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An overview of Unani remedies for *Busoor-e Labaniyah* (Acne Vulgaris) and its principle of management

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Abstract
Busoor-e-labaniyah (Acne Vulgaris) is a chronic and most common skin disorder of pilosebaceous unit that affects almost all adolescent age groups. Its etiopathogenesis, preventive measures and effective treatment are comprehensively elaborated in classical Unani literature along with its detailed remedial measures and effective treatment. According to the Unani Humoural pathophysiology, the condition caused due to *Madda-e-Sadidiyah* (Suppurative material), which may be due to indigestion, menstrual abnormalities, spicy food, and excess of morbid matters in body. In the Unani system of medicine many drugs having properties like *jali* (Antiseptic), *daf-e-taffunn* (Antibacterial), *muhallil* (Resolvent) and *musaffi- e- dam* (blood purifier) found to be quite safe, effective and being successfully used by unani physician in the treatment of *Busoor-e-labaniyah*. As we aware of the prolonged use of comedolytic agents, systemic antibiotic and steroids cannot administered more often as the problem is mostly recurring due to their adverse effect. As the world turnings towards globalization, there is a need of the hour to explore these traditional drugs, formulations and topical regimens from the treatise of Unani Medicine to provide the proper cure & combat the challenge.

Keywords: Busoor-e-labaniyah, Madda-e-sadidiyah, daf-e-ta'ffun, Unani Medicine Propionibacteriun acne, Staphylococcus epidermidis

Introduction
Busoor-e-labaniyah (Acne Vulgaris) is a genetic or acquired condition of the pilosebaceous units that derives its name from the Greek word "akme," which meaning peak or apex. Acne vulgaris is the official designation for the condition. The affected patients, between 70% and 80%, range in age from 11 to 25. [Bezalwar *et al.,* 2014] [18]. Inflammatory and non-inflammatory lesions of the hair follicles and sebaceous glands, often known as the pilosebaceous unit, are the hallmark of acne vulgaris. [Degitz *et al.,* 2007] [26]. At adolescence, some acne is common, but severe occurrences can leave scars long after treatment and can have an unpleasant appearance. Open comedons (Blackheads) and closed comedons are two different types of non-inflammatory lesions (White heads). Papules, pustules, cysts, and nodules are the outward signs of inflammatory lesions. (Daud *et al*., 2013; Sawarkar *et al.,* 2010) [25, 59]. *Busoor-e-labaniyah* (Acne Vulgaris) sufferers levels of social, psychological, and emotional impairments are comparable to those reported by patients with more severe conditions like asthma, epilepsy, diabetes, back pain, or arthritis, according to comparisons with other chronic illnesses. [Mallon *et al.,* 1999] [47]
Every year, it costs at least 2.5 billion dollar in the United States and affects around 40–50 million individuals. *Busoor-e-labaniyah* (Acne vulgaris) accounts for 0.3% of all diseases worldwide and roughly 16% of all dermatological diseases. [Anjum *et al.,* 2021] [6]. A systemic analysis for the global Burden of Disease study indicated that acne was the eighth most prevalent disease globally in 2010. Patients with acne has a profound impact on a patients emotions as self-embarassement, unworthiness, self-esteem, annoyance owing to physical symptoms like itching and pain. (Tasoula *et al.,* 2012; Hayashi *et al*. 2004) [8, 34].

Busoor-e-labaniyah (Acne Vulgaris) in Unani System of Medicine

Renowned Unani scholars have detailed a dermatological disorder called *Busoor-e-Labaniyah* in their illustrative literature, which is clinically similar to Acne vulgaris today.

Creditable unani scholars named as *Abu al-Hasan Ali ibn Sahl-Rabba-al-Ṭabari* described in his famous book *'Firdous al-Hikmat'* (Paradise of wisdom) a full explanation of sebaceous glands. *Abu Bakr Muhammad ibn Zakariyya Al-Razi* explained the treatment of *Busoor-e-Labaniyah*(Acne vulgaris) in his famous book *Al-Hawi* (The Virtuous Life) [Rhazi, 1994] [54]. In 980-1037 AD *Abu Ali al-Husayn ibn Abdullah Ibn-Sina* (Avicenna) in his renowned book *Al-Qanun fi'l Tib* (The Canon of Medicine) had explained the clinical presentation and etiopathogenesis of *Busoor-e-Labaniyah* according to him it is found on cheeks and face known as "*Nuqta-e-labaan*" (Acne vulgaris) due to its resemblance. [Sina, 2010] [61]. *Ibn Hubal* (1122-1213 AD) explained in his famous book '*Kitab- al-Mukhtarat- fil- tiḅ* about the cause and clinical presentation of *Busoor-e- Labaniya.* [Baghdadi 2007] [16]. *Muhammad Akbar Arzani* and in 1813-1902 AD, *Mohammad Azam Khan* had explained the clinical presentation of *Busoor-e-Labaniyah*in in their famous book '*Tiḅ-e-Akbar', 'Mizann-al-Tiḅ'* and *Aksir-e-Azam* [Khan 191; Arzani, 2002; Arzani, YNM,] [12].

The pathogenesis of acne is multi factored, involving seborrhea, microbial proliferation, inflammation, and abnormal desquamation of follicular epithelium. Excessive sebum production, brought about by hormonal changes (in particular, an increase in the production of androgens associated with the onset of puberty) is followed by abnormal desquamation of follicular corneocytes. The mixture of cells and sebum creates an environment for the proliferation of *Propionibacterium acnes*. [Thiobout *et al.*, 2009] [69]. Chemotactic factors released by *P. acne* attract lymphocytes and ne utrophils, as well as producing other pro inflammatory molecules and causes papules, pustules. cyst, nodules. [Zouboulis, 2014; Das & Reynold, 2014; Charde, *et al.*, 2014] [55, 24, 22].

The main cause of *Busoor-e-Labaniyah* is inflammation of *Ghudud-e-duhaniya* (sebaceous gland) [Arzani, 1956) [13]. In Unani system of medicine, the etiology of this disease is considered to be *Madda-e-Sadidiyah* (Suppurative matter) which is removed in the form of vapours towards external surface of skin [Kabiruddin 2009, Tabri 1997] [40, 67] or *fasid madda* (morbid matter) which is separated from blood and removed through skin [Khan, 1917; Tabri, 1995] [42, 66]. It is also considered that these eruptions are seen on the external body when *tabiyat* (Medicatrix naturae) removes humours towards the skin from the body and they were named to different sites of eruptions. [Sina, 2010; Baghdadi, 2007] [61, 16].

Etiopathogenesis of *Busoor-e-labaniyah* (Acne Vulgaris)

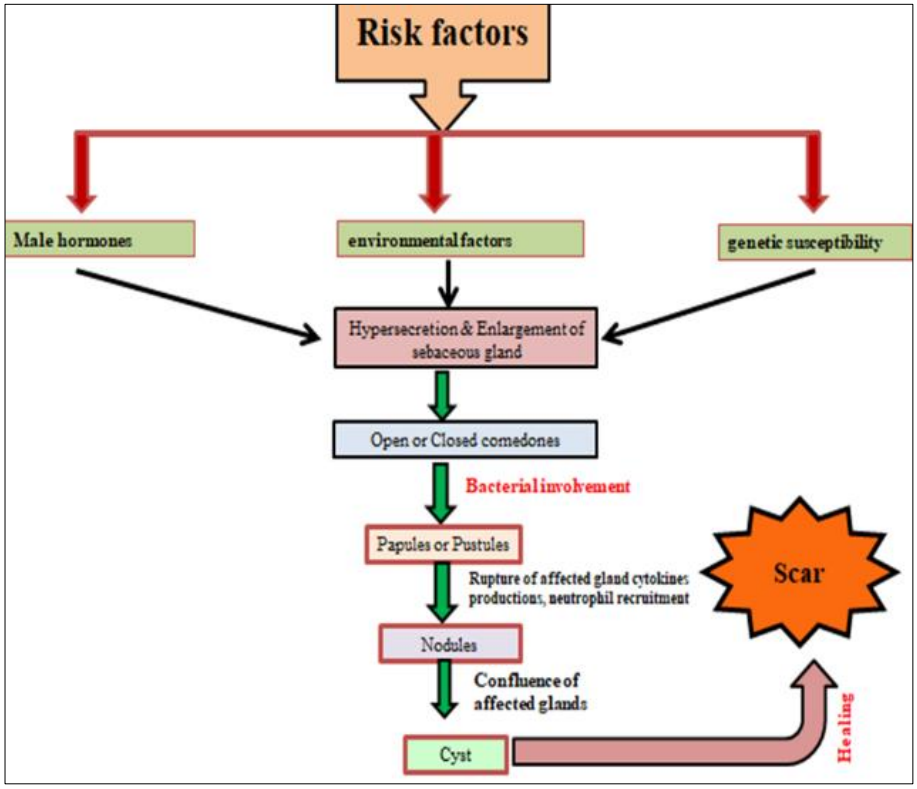

Fig 1: Etiopathogenesis of Acne vulgaris

Conventional treatment **(**William, 2012; Gupta, 2019; Burns *et al.*, 2008) [13, 31, 21]

a) Skin Hygiene: It is a necessary step but excessive use of soap for cleansing face causes dryness of skin and also exaggerate the inflammatory lesion.

b) Counseling and support: As reported the acne cause the negative impact on life so, there is a need to counsel the patient and their relapse and also the duration of the disease.

c) Topical treatment: It is highly acceptable by patient and first line of treatment of acne as use of retinoids, antibacterial formulation.

d) Systemic treatment: Oral antibiotic, isotretinoin, OCPs.

e) Surgical intervention: As the advancement of science there are many therapies for treating active acne lesions and scarring

Fate of Conventional medicine in the treatment of *Busoor-e-labaniyah* (Acne Vulgaris)

For its treatment, pharmacological therapies involve topical and systemic therapy. Topical agents include benzoylperoxide, retinoids, azelaic acid, and clindamycin, while systemic treatment includes antibiotics (Tetracycline, clotrimoxazole, azithromycin), retinoids (Isotretinoin) [Zaenglein, 2018] [75] hormonal therapy (Contraceptives), and anti-inflammatory medications. While surgical intervention includes incision and curettage of cysts. [Anjum *et al.*, 2021] [6]

Long-term use of these therapeutic modalities is frequently accompanied by unwanted side effects, such as erythema, irritation, peeling, burning, drying, and bleaching of the hair; isotretinoin use has teratogenic effects, cheilitis, paronychia, hepatitis, and tetracycline use results in gastrointestinal distress and diarrhoea; hyperpigmentation; and other side effects. [Anjum *et al.*, 2021; Lone *et al.*, 2012] [6, 46]. Also the retinoids are contraindicated in pregnany [Yentezer *et al.*, 2009] [74]. Resurfacing, punch excision, laser surgery, dermabrasion, usage of fillers, photodynamic therapy, cryoprobe, cryopeel, cryoslush, and superficial chemical peeling are surgical treatments for acne. [Hirsch & Lewis, 2001; Sakamoto *et al.*, 2010] [35, 56].

Erythema hypo or hyper-pigmentaion, secondary infections, and hematoma can all result from improper approach.

These therapies are not free from side effects and are cost effective. Patients can't afford these therapies or if they join, but due to some reason not able to complete their sittings.

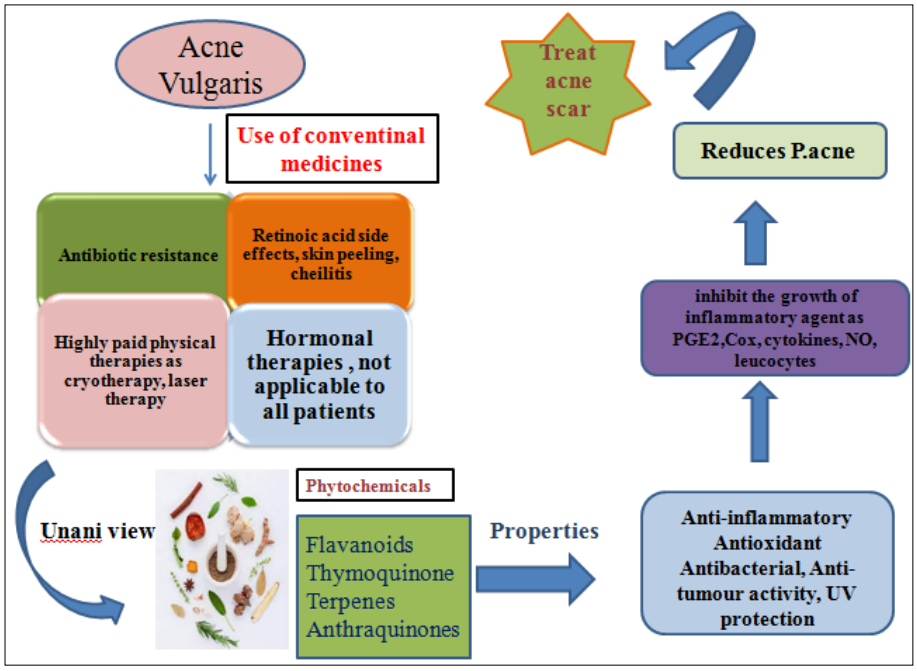

Fig 2: Treatment aspect of Acne Vulgaris

***Usool-e-Ilaj* (Principles of Treatment):** There may be two types of treatment for *Busoor-e-Labaniyah* (Acne vulgaris) in Unani system of medicine

- Treat the main cause [Samarqandi, 2007; Aleem, 2002; Bhat *et al*., 2016] [58, 4, 19]
- Treat constipation related issues [Samarqadi, 2007; Hasan *et al*., 2002] [58, 32]
- Use of *Muaddilat wa musaffi dam* (Blood purifier) for systemic therapy [Ahmad, 2004; Hasan, 2002] [2, 32]
- Use of *muhallilat* (Resolvent) internally[Ahmad, 2004] [2]
- Topical therapy with *Daf-e-taffun* (Antiseptic) and *mohallil* (Resolvent) *jali* (Detergent) drugs etc. [Samarqandi, 2007; Aleem, 2002; Khan. A 1917] [58, 4, 42]
- *Tanqiya-e-Dimagh wa Batan* (Evacuation of body and brain) [Samarqandi, 2007; Arzani, 2002] [58, 12]
- Consumption or application *of Tahlil wa Tajfif* (Resolution and Desiccation) medications. [Samarqandi, 2007; Sina, 2010] [58, 61]
- Treat women with problems linked to menstruation. [Samarqandi, 2007] [58]
- Steer clear of hot, spicy foods and too much sun exposure. [Samarqandi, 2007; Aleem, 2002] [58, 4]

***Ilaj* (Treatment): may be of two types for treatment of *Busoor-e-Labaniyah* (Acne vulgaris) in Unanni system of medicine**

1. Topical treatment
2. Systemic treatment

a. *Tanqiya-e-badan* (Evacuation of body)
b. Dieto therapy
c. Internally use of resolvent and blood purifier medications [Anjum *et al.*, 2021] [6]

***Mujarrib nuskhajat* (Commonly used topical formulations)**

1. *Kaf-e dariya alone/with haldi* [Ghani, 2010; Khan, 2006; Anonymous, 2005] [29, 43, 8]
2. *Husn-e-yusuf, tukhm-e-khashkhash, daarcheeni* mix the powder of these drugs with goats milk and apply at night and wash off with besan in morning. [Aleem, S., 2002] [4].

3. *Aarad nakhud biryan* -6 ma'sha,*murdarsang* – 6 ma'sha, *safeda kashghari*-4 ma'sha 4 admixed with goat's milk and apply at nigh, in morning wash the face with *aab-e-neem.* [Samarqandi, 2007) [58].
4. Ash of grape wood with *sirka.* [Samarqandi, 2007) [58].
5. *Aarad baqla, tukhm-e-khashkhash, aarad turmus, maghz-e-tukhm kharpaza, maghz-e- badam talkh* (6 gm) all the ingredient and saffron 3gm admixed with water. [Kabiruddin, 2010] [39].
6. *Tukhm-e- kanar*(*ber*), *beekh mehak, qust talkh* all are in equal quantity admixed with water and apply on face. [Anonymous, 2005] [8].
7. *Tukhm-e- turb, gul-e-banafsha, mako, kateera* all are in 6 gm quantity poder them and mixed with *aab-e kela* and *aab-e-barg khyar* make a paste and apply on face. [Anonymous, 2005] [8].
8. *bargh-e-neeb, beekh soosan, post saras, maghz-e-ghonghchi, safed namak sang* admixed with water and apply at night wash off in morning. [Anonymous, 2005] [8]
9. *Shoniz, bura Armani, naushadar* admixed with *sirka.* [Sultana *et al.*, 2015] [62]

Tanqiya-e-Badan

Tanqiya of the entire body and and brain by *Fasad and Ishal* was advised by a Unani scholar (Qarshi, 2011; Samarqandi, 2007) [53, 58]. Vessels in the nose and the *Fasad of Sararoo* (*Qifal*). Purgation (*is'haal*) through *the oral use of Aftimun, Habb-e- Quqaya, Habb-e- Sibr, or Habb-i Ayarij* [Khatoon *et al*., 2021; Bhat *et al.*, 2016] [45, 19]

***Ilaj-bil-ghiza* (Dieto therapy)**

1. Avoid acidic, sugary food, ghiza-e-kaseef (Heavy diet as beef)
2. Use *ghiza-e-lateef* (Low calories diet) and readily digestible foods such as fruits. [Aleem, 2002; Bhat, *et al.*, 2016; Anjum *et al.*, 2021] [4, 19, 6]
3. Making use of *saada ghiza* (simple diet) to make *Turai, Kaddu, Palak, Arhar Daal, Moong*, and *Shalgham.* Steer clear of alcohol, fried, hot, and spicy meals, brinjal, and masoor. [Qarshi, 2011] [53]

Effective unani formulation to treat *Busoor-e-labaniyah* (Acne vulagaris)

Internally *musaffi dam* and *muhallil* (blood purifiers and resolvents) drugs are used. In unani system of medicine there is bountiful single drugs and formulations available which are having these properties and pharmacological actions.some of them are mentioned in table 1.

Table 1: Effective Unani formulations

Name of formulation	Ingredients	Dose	References
Sharbat Unnab	Unnab	25 ml b.i.d	Kabiruddin, 2010 [39]
Majoon Ushba	Sana makki, chobchini, daarchini, barg-e-gauzaban, sandal surkh, sandal safaid. Bisfaij fastaqi, aftimoon wilayti, kababchini, sumbul tib, post halela zard, halela siyah	12 gm bed time	Anjum *et al.*, 2021 [6]
Habb-e-chobchini	Chobchini, Heel kalan, Darchini, Bisbasa, Bekh Badiyan, Aaqarqarha, Jauzbua, Zanjabeel, Ood Hindi, Mastagi, Kateera	5-10 gm	Anonymous, 2001 [7]
Itrifal mundi	Post halela zard, halela siyah, post halela kabuli, post balela, amla khushk, tukhm-e-kishneez, barg-e-shahtara, asl-us-soos, ustukhuddus, gul-e- mundi, qand safaid, raughan-e zard	10-20 gm	Anonymous, 2001 [7]
Itrifal shahatra	Shahatra, post halela zard, post halela kabuli, post balela, berg sana makki, gul-e-surkh, maweez munaqqa	5-10 gm	Anonymous, 2006 [9]
Decoction	Unnab, sarphooka, muni, Shahtra, chiraita	6gm b.i.d with sharbat unnab 25 ml	Aleem, 2002 [4]
	Post halela zard, sarphooka, gul-e surkh, barg-e-shahtra, tukhm-e-kishneez, barg-e-hina, dhamaya, sandal surkh,sandal safaid, brahamdandi, neel kanthi, zeera safaid, filfil siyah, gul-e-kachnal, barg-e-bakayin, barg-e-neem	500 mg	Anonymous, 2001 [7]; Kabiruddin, 2010 [39]
Arq-e-mundi	Mundi	6 taula (72 gm) with sharbat unnab	Kabiruddin, 2010 [39]
Arq-e-ushba	Ushba, chobchini	5-10 taula (60-120 ml)	Kabiruddin, 2010 [39]

Besides the compound formulations a number of single drugs which are commonly being used for the successful management of *Busoor-e-labaniyah* (Acne Vulagaris) by the unani physicians since a long ago meanwhile recent scientific studies revealed the acclaimed unani single drugs are present in table 2 as under,

Table 2: Single drugs used in Acne with Active Pharmaceutical Ingredients (API)

Unani name	Scientific name	Active Pharmaceutical Ingredient	Use in Busoor-e-labaniyah (Acne Vulgaris)	Refrences
Neem	*Azadirachta indica* (Meliacae)	Limnoid, Nimbin	Anti-inflammtaory, Antieptic Antimicrobial Antifungal	Islas *et al*., 2020] [38]. [Biswas K 2002] [20] [Hashmat, I. 2012] [33]
Post Siras	*Albizzia lebbeck* (Fabacae)	Cardenolide glycosides, anthraquinone glycosides,flavanoids and saponins,	Anti-inflammatory Antibacterial	Mishra *et al*., 2010] [49]. [Bapu, N. P., 2009] [19]

Kalonji	*Nigella sativa* (Ranunculacae)	Thymoquinone	Antibacterial, anti-inflammatory, antioxidant	Ahmad A *et al*. 2013 [1]
Daarchini	*Cinnamomum zeylanicum* (Lauraceae)	Cinnamaldehyde,benzaldehyde, Cinnamyl acetate	Antibacterial antioxidant	Unlu *et al*., 2010 [71]
Tukhm-e-khashkhash	*Pappavar somniferum* (Papaveracae)	Sanguinarine, quaternary benzo- phenanthridine alkaloid,	Anti-bacterial	Chaudhary *et al*., 2013 [23]
Mulethi	*Glycirrhiza glabra* (Leguminosae	Glycyrrhizinic acid, Glycyrrhetinic acid; Glabridin, isoliquitygerine Lichochalcone, licocoumarine,	Lighten hand solar lentigines, Reduction of erythema, oedema, and itching scores, antimicrobial, antioxidant, anti-inflammatory	Postorina G. *et al*. 2018 [52]; Kaur *et al*., 2013 [41]
Khaksi	Sisimbrium irio (Brassicaceae)	Flavanoids and phenolic compounds	Antibacterial, anti-inflammatory, Antioxidant	Tiwari *et al*., 2022 [70]; Al Jaber *et al*., 2011 [5]
Zarawand	*Aristolochia longa* (Aristolochiacae)	Aristolochic acid, maaliol,limonine, palmitic acid	Antibacterial, anti-inflammatory, Antioxidant	Al-Idreesi *et al*., 2020
Alsi	*Linum usitatissimum* (Linacae)	Secoisolariciresinol diglucoside	Anti-oxidant, anti-inflammatory	Shim *et al*., 2014 [60]
Rose	*Rosa damascena* Mill (Rosaceae)	Citronellol, geraniol, nerol	Anti-inflammtory, ant-oxidant	Mileva *et al*., 2021 [48]
Banafsha	*Viola odorata* (Violaceae)	citronella, geraniol, salicylaldehyde and linalool	anti-inflammatory, healing and soothing	Akhbari, *et al*., 2012 [13], Ansari, 2019 [10]
Post anar	*Punica granatum* (Punicaceae)	Ellagitannins, ellagic acid and punicalagin.	Anti –inflammatory	Houston *et al*., 2017 [36]
Sibr	*Aloe barbadensis* Miller (Liliacae)	Aloin, emodin aloesin, Salicyclic acid, saponins, auxins, gibberlins	Anti-Inflammatory. antitumour, antiseptic, anti-fungal, antibacterial, soothing	Surjushe, *et al*., 2008 [64]

A number of clinical trials have been done on several Unani formulations for the management of *Busoor-e-labaniyah* which are found to be quite effective & safe. Some of the studies are mentioned below.

1. A study done by Lone, *et al.*, 2012 [46] in which a unani formulation known as *zimad-e-muhansa* was applied locally once at night on face for 45 days and to evaluate the severity of acne and the efficiency of treatment, the Cook's Acne Grading Scale was employed. Data showed that the Cook's acne grading scores of the post-treatment group dramatically decreased with no side effects or adverse effect. [Lone, *et al.*, 2012] [46].s
2. In another study which is done by Sultana, *et al.*, 2015 [62], the local use of a paste made of *Shoniz* (*Nigella sativa*), *Naushadar* (Ammonium chloride), and *Bura Armani* combined with *Sirka* (Vinegar) is advised in their clinical trial for the treatment of acne vulgaris. demonstrates that, when combined with *taqlil-e-ghiza tadabir*, the test medication formulation is both a safe and effective treatment for *Busoor-e-Labaniyah* (Acne vulgaris). The trial formulation can be suggested to treat mild to severe *Busoor-e-Labaniyah* because no pharmacological adverse effects were reported. [Sultana, *et al.*, 2015] [62].
3. Doni, *et al.*, in 2022 [27] in their single arm clinical trial, 31 clinically diagnosed patients with acne vulgaris received *Ṭila-e-Muhansa* (*Azadirachta indica A. Juss.*, *Albizia* lebbeck L., and *Iris ensata*) to be applied on the afflicted site every night and washed off with normal water after 20–30 min, of whom 30 completed the protocol therapy. The primary outcome measures were changes in subjective parameters such as comedones, papules, pustules, erythema, and itching, assessed on a 4-point grading scale, and change in investigator's global assessment (IGA) for overall disease severity, at baseline, 7th, 14th, and 21st days. Acne vulgaris was successfully treated in their clinical experiment with no negative side effects. [Doni, *et al.*, 2022] [27]
4. Parveen, *et al.*, *in* 2009 [51], conducted a study in which they compare to the control formulation of Azithromycin and Benzoyl peroxide gel and the test formulations including a dried aqueous extract of *Shahatra* and *Zimad Muhasa* were found to be more efficient and safe in the management of acne vulgaris in moderate to severe acne [Parveen, *et al.*, 2009] [51].
5. Salam, *et al.*, *in* 2020, in their clinical trial, *Itrifal Shahtara* and *Sharbat-e-Unnab* efficacy were assessed in acne vulgaris. It is found that, these above mention formulations are extremely significant for pustules, pruritus, macules, and papules, while the results for vesicle are only moderately significant, but they are simply observed to be safe and effective in treating acne vulgaris based on outcomes [Salam, *et al.*, in 2020] [57].
6. Azhar *et al.*, in 2020 [14] conducted a study in patients with acne vulgaris in which the patients adviced to apply *Tila-i Muhasa* or 5% Benzoyl Peroxide (BPO) once daily for 6 weeks. A total of 60 patients (30 in each group) completed 6 weeks of treatment. The mean percentage reduction in GAGS(Global Acne Grading System) score at 6 weeks from baseline in Unani group (66.97%) and BPO group (59.09%) was statistically significant (p<0.0001). After 6 weeks of therapy, the mean percentage reduction in PGA(Patient Global Assessment) score compared to baseline in Unani group

(57.44%) and BPO group (50.23%) was statistically significant ($p<0.0001$). No serious adverse events were reported in both groups; however, mild adverse events occurred more frequently in BPO group (30%) compared to Unani group (10%). [Azhar *et al.*, in 2020] [14].

Conclusion

The present review explored the Unani classical literature having its philosophical and temperamental layout and pathological changes occurred in *Busoor-e-labaniyah* (Acne vulgaris). The most effective single and compound formulations were rediscovered with special focus on the active constituents and researches recently carried out along with topical regimen. The core humoural philosophy of the treatment and etiopathogenesis was exclusively discussed at length. principle of treatment. The review is also substantiated with the experimental and clinical studies which have been carried out to demonstrate the efficacy of illustrated drugs to find out the pharmacokinetics of the active constituents of the single and compound drugs.

Henceforth, the review reflects the Unani System of Medicine has a comprehensive regimen to combat the challenging disorder so that these effective remedies and regimen should be systematically designed and develop at the global standard for the better compliance, cost effective and safe management of *Busoor-e-labaniyah* (Acne vulgaris).

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