



Review Article

ANALYTICAL STUDY OF SKIN IN AYURVEDA

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KEYWORDS: *Twacha, Chhaya, Prabha, Twaksara, Prakriti, Vikriti.*

ABSTRACT

The human skin is the outermost covering of the body and largest organ of the integumentary system. Diseases of the skin though not fatal but it scars the confidence of the individual. Therefore there is rise in incidence of dermatological cases in general practise. But to treat a disease it is of utmost importance to have proper knowledge of the affected organ. The present review article encompasses the concept of skin i.e., *Twacha* in Ayurveda including its *Nirukti* (etymology), *Sharirrachana* (anatomy), *Sharirkriya* (physiology), *Vikriti* (pathology) described by different Acharyas with modern insights on relevant topics. Apart from this unique concept of Ayurveda regarding *Varna, Chhaya* and *Prabha* and *Twaksara* are also mentioned. Hence one of the important karma of *Twak* is to act as a strong physical barrier against microbial invasion and protect the body against mechanical, thermal, chemical, osmotic and photo damage.

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INTRODUCTION

Skin is the largest organ of the integumentary system. In recent years skin diseases have gained more importance and attention by medical science as well as public. It is a general impression that 10-20% of patients seeking medical advice suffer from skin diseases. Diseases of the skin account for a great deal of misery, suffering, incapacity and economic loss. Therefore it is necessary first to have understanding of the basic structure, normal physiology of the skin in order to prevent its disease.

Skin is the largest organ of the integumentary system. It covers an area of 1.8square metres and serves as a protective barrier that prevent internal tissues from exposure, to trauma, ultraviolet radiation, temperature extreme, toxin etc.^[1]

In Ayurveda, the skin is called as *Twacha, Twak* Or *Charma*. Ayurveda bestows unique concept of *Twacha* which are discussed below.

Nirukti (Etymology) Of *Twacha*

In Ayurveda the word "*Twacha*" or "*Charma*" is used for skin^[2] – (Ch. Sha. 7/16). *Twacha* is derived from "*Twach-Samvarne*" *dhatu* meaning the covering of the body.

Formation or embryogenesis of *Twacha* (skin) in Ayurveda

According to Charaka ^[3]

After the conjugation of *Shukra, Shonita* and *Jeeva* in the *Garbhasaya*, the *Garbha* comes into existence. In the 3rd month all *Indriyas* are formed and

skin being an *Indriya* takes its form in the 3rd month itself.

According to Sushruta^[4]

The development of *Twacha* follows after the fertilization of *Shukra* and *Shonita*. The development of *Twacha* is caused by *Tridosha* particularly *Pitta*. The formation and further development of *Twacha* is similar to the formation of *Santanika* (cream) when milk is boiled. Just as the *Santanika* forms layers and gradually increase in thickness; similarly all layers are formed in the developmental stages of the embryo and join together to become the skin on the outer surface of fully developed child.

According to Vagbhata^[5]

Twacha is formed due to *Paaka* of *Rakta dhatu* by its *Dhatwagni* in the foetus, after *Paka*, it dries up to form *Twacha*, just like the deposition of cream (*Santanika*) over the surface of boiled milk.

Sharira Rachana of *Twacha*

Acharya Charaka has said that *Twacha* is *Upadhatu* of *Mamsa dhatu*.^[6] and seat of *Sparshendriya*^[7] Since *Twacha* covers the whole body it protects the body from various physical and chemical stimuli present in the environment.

Acharya Charaka says that all organs are the modification of *Panchmahabhoota*^[8]. So the *Rachana* and *Kriya* of the organs have been organised according to *Paanchbhautika* constitution.

Following is the tabular representation of *Paanchabhautikatwa* of *Twacha*:

Table 1: Panchabhautikatva of Tvacha

| <i>Mahabhuta</i> | Analysis |
|-------------------|---|
| 1) Prithvi | <i>Tvacha</i> has been considered as the <i>Upadhatu</i> of <i>Mamsa Dhatu</i> that shows it is stable which is an innate quality of <i>Prithvi</i> |
| 2) Jala | Due to the presence of <i>Jala Mahabhuta</i> , <i>Tvacha</i> is <i>Snigdha</i> |
| 3) Agni | <i>Tvacha</i> has the specific <i>Varna</i> and <i>Prabha</i> (lustre) |
| 4) Vayu | <i>Tvacha</i> is the <i>Adhithana</i> of <i>Sparshanendirya</i> |
| 5) Akasha | Presence of some micro channels of <i>Sweda</i> forming organs |

Layers of *Twacha* according to different Acharyas

- Charaka described six layers of *Twacha*^[9]. But he named only two, the rest four layers have been described in terms of disease. But he also mentioned as two major layers of *Twaka*.^[10]
- Sushruta has described seven layers of skin along with the specific name. He also mentioned the thickness of each layer along with disease involved.^[11]
- Sarangadhar also mentioned seven layers of skin.^[12]
- Acharya Gangadhara has clarified the difference between Charaka and Sushruta that the third layer of Charaka is of two layers –superficial and deep, which are supposed 3rd and 4th layer consequently.
- Vagbhatta also classified the *Twaka* as seven in Ashtanga Hridaya.^[13]

Table 2: Layers of *Twacha* according to different Acharyas

| Layer | Charaka | Sushruta | Vagbhatta | Sharangadhar | Bhela ^[14] |
|-------|-------------------|-------------------|-------------------|-------------------|-----------------------|
| 1. | <i>Udakadhara</i> | <i>Avabhasini</i> | <i>Bhasini</i> | <i>Avabhasini</i> | <i>Udakadhara</i> |
| 2. | <i>Asrigdhara</i> | <i>Lohita</i> | <i>Lohita</i> | <i>Lohita</i> | <i>Asrikdhara</i> |
| 3. | 3 rd | <i>Sweta</i> | <i>Sweta</i> | <i>Sweta</i> | 3 rd |
| 4. | 4 th | <i>Tamra</i> | <i>Tamra</i> | <i>Tamra</i> | 4 th |
| 5. | 5 th | <i>Vedini</i> | <i>Vedini</i> | <i>Vedini</i> | 5 th |
| 6. | 6 th | <i>Rohini</i> | <i>Rohini</i> | <i>Rohini</i> | 6 th |
| 7. | - | <i>Mamsadhara</i> | <i>Mamsadhara</i> | <i>Mamsadhara</i> | <i>Sthula</i> |

Table 3: Probable correlation of layers of *Twacha* and layers of skin

| Layers of skin according to Sushruta | Thickness (<i>Vrihi</i> /rice) | Modern layers of skin | Thickness (in mm) | |
|--------------------------------------|---------------------------------|-----------------------|-------------------|-----------|
| 1. <i>Avabhasini</i> | 1/18 | Stratum corneum | 0.05-0.06 | Epidermis |
| 2. <i>Lohita</i> | 1/16 | Stratum lucidum | 0.06-0.07 | |
| 3. <i>Shweta</i> | 1/12 | Stratum granulosum | 0.08-0.09 | |
| 4. <i>Tamra</i> | 1/8 | Malpighian layer | 0.12-0.15 | |
| 5. <i>Vedini</i> | 1/5 | Papillary layer | 0.20-0.50 | Dermis |
| 6. <i>Rohini</i> | 1 | Reticular layer | 1-1.1 | |
| 7. <i>Mamsadhara</i> | 2 | Sub cutaneous tissue | 2-2.1 | |

Table 4 : Pathology in different layers of *Twacha*^[15]

| Sl.No. | Layers of skin according to Sushruta | Thickness (of <i>Vrihi</i> /rice) | Pathology (disease) |
|--------|--------------------------------------|-----------------------------------|--|
| 1. | <i>Avabhasini</i> | 1/18 | <i>Sidhma</i> , <i>Padmakantaka</i> |
| 2. | <i>Lohita</i> | 1/16 | <i>Tilkalak</i> , <i>Nyaccha</i> , <i>Vyanga</i> |
| 3. | <i>Shweta</i> | 1/12 | <i>Charmadala</i> , <i>Ajagallika</i> , <i>Mashaka</i> |
| 4. | <i>Tamra</i> | 1/8 | <i>Kilasa</i> , <i>Kushtha</i> |
| 5. | <i>Vedini</i> | 1/5 | <i>Kushtha</i> , <i>Visarpa</i> |

| | | | |
|----|------------|---|--|
| 6. | Rohini | 1 | Granthi, Apachi, Arbuda, Slipad, Galaganda |
| 7. | Mamsadhara | 2 | Bhagandara, Vidradhi, Arsha |

Kriya Sharir or Physiological Concept of Twacha`

Ayurveda defines *Sharira* as *Shiryate iti shareeram* means one which constantly undergoes wear and tear which also applies to skin. Shabdakalpadrum says “*Twachatisamvrutimedoshonitakaamiti*” i.e., *Twak* covers the underlying *Rakta, Mamsa, Medadhatus*.^[16]

Hence one of the important *Karma* of *Twak* is to act as a strong physical barrier against microbial invasion and protect the body against mechanical, thermal, chemical, osmotic and photo damage.

Since *Twacha* is *Upadhatu* of *Mamsadhatus* its role is to do *Dhaaran*.

The *Bhrajak pitta* which is also termed as *Bhrajakagni*, situated in the *Twaka* assimilates the medication which are applied over the skin in the form of *Abhyanga, Parishek, Avagah, Alepana* etc.^[17]

Vitiation of *Bhrajak pitta* leads to abnormal complexion depicted as *Chhaya* and *Prabha*^[18]

Avabhasini layer of *Twacha* is responsible for *Varna* and *Chhaya* of the body.^[19]

Udakadhara layer holds up water, and *Romakoopa* facilitates evaporation of *Sweda*. Hence *Twacha* maintains the temperature regulation and electrolytic balance and also hydration the skin.

Sparshendriya being located in *Twacha* makes *Twacha* responsible for tactile sensation of hot, cold, touch etc

Table 6: Paanchbhautiksambandha of Chhaya^[23]

| Sl no | Type | Lakshana |
|-------|----------|---|
| 1 | Nabhasi | Nirmala, Neela Varna, Sneha Yukta, Saprabha |
| 2 | Vayavi | Ruksha, Shyava Varna, Hataprabha |
| 3 | Agneya | Visydharakta, Deeptabha, Darshanapriya |
| 4 | Apya | Shuddha, Vaidurya, Vimala, Susnigdha |
| 5 | Parthiva | Sthira, Snigdha, Ghana, Shyama |

Concept of immunology or Twakasara

Sara is important for assessment of *Bala* and *Ayu* of the patient. *Bala* refers to the power of resistance to diseases which can be correlated with immunity of the individual. It can be recognised that the person of particular *Sara* will have more resistance against diseases produced by the particular *Dhatu*.

Twaka Sara Purusha Lakshana^[24]

Physical characteristics

1. Have unctuous, smooth, soft, clear, fine, less numerous, deep-rooted and tender hair along with lustrous skin.
2. Skin and hairs are good looking and soft

Table 5: Prakritavarna of Twacha according to Charaka^[20]

| Sl. no. | Prakritavarna | Colour/ complexion |
|---------|----------------|----------------------|
| 1 | Krishna | Black |
| 2 | Shyama | Dark |
| 3 | Shyama-avadata | Mix of dark and pale |
| 4 | Avadata/ gaura | White or pale |

Acharya Charak has stated that the person with *Atikrishna* or *Atigauravarna* belong to the group of *Ninditapurusha* (undesirable)^[21]

Chhaya and *Prabha* are the factors which are having close relation to the colour of the skin and an example about rich scientific knowledge of our Acharyas regarding the subject. *Chhaya* makes *Varna* while *Prabha* improves the brightness of the *Varna*. *Chhaya* can be appreciated from close vision while *Prabha* is visible from a distance. *Tejamahabhoota* is the basic of all types of *Prabha*. *Prabha* is classified into seven viz; ^[22] *Rakta, Peeta, Sita, Shyava, Harita, Pandu, Asita*. *Varna* remains same from birth to death whereas *Chhaya* may alter (*Asana rityulakshana*) while *Prabha* changes according to the temporary state of health.

3. Clear and sharp features in relation to lustre and complexion.

Physio - psychological characteristics

1. Endowed with happiness, good fortune, power, enjoyment, intellect, knowledge, health, excitement and longevity.
2. Pleasure seeking
3. Free from skin disease
4. Wounds heal quickly

Dosha Siddhanta

Ayurveda gives a unique concept of Physiology and Pathology depending on the *Prakriti* of the individual. They are listed below in tabular form.

Table 7: Prakriti and Vikriti of Twacha according to Dosha [25]

| Dosha | Prakriti | Vikriti |
|--------------|---|--|
| Vata | Thin, fine pores, darker complexion with whitish or greenish blue, cool to touch, especially in extremities and dry, rough, flaky in patches an sensitive to climatic changes | Lack of tone or lustre, rough patches, chapping and cracking, dry rashes, corns and callouses, dry eczema |
| Pitta | Fair peachy coppery or freckled complexion, soft lusturous and warm, chemically sensitive moist | rashes, inflammation, itching, premature Wrinkling, yellow pustular acne, blackheads, whiteheads, general excessive oiliness, discoloration of natural pigment |
| Kapha | Thick, moist, pale, soft and cool in touch, generally tones well and light | Dull, sluggish, congested skin, enlarged pores, blackheads or large white pustular cyst formation. thick oily secretion |

CONCLUSION

Skin diseases usually take a longer time to be specifically diagnosed and cured. The *Paanchbhautikarachna* of the *Twacha* gives scope of considering the predominance of *Dosha* and *Anubandha* status of *Dosha* in considering the *Chikitsasiddhanta*. The concept of *Varna* and *Twacha* which is inherent due to *Prakriti* of the individual should be analysed while dealing with disorders of the skin. The physiological concept of skin, the role of *Dosha*, *Dhatu*, *mala* in *Twacha* guides us towards diet and regimen to be followed for healthy skin. After all healthy skin is the mirror of healthy body.

From the above study it can be concluded that Ayurvedic concept of Skin or *Twacha* is unique, deep and vast like an ocean which needs to be explored, analysed for better understanding as the references are in so much subtle details. I hope the information gained from the review will stimulate new ideas for further researches.

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Cite this article as:

Roy Neha, Chakraborty Kumar Swapan. Analytical Study of Skin In Ayurveda. AYUSHDHARA, 2016;4(2):1139-1143.

Source of support: Nil, Conflict of interest: None Declared

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