



## Acne in Traditional Persian Medicine

*Laila SHIRBEIGI<sup>1</sup>, \*Mohammadreza RAHBAR<sup>2</sup>, Parvin MANSOURI<sup>2</sup>, Mahboobeh SALMANIAN<sup>3,4</sup>, Ali GHOBADI<sup>3,5</sup>*

1. Department of Persian Medicine, School of Persian Medicine, Tebran University of Medical Sciences, Tebran, Iran
2. Skin and Stem Cell Research Center, Tebran University of Medical Sciences, Tebran, Iran
3. Department of Persian Medicine, School of Traditional Medicine, Iran University of Medical Sciences, Tebran, Iran
4. Research Institute for Islamic and Complementary Medicine, Iran University of Medical Sciences, Tebran, Iran
5. Department of Traditional Pharmacy, School of Traditional Medicine, Iran University of Medical Sciences, Tebran, Iran

\*Corresponding Author: Email: [mrzrahbar@yahoo.com](mailto:mrzrahbar@yahoo.com)

(Received 11 Aug 2018; accepted 20 Dec 2018)

### Abstract

**Background:** Acne Vulgaris is a common skin condition in 35%-90% of youth. Although traditional methods of treating acne in Iran seem to be common and high demand, a few studies about this issue have been accomplished. This study aimed to find out how much definitions and recommendations about this condition in Traditional Persian Medicine (TPM) are similar to contemporary medicine.

**Methods:** Seven main reference books from TPM were selected. The equivalents of acne in TPM were found and comparison of the definitions and recommendations of TPM and CM were extracted. Two diseases called Namlah and Bosoor-Labanieh were most similar to acne. These keywords were searched in TPM Books by using "Noor software".

**Results:** In TPM references, two diseases of "Namlah" and "Bosoor-Labanieh" are very similar to acne. The cause of these diseases in TPM textbooks has been explained as the effort of the body for the disposal of wastes through the skin and accumulation of them below it. The treatments are lifestyle modification, drug therapy, and manual interventions.

**Conclusion:** Interventions of TPM have been experienced by Iranian physicians of the Old Testament over hundreds of years. There are meaningful similarities among TPM texts in descriptions and advice. In addition, there are remarkable similarities in the disease characteristics and some of the recommendations for acne in TPM and CM. The effectiveness and cost-benefit of the recommended TPM therapeutics and methods can be considered and evaluated as hypotheses for the case and group studies and clinical trials.

**Keywords:** Traditional Persian medicine; Traditional Iranian medicine; Acne

## Introduction

Acne is a chronic dermatosis with polymorphic aspect. Non-inflammatory lesions include open comedones (blackheads) and closed comedones (whiteheads). Inflammatory lesions include papules and pustules or nodules (1). It is the eighth most common disease in the world and 650 million people in the world are affected (2). The cost

of acne treatment in the United States is about \$ 3 billion a year (3). The topical and oral medications can somehow improve symptoms, but none of these treatments are without side effects (4). There are several risk factors for acne, but more studies should be conducted in order to prove them (5). Changes in nutrition and lifestyle can

reduce the rate of drug use and their side effects, and costs (6).

Meanwhile in recent years, people's desires to use herbal medicines have been increased. According to WHO, the world's total sales of herbal medicines are about \$ 62 billion, estimated that these sales will reach \$ 5 trillion by 2050 (7). The use of complementary therapies, including herbal drugs in cases of chronic diseases including acne has increased (8). The effects of acne on general appearance and its chronicity make it important with more desire to apply traditional medicine products due to the psychological aspects. People active involvement in the control of the diseases can control some of the disease-related stress (9). Despite the rapid development of the use of traditional medicine, in the treatment of acne, there are still a few studies in this area.

This study was the answer to the initial questions about the effects of applying TPM in the treatment of acne. This study could be the hypothesis for other studies in the field of TPM.

## Methods

The methodology of this study was based on three axes. First, the choice of reference books from TPM, second finding the equivalent of acne in TPM books and third comparison of the definitions and recommendations of TPM and CM. Experts' comments were used to select 7 main reference books from Traditional Persian medicine. Given the difference in the naming of acne in the traditional medical texts with CM, to achieve the equivalent of it in TPM texts, we reviewed symptoms with similar characteristics. Two diseases Namlah and Bosoor-Labanieh were most similar to acne. Bosourat is the plural of Basare, which means dermal skin lesion and Labanieh means oily. Namlah means wound or pustule. These keywords were searched in TPM Books. This search was done using software called Noor software. This application is a tool for searching for TPM references.

The following books were chosen:

Contents related to the definition of disease, causes, exacerbation factors, and treatment of the diseases were extracted and entered in tables. Finally, they were compared with the CM.

## Results

According to TPM there are three main causes of acne or "Basareh" or swelling formation in the skin:

- "Basareh" is an abnormal swelling that can be produced by any accumulation of waste product in any organ (10). Therefore, the first cause of "Basareh" or swelling in the skin is the accumulation of waste products under the skin. Based on PM texts in the human body there is a natural force that regulates the function of the internal organs. Therefore if there is an increase in body waste products, natural force transmits them to the skin in order to protect internal organs against danger of accumulations of them. Therefore, based on TPM "basareh" is created from waste products disposed via the body's natural defoliation routes.

- "Sue-Mizaj" or "Dystemperament" is the second cause of "Basareh" or swelling formation. It causes accumulation of waste deposits under the skin.

- "Transmission crisis" or "Bohran-e-Enteghal" is the third cause of "Basareh" or swelling formation in skin. It means difficulty in transmission of waste products. When natural force cannot defeat the body during the acute phase of a disease, thus efforts are being made to remove the disease agent, trying to transfer them from the inside of the body to the outside like skin, which its appearance is seen in the form of various skin lesions, including Basareh" or swelling. According to this mechanism different kinds of "Namlah" appears during "Transmission crisis" (11)

Characteristics of "Namlah" and "Bosoor-Labanieh" in most famous traditional medical textbooks are mentioned as below:

### Canon of Medicine

In the book of the Canon of Medicine, 57 times, the word “Namlah” has been repeated. Overall, 28 times drug prescriptions have been advised for it. The definition of the “Namlah”, its types and causes are discussed and a section has been dedi-

cated to its treatment. In Canon “Namlah” disease arises from the yellow bile humor. There are different types of “Namlah” such as "simple non-progressive", "corrosive progressive" or “Akalla” and “Javarsiye”. The characteristics of these types of Namale are listed in Table 1 (12).

**Table 1:** Acne in the Canon of Medicine book (12)

Name	Types	Area	Clinical manifestation	Cause	Principles of treatment
“Namlah”	Simple progressive (Mild form)	Skin	A small yellow inflamed superficial round swelling sometimes creating wounds	-Lack of complete food digestion in stomach and liver (incomplete first and second digestion stage), Transmission crisis in acute diseases	Oral herbal medicine for Remove of yellow bile - Topical ointment - Mechanically remove with a lancet - Oral herbal medicine to remove black bile, phlegm, and yellow bile -Topical ointments
	Progressive or corrosive form (Moderate to severe)				
	Javesiyeh		Less inflamed Progressive skin lesion Sometimes self-improve, sometimes creates wounds		
“Bosoor-Labanieh”s	“Bosoor-Labanieh”s	Nose and face	White spots like milk drops		Topical ointment

### Book 2: Kamel al-Sna'iyat al-tibi (13)

The word “Namlah” has been repeated 31 times. On one page, the definition of the “Namlah” in different types and its treatment has been described around 16 lines. “Namlah” is listed 3 times elsewhere as a type of eye disease and its attributes are stated. The removal of “Namlah” with a tool is explained in 3 lines in a section. Abnormal yellow bile is the responsible humor of disease, if diluted, causes a simple “Namlah” and if diluted and hot, it passes the layer of the skin and conflicts with the layer of subcutaneous tissue, it is called the “corrosive Namlah”; and if the bile is moderate inconsistency, it causes “Javresiyeh’s Namlah”. The cause of abnormal bile can be related to the suemizaj or dystemperament of the liver (13).

Table 2 shows acne in Kamel al-Sna'iyat al-tibi.

### Book 3: Zakhireh Kharazmshahi (11)

The word “Namlah” and “Gavarseh” have been repeated 28 and 7 times respectively. “Namlah”

has been described as a type of pulse in 6 places in the book. A description of a type of eye disease has been called “Namlah” described in two lines, and in one section the definition of “Namlah” and “Gavarseh” is described as a skin disease. Three lines are dedicated to the description of various treatments of “Namlah”. Table 3 shows namlah in Zakhireye Khwarazmshahi Yellow bile mixed with blood humor is known to be the main cause of the “Namlah” disease. This yellow bile after passing the subcutaneous tissue comes to the skin surface and causes skin lesions and is named “simple Namlah”. If this bile is thick and can’t be secreted from the subcutaneous tissue to the skin and stay there, it produces wound in the skin and is named “moteakeleh namlah” (corrosive). If the black bile and phlegm humor mix with yellow bile “Gavarseh Namlah” would occur (11).

**Table 2:** Acne in the Kamel Al-Sna'yat book (13)

<i>Name</i>	<i>Types</i>	<i>Area</i>	<i>Clinical manifestation</i>	<i>Cause</i>	<i>Principles of treatment</i>
"Namlah"	Sazeje Namlah" (Mild form)	Skin	Superficial spreading skin lesion with burning	Dystemperament of liver -Lack of complete food digestion in stomach and liver (incomplete first and second digestion stage)	-Oral herbal medicine for remove of yellow bile -Topical ointment -Mechanically remove with a lancet
	"Moteakele Namlah" (corrosive) (Moderate to severe form)	Skin and subcutaneous tissue	Progressive skin lesion with itching, Burning and feeling the heat At the touch		Topical herbal treatment Mechanically remove with lancet
	Javarsiyeh	Skin	Creating wounds Javers Grain-shaped wounds (Milletlike)		-

**Table 3:** Acne in the Zakhireye Khwarazmshahi (11)

<i>Name</i>	<i>Types</i>	<i>Area</i>	<i>Clinical manifestation</i>	<i>Cause</i>	<i>Principles of treatment</i>
"Namlah"	Simple "Namlah" (Mild form)	Skin especially in hands	Round and small yellow swelling, around the lesion, is red with wide base Wounded easily With itching and burning	Lack of complete food digestion in stomach and liver Transmission crisis in acute diseases	-Oral herbal medicine for Remove of yellow bile -Topical ointment
	"Moteakeleh Namlah" (corrosive) (Moderate to severe form)	Skin			-
Javarsiyeh	Javarsiyeh	Skin	Many small swelling Around it is red with a burning sensation		Oral herbal medicine for Remove of yellow bile, black bile, and phlegm

**Book 4; Tib-e-Akbari (14)**

The words "Namlah" 15 times and 'Javarsiyeh' 3 times are repeated respectively. The description of an eye disease called "Namlah" is stated in 3 lines, and the meaning of the word "Namlah" is brought up 4 times as Ant, and the description of "Namlah" and "javarsiyeh" and their treatment is brought up in 2 pages, about 18 lines. Here the yellow bile humor causes disease named simple "Namlah", and if the yellow bile is mixed with blood humor, which is abnormal, it would cause

"Moteakele Namlah" (causing wound). If the yellow bile is mixed with thin black bile, "javarsiyeh Namlah" is created (14). Table 4 illustrates these features in Tib-e-Akbari.

**Book 5- Hedayat Al-Motalemin fi Al-tib (15)**

The word "Namlah" and javarsiyeh is repeated 9 and 1 times respectively. "Namlah" has been called as a kind of "pulse" 4 times. The description of "Namlah" and javarsiyeh has been made in 4 sentences. The yellow bile humor causes

“Namlah” and yellow bile mixed with blood humor causes known “Cavers” (javarsiyeh) (15).

Table 5 lists the contents of namlah from Hedyat Al-motalemin.

**Table 4:** Acne in Tib-e-Akbari (14)

<i>Name</i>	<i>Types</i>	<i>Area</i>	<i>Clinical manifestation</i>	<i>Cause</i>	<i>Principles of treatment</i>
“Namlah”	Simple “Namlah” (sazej)	Skin	-Skin rashes with intense burning and itching sensation -Yellow discoloration of the skin	-Lack of complete food digestion in stomach and liver (incomplete first and second digestion stage) -Transitional crisis of acute diseases	Remove of yellow bile
	Moteakele “Namlah” (corrosive)	Skin and subcutaneous	Redness of lesion Fast wounding		Remove of yellow bile topical treatment
	Javarsiyeh	Skin	Small skin lesions similar to millet with a white head and a red base with burning, biting and excretion of yellow liquid		Bloodletting Remove of yellow and black bile
“Bosoor-Labanieh”		Nose and forehead	White spot like a milk drop and when they are pressured something like a frozen oil comes out		Oral herbal medicines

**Table 5:** Acne in the Hedyat Al-motalemin book

<i>Name</i>	<i>Types</i>	<i>Area</i>	<i>Clinical manifestation</i>	<i>Cause</i>	<i>Principles of treatment</i>
“Namlah” (Zomorah)		Superficial layer of the skin	The secretion of a warm, burning, and progressive water like liquid	Indigestion of the liver due to warm liver dystemperament	-
Cavers		Between the skin and subcutaneous	-		-

#### **Book 6: Sharh Al-asbab va Al-alamat (19)**

“Namlah” is mentioned 10 times as a kind of eye disease, and it is described in one section in 17 lines, and gavreux (javarsiyeh) and its treatment is described in 7 lines.

The thin yellow bile causes simple “Namlah”, and thick yellow bile mixed with abnormal blood humor causes “moteakeleh Namlah” (causing wound), and balanced yellow bile mixed with

phlegm humor causes gavreux (javarsiyeh) “Namlah”, and the gathering of pus and blood causes “Bosoor-Labanieh” (16). Table 6 illustrates this character from Sharh Al-asbab va Al-alamat.

#### **Book 7: Exir-e Azam (16)**

In Exir-e Azam, the word “Namlah”, gavreux (javarsiyeh), and “Bosoor-Labanieh” has been

repeated 61, 15 and 1 times respectively. In this book, there are many ideas of many scholars. Review of this book shows the notable differences in treatment protocol among various types of disease (16).

**Therapeutic Recommendations:** Changing lifestyle, drug therapy, and manual intervention are recommended.

**Table 6:** Acne in the Sharh Al-asbab va Al-alamat book (19)

Name	Types	Area	Clinical manifestation	Cause	Principles of Treatment
Progressive “Namlah”	Simple “Namlah”	Skin surface	Small superficial swelling lesion with inflammation and burning sensations		Remove of yellow bile Bloodletting if needed
	Moteakele “Namlah” (corrosive)	Subcutaneous tissue			
Gavreux (javarsiyeh)	Gavreux (javarsiyeh)	Skin pores	Scattered skin lesions similar to small blisters Its head is similar to white millet and its base is red with Intense burning and swelling,		-Bloodletting -Remove of Yellow bile and phlegm -Topical treatment
“Bosoor-Labanich”		Cheeks and nose	White colored skin lesions With pressure, a hard lipid substance comes out		Oral and topical herbal medicine

Optimization of six essential principles of health in TPM are explained as lifestyle modification. These principles are climate, nutrition, retention and evacuation, repose and movement, sleep and wakefulness and emotional status.

Based on TPM warm air increases the inflammation of the “Namlah” lesions. Nutritional status should be controlled by avoiding eating meat and sweets. Avoiding from gorge and eating different foods in a meal preventing the accumulation of the excretion of the body, such as urine, stool, and sweat, proper exercise improves the elimination of wastes. Deep sleep, avoid anxiety, stress, and depression can improve elimination of disease. Treatment includes two categories: oral and topical medications. Oral medicines include drugs such as Cassia Fistula, Tamarindus Indica, Terminalia Chebula, Whey Protein, Prunus Armeniaca, Manna of Hedysarum, Chicory eggs, Cichorium Intybus L, Epythymum Cuscuta and Solanum Nigrum. Topicals are Myrtus Communis, Lemna minor, Olea Europaea, Bitter Almonds (Prunus dulcis), Althaea Officinalis, Cydonia Oblonga, Apple (Malus Domestica), Raspberry (Rubus Casius or Blackberry) and Willow (Salix) (15).

## Discussion

Acne vulgaris (acne) is a chronic illness seen in 85% of adolescents who may continue to higher ages (17). Acne has been seen in various forms of seborrhea, open and closed comedones, papules, pustules and nodules, and may even cause scarring in the skin (18). Acne treatment depends on the severity of the disease. Topical, oral anti-inflammatory drugs and hormonal treatment, and in some cases, mechanical removal of skin lesions are the recognized intervention for acne (4). In Traditional Persian medicine, skin lesions that are apparently compatible with different stages of acne are as follows:

In TPM references “Namlah” is a skin disease that occurs more often at a young age. It may begin at about 15 and will continue for ages 35 to 40 (1). This condition has various forms with different degrees of skin involvement. If the thin and pure yellow bile is poured onto the skin, it produces a simple “Namlah”, which looks as cutaneous and progressive lesions with small inflammation not limited in one place and is ac-

accompanied with burning (19). This stage is similar to the popular acne stage. Another type that, in addition to the skin, involves the underlying layer and creates wounds in the skin and the flesh underneath is caused by sharper and thicker form of yellow bile. This type of skin lesions are accompanied by itching and heat sensation and are rapidly wounded (13). This stage is very similar to the nodular or cystic form of Acne. "Bosoor-Labanieh" is the other form of lesions that are white and are on the cheeks and nose. When they are pushed something like a rigid fat substance comes out (19). They are similar to white Comedones. One of the causes of acne in Traditional Persian Medicine texts is digestive disorders (12). In a study, there is a relation between gastrointestinal function disorder (constipation, bad breath, bloating and reflux) and sebaceous gland diseases (20). In traditional medical texts, there are 6 health care issues in lifestyle modification to improve acne. The 6 health care issues include climate, nutrition, retention and evacuation, repose and movement, sleep and wakefulness and emotional status. Among these issues, the role of nutrition and emotional status is important. The consumption of meat and confectionery should be reduced. In contemporary medicine texts this advice is common named "Western diet" (21).

In Traditional Persian Medicine texts, as in conventional medicine, psychological stress is referred to as acne exacerbating factor (22). A remarkable point in traditional medicine references is that it mentions that the consumption of herbs is effective in cleansing the body and improving acne, although as those times the anti-bacterial, antioxidant and regenerative effects of these edibles were not obvious. Example of this is the effects of Cassia Fistula and Tamarindus Indica in the protection of the internal organs and the maintenance of the activity of skin cells proved in conventional medicine. In both, the antioxidant effects are proved, and in addition, the Tamarindus Indica seed extract protects skin fibroblasts against stresses (23, 24). Anti-aging and regenerative effects of skin cells on chronic ulcers using Terminalia chebula in the field of skin is proven (25). However, in TIM, the oral intake of this

plant in the treatment of various skin rashes and Scarring from rash has been considered.

The effects of oral Manna of Hedysarum as anti-cystic and anti-inflammatory were also considered by Traditional Persian Medicine, and today, the articles refer to the antibacterial and antifungal effects of this plant (26). The effects of alcoholic extract of "Myrtus Communis" for the treatment of acne lesions has been proved. It has anti-inflammatory, antiproliferative, and antibacterial effects. It also has a concentration-dependent ant-lipase activity inhibitory effect, which is useful for acne treatment (27). Different parts of "Cydonia Oblonga" especially its seeds and fruits, have anti-bacterial and anti-inflammatory properties and its effects in the process of wound healing in rabbits have been proved (28, 29). The extract of the leaves of the "Alfalfa Althaea Officinalis", has antibacterial properties against gram-positive bacteria. It has anti-inflammatory activity too, so it can protect the wound against infection and accelerating wound healing (30). The Plantago Major has anti-fungal, antiviral and antibacterial activity. It is an anti-inflammatory substance and plays an important role in wound healing (31). Wet Cupping strengthens the immune system, it has an anti-inflammatory effect, and numerous studies have shown its positive effect in the treatment of acne (32, 33)

Based on the recommendations of traditional Persian medicine, the treatment of acne depends on its cause. They include oral and topical medicines and sometimes manual interventions like bloodletting and wet cupping. When skin lesions do not respond to these treatments, the surgical removal technique is prescribed (12).

## Conclusion

Various underlying diseases and risk factors have been concerned in Traditional Persian Medicine as predisposing factors for acne. Evaluation of the recommendations of Traditional Persian Medicine for control of these risk factors requires further studies. By applying advice of TIM, it may be pos-

sible to reduce the incidence of disease. Using herbal remedies, may reduce the duration and severity of the disease, and reduce scarring, which is one of the major side effects of acne. It can also minimize the side effects of chemical drugs.

## Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

## Acknowledgements

We appreciate the Skin and Stem Cell Research Center of Tehran University of Medical Sciences for the scientific support.

## Financial source

The authors have not used any financial support to compile this article.

## Conflict of interest

The authors declare that there is no conflict of interests.

## References

1. Layton AM, Henderson CA, Cunliffe WJ (1994). A clinical evaluation of acne scarring and its incidence. *Clin Exp Dermatol*, 19(4): 303-8.
2. Vos T, Flaxman AD, Naghavi M et al (2012). Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*, 380 (9859):2163-96.
3. Bhate K, Williams HC (2013). Epidemiology of acne vulgaris. *Br J Dermatol*, 168 (3):474-85.
4. Zaenglein AL, Pathy AL, Schlosser BJ, et al (2016). Guidelines of care for the management of acne vulgaris. *J Am Acad Dermatol*, 74(5): 945-73.e33.
5. Williams HC, Dellavalle RP, Garner S (2012). Acne vulgaris. *Lancet*, 379 (9813): 361-72.
6. Rafieian-Kopaei M (2012). Medicinal plants and the human needs. *J HerbMed Pharmacol*, 1(1): 1-2.
7. World Health Organization (2002). WHO traditional medicine strategy 2002-2005. In: Organization WH, editor. Geneva.
8. Eisenberg DM, Davis RB, Ettner SL et al (1998). Trends in alternative medicine use in the United States, 1990-1997. *JAMA*, 280(18):1569-75.
9. Magin PJ, Adams J, Heading GS et al (2006). Complementary and alternative medicine therapies in acne, psoriasis, and atopic eczema: results of a qualitative study of patients' experiences and perceptions. *J Altern Complement Med*, 12(5):451-7.
10. Shirbeigi L, Mansouri P (2016). A Review of Acne Etiology and Treatment in Iranian Traditional Medicine. *J Skin Stem Cell*, 3(1):e39133.
11. Jorjani SI (2011). *Zakhibreye Kharazmshahi*. Tehran: Institute of Natural Medicine's revival. Vol. 3.p. 30-40
12. Avicenna H (1997). *The Canon of Medicine*. Tehran: Tehran: Ministry of Health and Medical Education. vol 4. P.158-64.
13. Ahwazi A (380 AH). *Kamel al Senna al tabiea*. In: revival carbtonms, editor. 4. Tehran Jaleledin. vol 3.p.310-30
14. Arzani HMA (2008). *Teb e Akbari* 2. ghom -Iran institute of natural medicine's revival. Vol 2 pp. 1121-88.
15. Akhavaini R (1371). *Hedayat al motaallemin*. 1. Mashad: mashad univercity. p.165.
16. Hakim Azam Khan M (1387). *Exir e Azam* Institute of medicine's history Studies, Islamic and Complementary Medicine Tehran. vol 5 p.270-80.
17. Collier CN, Harper JC, Cafardi JA et al (2008). The prevalence of acne in adults 20 years and older. *J Am Acad Dermatol*, 58(1):56-9.
18. Knutsen-Larson S, Dawson AL, Dunnick CA, Dellavalle RP (2012). Acne vulgaris: pathogenesis, treatment, and needs assessment. *Dermatol Clin*, 30(1):99-106.
19. Kirmani Nia (2008). *SharhALasbab va alalamat*. In: revival carbtlONMs, editor. *SharhALasbab va al alamat*. 2. Tehran.
20. Zhang H, Liao W, Chao W et al (2008). Risk factors for sebaceous gland diseases and their re-



- relationship to gastrointestinal dysfunction in Han adolescents. *J Dermatol*, 35(9):555-61.
21. Melnik BC (2015). Linking diet to acne metabolism, inflammation, and comedogenesis: an update. *Clin Cosmet Invest Dermatol*, 8:371-88.
  22. Orion E, Wolf R (2014). Psychologic factors in the development of facial dermatoses. *Clin Dermatol*, 32(6):763-6.
  23. Rahmani AH (2015). Cassia fistula Linn: Potential candidate in the health management. *Pharmacognosy Res*, 7(3):217-224.
  24. Phetdee K1, Rakchai R1, Rattanamanee K et al (2014). Preventive effects of tamarind seed coat extract on UVA-induced alterations in human skin fibroblasts. *J Cosmet Sci*, 65(1):11-24.
  25. Yakaew S1, Itsarasook K2, Ngoenkam J et al (2016). Ethanol extract of Terminalia chebula fruit protects against UVB-induced skin damage. *Pharm Boil*, 54(11):2701-7.
  26. Lee HH1, Ahn JH, Kwon AR et al (2014). Chemical composition and antimicrobial activity of the essential oil of apricot seed. *Phytother Res*, 28(12):1867-72.
  27. Fiorini C, Aries MF (2008). A multifactorial anti-acne extract for a multifactorial pathogenesis. *Planta Med*, 74(9):910-1.
  28. Al-Snafi AE (2016). The medical importance of Cydonia oblonga-A review. *IOSR J Pharm*, 6(6):87-99.
  29. Hemmati AA, Haghghi Zadeh H (2012). Healing effect of quince seed mucilage on T-2 toxin-induced dermal toxicity in rabbit. *Exp Toxicol Pathol*, 64(3):181-6.
  30. Rezaei M1, Dadgar Z1, Noori-Zadeh A et al (2015). Evaluation of the antibacterial activity of the Althaea officinalis L. leaf extract and its wound healing potency in the rat model of excision wound creation. *Avicenna J Phytomed*, 5(2):105-12.
  31. Samuelsen AB (2000). The traditional uses, chemical constituents and biological activities of Plantago major L. A review. *J Ethnopharmacol*, 71(1-2):1-21.
  32. Fatin F. Al-kazazz, Sura A. Abdulsattar, Kutayba Mohammed (2014). Study effect of wet cupping on hemato-logical parameters and inflammatory proteins of healthy Iraqi men. *Am J Phytomed Clin Ther*, 2(5): 644- 649.
  33. Du YZ, Jia CS, Wang JL et al (2015). [Analysis of Therapeutic Regularities and Characteristics of Blood-letting Therapy for Acne Patients Based on Data Mining]. *Zhen Ci Yan Jiu*, 40 (3):251-7.