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Acne Vulgaris Through Modern Science and Classical Unani Lens: Pathophysiology, Diagnosis, and Treatment

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Abstract: Acne vulgaris is a prevalent chronic inflammatory disorder of the pilosebaceous unit, primarily affecting adolescents and young adults, with a notable impact on psychological and social well-being. In the Unani System of Medicine, this condition is identified as *Buthūr Labaniyya* and is attributed to disturbances in humoral equilibrium, particularly involving *Fasād-i-Dam* (vitiated blood), predominance of *Balghām* and *Safrā*, and increased intrinsic heat (*Su'-e-Mizāj Ḥār*). This review offers an integrative conceptual appraisal of acne vulgaris by correlating classical Unani principles with contemporary dermatological insights. Modern medicine explains acne pathogenesis through follicular hyperkeratinization, androgen-driven sebaceous hyperactivity, proliferation of *Cutibacterium acnes*, and subsequent inflammatory responses. In contrast, classical Unani scholars described the condition as a consequence of the accumulation of *Mādda-e-Sadīdiyya* and impaired elimination of morbid humours through the skin, particularly during adolescence. Therapeutic strategies in modern dermatology focus on topical and systemic agents targeting inflammation and sebum production, whereas Unani management emphasizes holistic interventions, including humoral purification (*Tanqīya*), dietary regulation (*Ilāj bi'l-Ghidhā*), regimenal therapies (*Ilāj bi'l-Tadbīr*), and herbal formulations.

An integrative approach combining evidence-based modern therapies with Unani principles may enhance clinical outcomes, reduce recurrence, and promote long-term cutaneous and psychosocial health.

Keywords: *Acne Vulgaris, Unani Medicine, Buthūr, Humoral Theory, Integrated Dermatology.*

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I. INTRODUCTION

According to Unani Medicine, the skin is considered the most *motadil* organ because its *Mizāj* (temperament) reflects an equal balance of all four qualities (*kaifiyat-e-arba'a*).[1] Skin diseases are increasingly common worldwide, affecting people of all ages and cultures. They account for 30–70% of health issues, with over 1,000–2,000 known skin conditions and nearly 3,000 ICD-9 dermatology categories. Due to the skin's large size and visibility, such disorders are frequent. A cross-sectional survey reported a 60% prevalence, with females affected more.[2] In Unani medicine, there exists a rich, well-established tradition of understanding the causes and treatment of *Amrāz-i-Jild* and *Amrāz-i-Tazeeniyāt*. Classical Unani physicians have elaborated in great depth on diverse skin disorders and their appropriate therapeutic approaches. Among the various dermatological conditions that affect the face, Acne Vulgaris is one of them.

Acne vulgaris, known in the Unani System of Medicine (USM) as *Buthūr Labaniyya*, is among the most prevalent skin conditions worldwide. It affects nearly 85% of

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adolescents, and in many cases continues into adult life. It is more commonly seen in women, constituting a major proportion of clinical visits made for acne management.[3] Acne vulgaris is a chronic inflammatory condition of the pilosebaceous unit, predominantly affecting the face and trunk. Clinically, it presents with comedones, papules, pustules, nodules, and various forms of scarring. While the face is most commonly involved, lesions may also appear on the upper arms, chest, and back.[4,5,6]

Acne not only affects the skin but also has a significant impact on a person's mental and social well-being, leading to low self-esteem, social anxiety, and a higher risk of depression. According to modern dermatology, acne develops due to several factors, including blocked hair follicles, increased oil production driven by hormones, cosmetics, growth of the bacteria *Cutibacterium acnes*, and an overactive inflammatory response in the skin.[7,8]

From the Unani medical perspective, *Buthūr* (acne) is a type of warm (inflammation).[9] Acne vulgaris is referred to as *Buthūr-i-Labanīya*, a condition believed to result from an imbalance of the bodily humours *(Akhlāṭ)*. This disorder has been recognized since the classical Greco-Arab medical era and is described by eminent Unani scholars, including *Ibn Sīnā, Zakariyā Rāzī, Rabban Tabarī, Ibn Hubl, Dāwūd Antākī,* and *Akbar Arzānī*.[10] In Unani texts, it is characterized by small white eruptions, usually seen on the nose and face that resemble drops of milk or frozen ghee (*roghan-i-zard*). These lesions are most commonly observed during adolescence, a period marked by natural physiological changes that predispose them to their development.[11,12] Acne vulgaris is a visually significant and disfiguring disorder that affects both males and females from their middle to late adolescence.[13] It arises from the accumulation of *Fāsid Ma'da* (impure or corrupted material), dysfunction of various organs *(A'za)*, improper dietary habits, environmental factors, and disturbances in the body's fundamental principles, namely *Su'-e-Mizāj* (temperamental imbalance), *Su'-e-Tarkīb* (altered structural composition), and *Tafarruq-e-Ittisāl* (disruption in tissue integrity and continuity).[14]

Conventional medicine uses targeted treatments such as retinoids, antibiotics, and laser therapies to act directly on the underlying pathological processes of acne. In contrast, the Unani System of Medicine (USM) follows a holistic and individualized approach, viewing acne as a manifestation of humoral imbalance, especially an excess of *Balghām* (phlegm). Management in USM focuses on personalized regimens, including dietary modifications, lifestyle regulation, and attention to emotional well-being, to restore overall balance and promote long-term healing.

This review synthesizes both systems to explore the condition's etymology, historical context, epidemiology, pathophysiology, clinical manifestations, diagnosis, psychosocial impact, treatment approaches, prognosis, limitations, and suggestions for future research. By integrating these approaches, the paper aims to provide a comprehensive framework for effective acne management that addresses both physical and psychosocial dimensions.

II. MATERIAL & METHODS

This integrative review was conducted using a structured literature search across PubMed, Scopus, Google Scholar, and the AYUSH Research Portal. Keywords included "Acne vulgaris," "*Buthūr,*" "Unani medicine," "humoral imbalance," "*Mizaj*," and "integrative dermatology." Articles published in English between 2000 and 2024, encompassing clinical studies, reviews, meta-analyses, and case series with adequate sample size, were included. Classical Unani texts reviewed included *Al-Qanoon fi al-Tibb*,[3] *Al-Hawi*,[4] and *Kamil-us-Sana'a*[5]. Data were synthesized to provide an integrative perspective combining modern dermatological findings with Unani principles, focusing on epidemiology, aetiology, risk factors, clinical features, and management strategies.

III. RESULTS

➢ *Synonyms*

- Arabic: Buthūr Labaniyya,
- Persian: Buthūr Dohniyya
- Urdu: Muhāse, Dāne, Funsi
- Hindi: Kīl, Muhāse
- English: Acne, Pimples
- Ayurveda: Yuvana Pidaka
- Sanskrit: Mukhadushika[15,16,17,18]

➢ *Definition of Acne Vulgaris*

Acne vulgaris refers to the "common form of acne". The term *acne* derives from the Greek word "acme," meaning "point" or "peak," while "vulgaris" is derived from Latin and means "ordinary" or "common". Thus, Acne Vulgaris literally denotes the typical type of acne seen in most individuals, particularly during adolescence.[19] It is characterized by the presence of pimples, blackheads, whiteheads, and occasionally deeper nodular lesions. According to the WHO, acne is a disorder of the pilosebaceous units that commonly appears on the face, neck, chest, and upper back.[20]

According to Unani literature, *Buthūr Labaniyya* is an Arabic term composed of two words: *Buthūr*, meaning boils, and *Labaniyya*, meaning milk. It is also referred to as *mohasa* or *keel*.[21] In Unani texts, *Buthūr* (acne) is categorized as a form of *warm* (inflammatory swelling), with the primary distinction being their comparatively smaller size, as *Buthūr* are considered minor *awram* (swellings). *Buthūr Labaniyya*, characterized by whitish, milk-like pustular eruptions, is understood as a chronic inflammatory condition affecting the sebaceous glands and the pilosebaceous units of the skin.[9]

"In the Unani system of medicine, several classical scholars have described this condition in their classical texts. In the classical Unani text *Kitab al-Hawi*, *Zakariya Razi* refers to this condition as *Atiasoos*, describing it as "small, dry eruptions (*Buthūr*) on the face," characterized by hardness and a tendency to persist chronically.[11,22]

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Ibn Sina (Avicenna), in his monumental work *Al-Qanun fi'l-Tibb*, describes *Buthūr-i-Labaniyya* as small, white eruptions on the nose and cheeks that resemble a drop of milk. He attributes their origin to *Mādda-e-Sadīdiyya*, a purulent material that reaches the skin's surface in the form of vapours. The condition is named for its resemblance to *nuqtah-e-labān* (a milk drop).[23]

According to *Qarshi*, it is a *mutta'addi* (infectious) disorder in which small white eruptions develop on the face, nose, and cheeks. When compressed, these lesions expel a cheesy substance. He explains that the underlying cause is *Mādda-e-Sadīdiyya*, which moves toward the surface of the skin due to *Bukharat-e-Badan*.[16]

According to *Hakeem Ajmal Khan*, small, pointed eruptions may appear on the face, neck, chest, cheeks, and nose. These lesions are typically hard and reddish. Upon maturation, they discharge a keel along with a small quantity of pus.[24]

➢ *Epidemiology*

Acne vulgaris is one of the most common dermatological conditions worldwide, affecting individuals across all ethnicities and age groups. Globally, it is estimated to affect approximately 9.4% of the population, making it the eighth most prevalent disease on earth.[25] Its highest burden is observed in adolescents, where prevalence ranges from 70% to 95%, depending on geographic region and diagnostic criteria.[26] In adolescents aged 12–24 years, acne prevalence is particularly high, with studies reporting that approximately 85% experience some form of acne during this period.[27] Although traditionally considered an adolescent condition, recent data highlight a significant persistence into adulthood, with up to 40–55% of adults aged 20–40 years exhibiting low-grade persistent acne or acne flare-ups.[28]

Gender-wise, males tend to experience more severe acne during adolescence due to androgenic stimulation, whereas adult acne is more common in females, with prevalence estimates ranging from 12% to 22%.[29] Urban populations show a higher prevalence of acne vulgaris than rural groups. About 20% of patients develop severe, scar-forming acne. Ethnic variations are also noted: Asians and Africans are more prone to severe acne, while milder forms are more common in White populations. Individuals with darker skin frequently experience post-inflammatory hyperpigmentation.[30] In India, 60–72% of adolescents experience acne, influenced by genetic susceptibility, humid environmental conditions, and dietary habits—particularly high-glycaemic foods and dairy products—which are known to increase insulin-like growth factor-1 (IGF-1) levels.[31]

➢ *Causes*

Classical Unani scholars and modern medicine describe acne vulgaris as a condition arising from multiple interacting factors. According to traditional Unani texts, its aetiology is multifactorial, with several internal and external elements contributing to its onset and progression. The points given below are considered important contributors to the development of acne.

- Hypersensitivity of the sebaceous glands- Acne occurs when the sebaceous glands become hypersensitive to normal androgen levels, leading to more oil production. This oil, along with *Cutibacterium acnes* bacteria, triggers inflammation and causes acne.[32]
- *Fasād-i-Dam* (impurity of blood) – Corruption or impurity of blood causes the body to expel waste through the skin, producing eruptions.[33]
- *Imtilā-i-Khūn* (blood congestion) and *Ḥiddat-i-Dam* (blood irritability) – Overabundance of blood or its excessive heat leads to skin eruptions as the body attempts to expel impurities.[18]
- *Qillat-i-Dam* (deficiency of blood) – Inadequate or poor-quality blood weakens skin nutrition, making it prone to eruptions.[34]
- Psychological stress and anxiety – Mental tension disturbs the balance of humours (*Akhlāṭ*), particularly leading to increased heat (*Harārat*) and dryness, aggravating skin conditions.[35]
- Indigestion (*Su'-i-hazm*) – Improper digestion leads to the production of toxic matter (*Mawād-i-fāsida*) in the blood, which seeks expulsion through the skin.[33]
- *Qābḍ* (Constipation) – Retention of waste in the intestines causes systemic toxicity, reflected as skin diseases.[36]
- *Shiddat-i-Ḥarārat* (intense heat) – Excessive heat, whether internal or external, aggravates inflammatory processes in the skin.[34]
- Excessive testosterone production – Over-secretion of androgens stimulates sebaceous glands, leading to increased sebum and acne.[34]
- Excessive consumption of sweets and oily foods – Such foods are heavy (*Saqīl*) in digestion, promote excessive production of *Balghām* (phlegm) and oily secretions, which may obstruct the pores and sebaceous glands, resulting in skin eruptions.[37]
- Diabetes (*Dhayābīṭus*) – Disturbance in metabolism and increased blood sugar predispose the skin to infections and eruptions.[40]
- Excessive intake of hot temperament foods – Foods of *Har Yābis Mizāj* (hot and dry temperament) intensify internal heat, stimulating sebaceous gland activity and worsening eruptions.[33]
- Obstruction of sebaceous glands – Blockage of glandular pores by sebum, dust, or sweat prevents normal excretion and results in swelling, inflammation, and pimples.[37,38]
- Adolescence (Teenage) – Hormonal surges during puberty, especially increased androgen secretion, enhance sebaceous activity and predispose to acne-like lesions.
- Alcohol consumption (*Sharāb*) – It disturbs humoral equilibrium, increases heat in the body, and contributes to blood impurities (*Fasād-i-Dam*).[33]
- High humidity – Moist and warm climate supports bacterial growth, clogs skin pores, and worsens inflammatory conditions.[18]
- *Eḥtebās-i-Tams* (amenorrhea) – Suppression of menstrual flow results in retention of waste material (*Mawād-i-fāsida*), which may manifest through skin lesions.[18]
- Use of oil-based soaps and creams – Such products increase greasiness, block pores, and trigger inflammatory skin reactions.[34]

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- Cessation of hemorrhoidal bleeding– When a habitual route of blood expulsion is blocked, impurities may be redirected toward the skin.[36,37]
- Irregular menstrual cycle – Disturbance in the natural cycle of elimination leads to accumulation of unwanted humours, manifesting as skin problems.[33,36]
- Excessive intake of dry fruits (*Maghziyāt*) such as peanuts, pistachios, walnuts, and pine nuts – These foods are nutritionally rich and hot in temperament. Still, excessive consumption increases heat and oiliness, predisposing to acne-like lesions.[39]

➢ *Risk Factors*

Several distinct factors influence how often acne vulgaris occurs and persists in late adolescents. Diet, hormonal changes, and psychological issues play major roles, while genetics and oxidative stress also contribute important insights.

- Genetic Factors – Family history strongly increases risk; genes influence sebaceous activity, keratinization, and immune response. A positive family history of acne increases the likelihood of acne by about 2.3% to 4.69%. Gene varieties are responsible which have been attributed to acne, such as polymorphisms in IL-1a, TNF-α and CYPIA1, amongst others. Very severe acne associated with XYY syndrome.[41-43]
- Hormonal Factors – Androgens stimulate sebum production. PCOS, adrenal disorders, and premenstrual changes often worsen acne.[44]
- Age & Puberty – Peak prevalence in adolescents due to hormonal surge; adult-onset acne is common in women.[26,29]
- Sex – Males develop more severe adolescent acne; females often have persistent or hormonally driven acne.[29]
- Dietary factors– High-glycaemic foods, dairy, and fast food promote sebaceous activity and inflammation. A recent investigation found that Vitamin B supplementation can trigger acne development by altering the transcriptome of the skin microbiota.[2,46]
- Psychological Stress – Acne is a possible risk of association with psychological disorders. Studies show that increased Stress activates the HPA axis, raising cortisol/androgens and worsening inflammation.[18,47]
- Lifestyle – Sedentary habits, poor sleep, and smoking are linked to hormonal imbalance, oxidative stress, and aggravated lesions.[48]
- Cosmetic Use – Comedogenic makeup, oil-based products, and poor cleansing block pilosebaceous ducts (acne cosmetica).[50,51]
- Environmental/Occupational – Hot, humid climates, pollution, and industrial exposure (oils, chloracne) trigger acne.[49]
- Medications – Corticosteroids, lithium, isoniazid, phenytoin, and androgens cause drug-induced eruptions.[50,51]
- Obesity & Metabolic Syndrome – Enhance androgen activity, insulin resistance, and systemic inflammation.[52]

➢ *Pathogenesis of Acne Vulgaris*

- *Modern Perspective*

Acne vulgaris is a multifactorial skin disorder that arises from the combined effects of follicular hyperkeratinization, increased sebum production, proliferation of *Cutibacterium acnes*, and inflammation. These processes interact with hormonal changes, genetic tendencies, microbial activity, and immune responses, ultimately leading to the development of comedones, papules, pustules, and other acne lesions.

- ✓ Follicular epidermal hyperproliferation with subsequent plugging of the follicle.
- ✓ Excess sebum production.
- ✓ The presence and activity of the commensal bacteria Propionibacterium acnes.
- ✓ Inflammation.

Follicular hyperkeratinization is considered the initiating event, where abnormal desquamation of keratinocytes leads to obstruction of pilosebaceous follicles. This results in comedone formation, creating an anaerobic environment conducive to the proliferation of *Cutibacterium acnes*. The bacteria produce lipases and other enzymes that degrade sebum triglycerides into free fatty acids, triggering local inflammation. Cytokines such as interleukin (IL)-1β, IL-8, and tumor necrosis factor-alpha (TNF-α) play a crucial role in mediating this inflammatory response, which can manifest as papules, pustules, and nodules.

Androgen-induced hyperactivity of the sebaceous glands is a central component of acne pathophysiology. During puberty, elevated levels of testosterone and dihydrotestosterone (DHT) stimulate sebum production, contributing to follicular plugging and inflammatory lesions[4]. Insulin-like growth factor-1 (IGF-1) has also been implicated in sebocyte proliferation and lipogenesis, linking dietary habits such as high-glycaemic-load foods and dairy intake with acne exacerbation. Genetic predisposition further modulates disease severity, with studies indicating familial clustering and variations in sebum composition, follicular keratinization, and inflammatory responsiveness.[10,20,50,53-57]

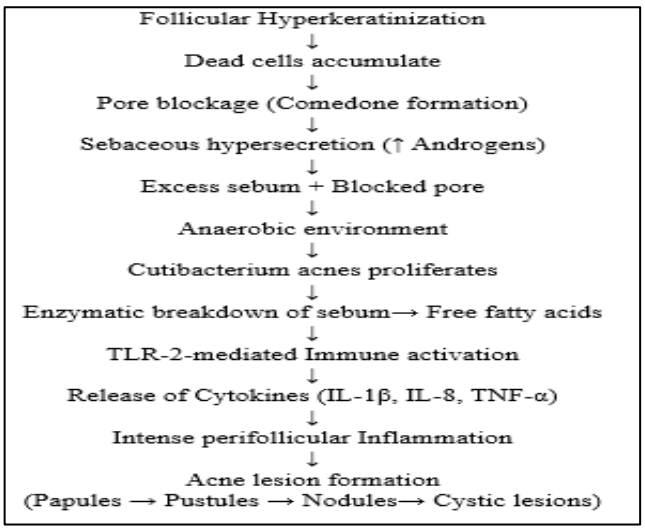

Fig 1 Pathogenesis of Acne Vulgaris in Modern Aspect

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- *Unani Perspective*

In the Unani System of Medicine, according to *Ibn Sina*, the main cause of this condition is *Mādda-e-Sadīdiyya*, which is formed when the *Lateef Bukharat* of the body move towards the skin's surface under favourable conditions. Upon reaching the skin, these vapours condense and transform into this viscous, suppurative material that cannot be resolved or expelled efficiently, leading to eruptions.[5] *Hakeem Azam Khan* and other scholars also emphasized *Mādda-e-Sadīdiyya* as the primary pathological factor. The imbalance of body humours, especially the phlegmatic humour, is believed to lead to the formation of viscous pus, causing these eruptions. *Rabban Tabāri* vividly described the formation and rupture of pustules, explaining how pus and other morbid materials are expelled through the skin.[58,59]

Excess of *Fasād-i-Dam* leads to inflammatory eruptions, while dominance of bile (*Ghalba-i-Safra*) produces erythema, dryness, and pustular lesions. Increased intrinsic heat (*Su'-e-Mizaj Haar*) during puberty (*Shabab*) correlates with modern observations of androgen-mediated sebaceous hyperactivity. Psychosomatic factors, irregular digestion, and lifestyle imbalances contribute to the accumulation of toxic humours and the formation of acne lesions. The Unani concept of *Hararat-i-Gharīziyya* (innate heat) closely parallels the modern understanding of hormonal surges in adolescence, highlighting an integrative connection between classical and contemporary pathophysiology.

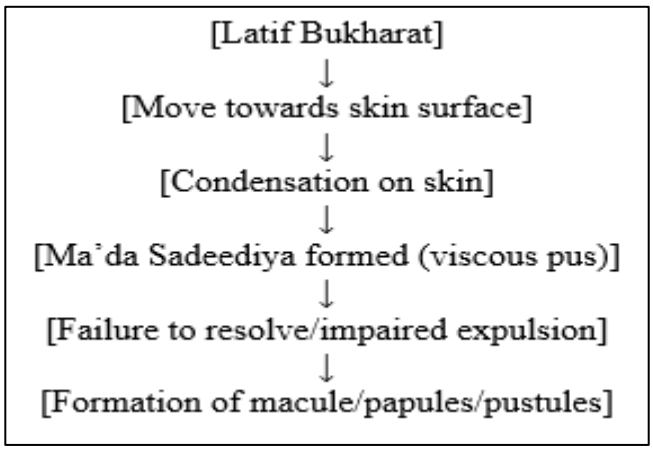

Fig 2 Pathogenesis of Acne Vulgaris in Unani Aspect

✓ *Sites:*

Acne is a polymorphic disease that primarily affects the face (60%), also the back (30%), and the chest (to a lesser extent) (10%). It may appear on any hair-bearing skin, but some areas are more vulnerable than others. The face, especially the cheeks, lower jaw, chin, nose, and forehead, is commonly affected. Back of neck, front of chest, back, and shoulders are other 'favoured areas. The scalp, however, is not involved.[45]

IV. CLINICAL FEATURES

Acne vulgaris presents as comedones (open and closed), inflammatory papules, pustules, nodules, and, in severe cases, cystic lesions and scarring. Lesions commonly occur on the face, chest, upper back, and shoulders, correlating with areas of high sebaceous gland density. Inflammatory lesions are often associated with erythema and tenderness, whereas comedonal acne is typically non-inflammatory. Adult-onset acne in females frequently presents as inflammatory papules and pustules along the jawline and lower face, often associated with hormonal fluctuations.[45,60-62]

A. *Types of Lesions*

➢ *Non-Inflammatory Lesions (Comedones)*

These are the earliest and most typical lesions of acne, which first appear as non-inflammatory comedones. Comedones are of two types: closed comedones, called whiteheads, and open comedones, known as blackheads.[63]

- *Open Comedones (Blackheads)*

✓ Blackheads are mild acne and are represented by dome-shaped papules.
✓ Formed due to partial blockage of the follicular opening.
✓ Melanin oxidation gives a black or dark appearance, not dirt.
✓ Typically found on the nose, chin, central face, chest, and neck.[43,64]

- *Closed Comedones (Whiteheads)*

✓ They are small bumps and non-inflammatory acne lesions.
✓ Result from complete obstruction of the follicular orifice.
✓ Appear as small, white, dome-shaped papules.
✓ They can appear anywhere on the body but are most commonly found in the T-zone (forehead, nose, and chin).
✓ More likely to progress into inflammatory lesions.[20,43,65]

➢ *Inflammatory Lesions*

Inflammation occurs when comedones rupture and release keratin, sebum, and bacteria into the dermis.

- *Papules*

✓ Inflammation occurs when skin reacts to bacteria, excess oil, and androgen activity, leading to redness, swelling, heat, and pain.
✓ Small (<5 mm), erythematous, tender solid elevations, and not filled with pus.
✓ Represent early inflammatory response.[20,65]

- *Pustules*

✓ Similar to papules but filled with purulent material.
✓ Have a central yellowish-white tip with surrounding redness.
✓ Commonly found on the shoulders, chest, back, face, neck, pubic region, and hairline.[65,66]

- *Nodules*

✓ Large (>5 mm), deep, painful, firm lesions.
✓ whitehead or blackhead comedones can rupture and merge, forming these severe lesions.

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- ✓ Extend into the deep dermis.
- ✓ Indicate severe inflammation and a high risk of scarring.[20,65,67]

- *Cysts*

- ✓ Acne cysts, sometimes referred to as large secondary comedones, form due to repeated rupture and re-encapsulation of lesions.
- ✓ Fluctuant, soft, inflamed nodular lesions filled with pus or serosanguinous fluid.
- ✓ Often coalesce to form sinus tracts.
- ✓ Associated with significant tissue destruction.[20,65,68]
- ✓ Based on clinical severity, acne is generally categorized into mild, moderate, and severe forms.[69,70]

Table 1 Severity of Acne According to the Modern Perspective

Grade	Severity	Clinical Features
1.	Mild	• Predominantly non-inflammatory lesions (open and closed comedones). • Few inflammatory lesions, such as small papules or pustules. • Lesions are mainly confined to the face. • Minimal risk of scarring.
2.	Moderate	• Increased number of inflammatory lesions, especially papules and pustules. • Involves the face and may extend to limited areas of the trunk (upper chest or back). • More noticeable inflammation and higher risk of post-inflammatory pigmentation.
3.	Severe	• Presence of nodules and cysts, sometimes forming sinus tracts. • Affects the face as well as the trunk (chest, back, shoulders). • High risk of scarring and significant tissue damage. • Often painful and requires aggressive management.

Unani System of Medicine classifies *Buthūr Labaniyya* into six progressive stages, reflecting the severity of *Balghām*-induced lesions:[71]

Table 2 Stages of Acne According to the Unani Perspective

Stage 1 (Microcomedones /Whiteheads)	Small, milky-white pimples resulting from the accumulation of *Balghām*, resembling tiny droplets of milk or solidified ghee (*Muhasa*), commonly appear on the face.
Stage 2 (Blackheads)	Darkened open comedones caused by oxidation and *fasid madda* are commonly seen on the forehead, cheeks, and nose.
Stage 3 (Acne Papulosa)	Red, inflamed, mildly painful lesions caused by C. acnes activity and humoral imbalance, showing advancement of *Balghām* pathology.
Stage 4 (Acne Pustulosa)	Pus-filled lesions due to secondary (often staphylococcal) infection, indicating advanced accumulation of *Madda-i- Sadeediya.*
Stage 5 (Acne Indurata)	Hard, persistent lesions formed by dried pus, signifying chronic inflammation and *Balghām* solidification.
Stage 6 (Acne Cystica)	Severe, fluctuating lesions such as acne conglobata and fulminans can develop, with various types of scarring arising from the interaction of *Tabi'at* with thick, morbid matter; solidification is considered the least favourable outcome, as noted by Hippocrates.

➢ *Psychological Impact of Acne*

Acne significantly affects mental and emotional well-being, often leading to reduced self-esteem, social withdrawal, embarrassment, and feelings of unattractiveness. Many patients report heightened levels of anxiety, depression, body-image disturbance, and impaired interpersonal relationships due to visible lesions and scarring. Studies show that acne can negatively influence academic performance, quality of life, and overall psychosocial functioning, with female patients experiencing a comparatively greater psychological burden. The emotional distress caused by acne is often disproportionate to its clinical severity, indicating that even mild acne can produce a substantial psychological impact. Early identification of these psychological effects is essential for holistic acne management, as addressing mental health concerns can improve therapeutic outcomes and patient confidence.[72,73,74]

V. DIAGNOSIS OF ACNE VULGARIS

The diagnostic approach in Unani medicine is based on a combination of history taking, clinical examination, and *Mizāj* (temperament evaluation).

➢ *Clinical Diagnosis*

Acne vulgaris is primarily a clinical diagnosis, made through detailed patient history and physical examination. It is characterized by comedones, papules, pustules, nodules, and cysts involving the pilosebaceous units, predominantly on the face, chest, and back. Laboratory investigations are seldom required unless an underlying endocrine abnormality or resistant infection is suspected. The diagnosis relies on recognizing lesion types and their distribution in typical seborrheic regions.

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➢ *History Taking*

A thorough history taking is essential to establish the chronicity and potential triggers. Important details include the age of onset, as acne commonly begins during puberty and may persist into adulthood. A positive family history, menstrual irregularities in females, cosmetic usage, stress, or drug intake (such as corticosteroids or lithium) may indicate aggravating factors. Hormonal influences are significant, and the presence of premenstrual flare-ups or hirsutism may warrant endocrinological evaluation.[75]

➢ *Physical Examination*

The physical examination focuses on the type and severity of lesions. Open and closed comedones indicate non-inflammatory acne, whereas papules, pustules, and nodules signify inflammatory lesions. Lesions are most prominent in seborrheic areas, including the face, upper back, and shoulders. Scarring and post-inflammatory hyperpigmentation may also be noted in chronic cases.[75,76]

- *Acne Severity Grading:*

Several standardised grading systems are used in clinical and research settings to assess the severity of acne.

✓ Global Acne Grading System (GAGS)- The Global Acne Grading System evaluates acne by dividing the face, chest, and back into regions and scoring lesions based on severity and area factors. It produces a total score that categorizes acne as mild, moderate, severe, or very severe, making it simple and widely used in clinical settings.[77]
✓ Leeds Revised Acne Grading System- The Leeds system uses standardized photographic templates to assess both inflammatory and non-inflammatory lesions. It provides a more objective and reproducible measure of acne severity across the face, chest, and back.[78]
✓ Cook's Acne Grading Scale- Cook's scale compares a patient's acne with a set of eight photographic standards ranging from clear skin to very severe acne. It allows quick visual grading and is commonly used in clinical trials due to its simplicity.[79]
✓ Investigator's Global Assessment (IGA)- The IGA is a 5- or 6-point scale rating acne from clear to very severe based on overall clinical impression. It is a standardized tool frequently used in clinical research and FDA-approved trials for evaluating treatment response.[80]

From an Unani perspective, diagnosis is based on careful clinical observation supported by an assessment of the patient's *Mizāj* (temperament) and humoral balance. Classical Unani physicians emphasize examining the colour, texture, and nature of skin lesions, palpating affected areas, and evaluating associated features such as oily skin and the presence of milky or cheesy exudates suggestive of *Balghām* predominance. A detailed history regarding digestion, diet, sleep patterns, emotional state, bowel habits, and lifestyle is also essential. The disorder is identified by its *bārid-ratab* temperament and characteristic milk-like (cheesy) secretions, which help differentiate it from other skin conditions, such as inflammation.[48]

VI. DIFFERENTIAL DIAGNOSIS

Several dermatological conditions can mimic acne vulgaris, necessitating careful differentiation to avoid misdiagnosis[1]. Common differential diagnoses include:

➢ Rosacea – Chronic facial redness with papules/pustules and telangiectasia; no comedones; worsens with triggers (spicy food, alcohol); common >30 yrs.
➢ Perioral Dermatitis – Papules/pustules around mouth, nose, eyes; spares lip border; linked to topical steroids/cosmetics; no comedones.
➢ Folliculitis – Infected/inflamed hair follicles (bacterial, fungal, yeast); red pustules on scalp, beard, trunk; itchy, uniform lesions; no comedones. Gram-negative type occurs after long acne antibiotics.
➢ Seborrheic Dermatitis – Red, greasy, scaly patches on scalp, face, chest; due to Malassezia; itchy; lacks comedones.
➢ Hidradenitis Suppurativa – Painful nodules, abscesses, sinus tracts in folds (axilla, groin, breasts); chronic, recurrent; no comedones.
➢ Milia – Small, firm, white keratin cysts on face; non-inflammatory, asymptomatic, no comedones.
➢ Pseudofolliculitis Barbae – Papules/pustules in beard area due to ingrown hairs after shaving; linked to curly hair; differs from acne by visible ingrown hairs.
➢ Keratosis Pilaris – Rough follicular bumps on arms, thighs, buttocks; due to keratin plugging; uniform, non-inflammatory, no comedones.
➢ Acneiform Eruptions (Drug-Induced) – Sudden monomorphic papules/pustules without comedones; linked to drug.
➢ Steroid Acne – Uniform papules/pustules on chest, back, shoulders; history of corticosteroid use; no comedones.
➢ Tuberous Sclerosis – Genetic disorder with facial angiofibromas on the nose/cheeks, ash-leaf spots, seizures, and intellectual disability.
➢ Demodicosis – Overgrowth of *Demodex* mites; rosacea-like papules/pustules with itching, burning, scaling; no comedones; confirmed by mite detection.[75,81]

- *Treatment*

In the modern aspect, Acne vulgaris is managed through a step-wise, severity-based approach that integrates skin-care advice, topical therapies, systemic agents, hormonal treatments, and physical modalities when needed. The goals are not only to clear lesions but also to prevent scarring, reduce psychosocial impact, and minimise treatment-related adverse effects.

➢ *General Measures*

- Daily cleansing with mild, non-comedogenic soap to remove excess oils.
- Avoiding oil-based cosmetics to prevent pore clogging.
- Dietary modifications, such as reducing dairy and high-glycaemic foods, which increase IGF-1 and sebum production.
- A diet rich in salads and fruits

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- Avoid picking of pimples[82]

➢ *Topical Medications*

- Retinoids: Retinoids, Such as Adapalene, Alitretinoin, Tazarotene, Tretinoin, Trifarotene, are effective first-line agents for mild to moderate acne, particularly comedonal and inflammatory types. They help to reduce sebum production.[83,84]
- Benzoyl peroxide: Benzoyl peroxide is a key acne treatment with strong activity against *P. acnes* and mild comedolytic effects. Available in 2.5%, 5%, and 10% strengths and multiple formulations like gels, creams, lotions, foams, bars, and pads. It is often combined with antibiotics like erythromycin or clindamycin for enhanced efficacy and to prevent antibiotic resistance.[85]
- Antibiotics: Antibiotics like clindamycin and erythromycin target *C. acnes* but risk resistance if used alone.[86]
- Azelaic Acid: Anti-inflammatory, antibacterial, and comedolytic, effective for hyperpigmented skin.[87]
- Salicylic Acid: Promotes exfoliation, unclogs pores, and has mild anti-inflammatory properties.[88]
- Dapsone: Effective for inflammatory acne, particularly in sensitive or dark skin types.[89]

VII. SYSTEMIC MEDICATIONS

➢ *Oral Antibiotics:*

Oral antibiotics, especially doxycycline, are effective in reducing acne lesions, with low-dose regimens offering similar results and fewer side effects. They should be prescribed for the shortest possible duration, usually 3–4 months, to limit resistance, and are often combined with agents like benzoyl peroxide. Common concerns include photosensitivity with doxycycline and pigmentation changes with minocycline. Though serious adverse effects are uncommon, careful monitoring is advised during therapy.[83,90]

➢ *Oral Isotretinoin:*

Oral isotretinoin, a systemic retinoid, is used primarily for severe, treatment-resistant acne. It reduces sebum production, shrinks sebaceous glands, prevents comedone formation, and inhibits bacterial growth. Typically started at 0.5 mg/kg/day and increased to 1 mg/kg/day over 15–20 weeks, its absorption improves with meals. Common side effects include dry lips, dry skin, photosensitivity, hypertriglyceridemia, and joint pain. Careful monitoring and patient education are essential during therapy.[91]

➢ *Hormonal Therapies:*

Hormonal therapies, including certain oral contraceptives and spironolactone, effectively treat various acne types, especially deep or lower-face lesions. Some oral contraceptives are FDA-approved for acne, while spironolactone, originally for hypertension, is safe for healthy women and works well alone or with contraceptives, offering an alternative when conventional treatments fail.[92,93]

➢ *Unani Treatment:*

- *Uṣūl-i-'Ilāj (Principles of Treatment)*

✓ Manage and remove the underlying cause of the disease.
✓ *Tanqīya* of the whole body for Evacuation of excessive *Balghām* (phlegm).
✓ Uses of *Muṣaffi-i-Khūn* advia (blood purifiers), to cleanse and regulate the system.
✓ Use of *Jālī* advia for *Tajliya* (local cleansing) to eliminate morbid matter from the affected site.
✓ Application of *Taḥlīl* (resolving) and *Tajfīf* (drying) therapies to disperse and reduce pathological substances.
✓ Correction of menstrual disturbances.
✓ Improvement of digestive function (*Iṣlāḥ-i-Haḍm*).
✓ Lifestyle Modification.[20,94]

- *Ilāj (Treatment)*

Treatment in Unani medicine is generally classified into the following approaches:

✓ *Ilāj bi'l Ghidhā'* (Dieto-therapy)
✓ *Ilāj bi'l Dawā'* (Pharmacotherapy)
✓ *Ilāj bi'l Tadbīr* (Regimenal Therapy)

➢ *Ilāj bi'l Ghidhā' (Dieto-Therapy)*

- Use of easily digestible foods (*Ghidhā' Sarī'al Inhiḍām*).
- Use of Vegetables possessing cold properties (*Ghidhā' Bārid*).
- Use only *Ghidhā'-i-Sāda* (simple food items) like *Turai* (ridge gourd), *Kaddu* (pumpkin), *Palak* (spinach), *Shalgham* (turnip), *Mūng* (green gram), *Arhar* (split red gram), mutton, etc.
- Regular intake of fruits, i.e. oranges, pomegranates, apples, and pears.
- Avoid *Radī'*(waste), *Fasid* (Putrified), and *Nāfikh* (flatulent) *Aghdhiya* like māsh ki daal (black gram), *matar* (pea), *gobhi* (cauliflower).
- Avoid *Sharāb* intake.[20,37,95]

➢ *Ilāj bi'l-Dawā (Pharmacotherapy)*

Systemic formulations

- The medicines employed are those having *Jali* (cleansing/detergent), *Musaffi* (blood purifying), *Muhallil* (resolvent), and *Tajfif* (desiccant) actions.
- *Istefragh balghām* (evacuation of phlegm) is done by using *Munzij* (like *Bekh Kasni, Asl us soos, Badiyan, Unnab*) and *Mushil* (like *Turbud, Roghan bedanjir*) therapy.
- *Ibn Sina* recommended the use of drugs with *Tajfif* and *Tahleel* properties in the management of *Buthūr Labniya*. For instance, *Kharbuq Safed* (one part) combined with *Ersa* (half part) as a *Latookh* (paste), or powdered *Injeer* and *Kalaonji (Nigella sativa)* with vinegar.[20]

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✓ *Mufrad (Single) Drugs Applied in Acne Management Include:*

- *Jali* (detergent): *Arad Karasna, Post Baize Murgh, Qaimuliya, Arad Istakhwan Sokhta, Baqla, Kalaonji, Kharbuq Safed, Beekh Soosan.*
- *Muhallil* (resolvent): *Alsi, Khatmi, Methi, Masoor.*
- *Musaffi-ud-Dam* (blood purifiers): *Shahitra, Unnab, Ushba.*
- Anti-Bacterial: *Neem* (Azadirachta indica), *Saad Kufi* (Acorus calamus), *Turbud* (Operculina turpethum).[20]

✓ *Murakkab Drugs, Which Have Musaffi-ud-Dam Preparations Recommended for Acne, Include:*

- *Majoon Ushba* – 12 g to be taken at bedtime.[37]
- *Qurs Mavīzi* – 2 tablets in the morning, and *Mugarabi* – 2 tablets in the evening, both with water.[37]
- *Qurs Musaffi* (500 mg) – 2 tablets, three times daily.[37]
- *Itrifal Shahitra* – 7 g, twice daily.[96,97]
- *Majoon Mundi* – 5 g, twice daily.[96,97]
- *Majoon Chobchini* – 5 g, twice daily.[96,97]
- Joshanda (Decoction) of blood-purifying drugs, prepared from *Shahitra (4 g), Chiraita (4 g), Sarphoka (4 g), Gul Mundi (4 g), Unnab (5 pieces), and Shakkar (6 g).*
- *Joshanda Aftimoon* as an additional herbal decoction.[37]

✓ *Topical Formulations*

- *Ḍimād muhasa*
- *Ṭilā' muhasa*
- *Tiryāq muhasa*
- *Ṭilā'-i Muhasa*
- *Ṭilā'-i Akbar*
- *Dawa-e-Muhasa*[98,99]

➢ *Ilāj bi'l Tadbīr (Regimenal Therapy)*

- *Fāṣd* of the *Qīfāl* (cephalic vein) and nasal vessels.
- *Munzij wa Mus'hil*
- Induction of *Ishāl* (purgation).
- *Amale Ta'areeq* (Diaphoresis)
- *Hijama bil shart* (Wet cupping)
- *Amale ta'aleeq* (Leech therapy)[20,95]

- *Ḍimād (Paste)*

✓ *Salīkha*, along with Shahed (Honey).
✓ *Shunīz*, *Būʼraq*, *Naushādar*, along with Sirka *Safeedah*, together with *Roghan gul*.
✓ *Arad karsna* with *shahad* (honey).
✓ *Irsa*, *Gungchi safaid*, *Barg-ī-neem*, *post-ī-saras* and *Namak-ī-Sāmbhar* in equal proportion.
✓ *Murdar sang* with *sirka.*
✓ Ash of wood of grapes with *sirka.*
✓ *Nakhudbaryan* (6 gm), *murdar sang* (3 gm), and *Safeedah kashghiri* (3 gm) along with the milk of a goat.[45,61,62,94]

- *Ṭilā' (Liniment)*

✓ *Murdār sang* 3.5g, *Sib'r Saqūtri* 17.5g, admixed with *Roghan gul* and *Sirka*.
✓ *Barg-i-neem*, *Bekh-i-So'san*, and *Post-i-Saras.*
✓ *Khak'si*, *Sandal Surkh*, *Sandal Safaid*, together with *Gulab*.
✓ *Shuneez* mixed with *Sirka.*
✓ Fine powder of *Zubdat al-Bah'r* (*kafe-i-Dariya*) 1part, *Badam talkh* 2 parts.[61,94]

- *Ub'tan*

✓ *Magh'z Gungchi Safaid* is mixed with *Roghan Kunjad* and applied over the face at night, and washed the next morning.
✓ Local application of paste prepared with the powder of *khūbkalān* (Sisymbrio irio Zinn), *Sandal Safaid* (Santalum album Linn.) and *Sandal Surkh* (Pterocarpus santalinus Linn.) mixed with rose water.[24,61,94,]

VIII. DISCUSSION

Acne vulgaris is a multifactorial disorder in which follicular hyperkeratinization, androgen-mediated sebaceous activity, microbial colonization, and inflammatory cytokines play a central role. Environmental, dietary, and psychosocial factors further modulate disease severity. Unani medicine conceptualizes acne (*Buthūr Labaniyya*) as a manifestation of humoral imbalance, primarily involving *Fasād-i-Dam* (vitiated blood), *Ghalba-i-Safra* (bile), and increased *Su'-i-Mizaj Haar* (intrinsic heat), alongside lifestyle and digestive disturbances.

Integrating modern biomedical insights with Unani principles provides a holistic framework, addressing both pathophysiological mechanisms and systemic humoral and lifestyle factors. Modern pharmacotherapy, topical retinoids, benzoyl peroxide, systemic antibiotics, isotretinoin, and hormonal agents effectively target lesion formation and inflammation. Complementary Unani interventions like regimenal therapy (*Ilāj bi'l Tadbīr*), dietary modifications (*Ilāj bi'l Ghidhā'*), and herbal formulations (*Ilāj bi'l-Dawā*), enhance humoral balance, reduce recurrence, and improve patient compliance.

IX. CONCLUSION

Acne vulgaris is a prevalent condition with significant physical and psychosocial implications. A comprehensive understanding of its multifactorial pathogenesis, incorporating both modern biomedical mechanisms and Unani humoral concepts, enables a holistic approach to management. Integrative strategies combining topical, systemic, and procedural modern therapies with regimenal, dietary, and herbal Unani interventions offer a promising avenue for improved efficacy, reduced recurrence, and enhanced patient satisfaction.

Effective acne management requires not only addressing lesions but also modulating lifestyle, diet, and

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psychosomatic factors. Preventive strategies grounded in both modern and Unani frameworks can contribute to long-term skin health and minimize post-inflammatory sequelae.

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