450-451.

Momen S, Al-Niaimi F. Acne vulgaris and light-based therapies. *Journal of Cosmetic and Laser Therapy.* 2015:4;17(3):122-8.

Nasri Hamid *et al.* Medicinal Plants for the Treatment of Acne Vulgaris: A Review of Recent Evidences. *Jundishapur J Microbiol*. 2015;2(8):1-9.

Okoro Emeka, Ogunbiyi Adebola and George Adekunle. Prevalence and pattern of acne vulgaris among adolescents in Ibadan, south-west Nigeria. *Journal of the Egyptian Women's Dermatologic Society.* 2016: 7-12.

Paithankar DY, Sakamoto FH, Farinelli WA, Kositratna G, Blomgren RD, Meyer TJ, Faupel LJ, Kauvar AN, Lloyd JR, Cheung WL, Owczarek WD. Acne treatment based on selective photothermolysis of sebaceous follicles with topically delivered

light-absorbing gold microparticles. *Journal of Investigative Dermatology.* 2015; 135(7):1727-34

Politi Y, Levi A, Enk CD, Lapidoth M. Integrated cooling-vacuum-assisted 1540-nm erbium: glass laser is effective in treating mild-to-moderate acne vulgaris. *Lasers in medical science.* 2015; 30(9):2389-93.

Qarshi Mohammad Hasan. *Jam-ul-Hikmat.* (New Delhi : Idara Kitab-us-Shifa), 2011, pp. 994-95.

Razi Zakariya. *Al-Havi Fit Tib,* Vol. 23, part 2, (Urdu translation by Syed Ali Haidar Jafri and Mohd. Yunus Siddiqui). 1994, pp. 36-37.

Suva Manoj A. *et al.* A Brief Review on Acne Vulgaris: Pathogenesis, Diagnosis and Treatment. *STM*. 2014;4 (3): 1-12.

Tabri M. *Moalejat Buqratiyah.* (Urdu translation). Vol. 2, (New Delhi: Ministry of Health and Family Welfare Government of India, CCRUM), 1997, pp. 144-147.

Tabri M. *Moalejat Buqratiyah*. (Urdu translation). Vol. 1, (New Delhi: Ministry of Health and Family Welfare Government of India, CCRUM), 1995, pp. 252.

Tan JKL and Bhate K. A global perspective on the epidemiology of acne. *British Journal of Dermatology.* 2015;172:3-12.

Toossi, Parviz *et al.* "Serum 25-hydroxy vitamin D levels in patients with acne vulgaris and its association with disease severity." *Clinical cases in mineral and bone metabolism: the official journal of the Italian Society of Osteoporosis, Mineral Metabolism, and Skeletal Diseases.* 2015.12(3): 238-42.

Trivedi MK, Bosanac SS, Sivamani RK, Larsen LN. Emerging therapies for acne vulgaris. *American journal of clinical dermatology.* 2018 Aug;19(4):505-16.