

ANATOMICAL AND PHYSIOLOGICAL CONSIDERATIONS OF SKIN WITH RESPECT  
TO DISEASESDr. Kavita Khond\*<sup>1</sup> and Dr. Vandana Hirudkar<sup>2</sup><sup>1</sup>HOD Professor, *Rachana Sharir*, Shree KR Pandav Ayurved College, Nagpur, India.<sup>2</sup>Asso. Professor, HOD, *Rasashastra*, Shree KR Pandav Ayurved College, Nagpur, India.

\*Corresponding Author: Dr. Kavita Khond

HOD Professor, *Rachana Sharir*, Shree KR Pandav Ayurved College, Nagpur, India.

Article Received on 13/10/2019

Article Revised on 03/11/2019

Article Accepted on 24/11/2019

## ABSTRACT

Ayurveda described various anatomical aspects related to the human anatomy and different texts of ayurveda presented all anatomical aspects of skin. Ayurveda considered *Twak* (skin) as *Matruja Avyaya* that is derived from maternal origin. The knowledge of *Sharirrachana* and *Sharirkriya* of skin is very essential to understand pathogenesis of skin diseases. The various skin diseases arises from different layers of skin therefore it is very important to understand physiological functioning of various skin parts. *Avabhasini*, *Lohita*, *Shweta*, *Tamra*, *Vedini*, *Rohini* and *Mamsadhara* are anatomical layers of skin that perform specific functions and manifested in particular types of skin diseases. The diseases of skin mainly occur due to the vitiation of *Tridoshas* i.e. *Vata*, *Pitta* and *Kapha*. Considering these all aspects present article summarizes anatomical consideration of skin and its relation with skin disorders.

KEYWORDS: *Ayurveda*, *Skin*, *Anatomy*, *Diseases*.

## INTRODUCTION

The skin is considered as one of the important tissue of body that not only performs functioning of protection but also responsible for appearance of person. The outermost layer of skin called epidermis that acts as waterproof barrier and maintain normal tone of skin. The next dermis layer consists of connective tissues, hair follicles and sweat glands. The inner hypodermis or subcutaneous layer made by fat and connective tissues. As per ayurveda skin is composed of seven different layers named; *Avabhasini*, *Lohita*, *Shweta*, *Tamra*, *Vedini*, *Rohini* and *Mamsadhara*, these layers possesses specific structures and functions thus involve in distinguish disease pathogenesis.<sup>[1-5]</sup>

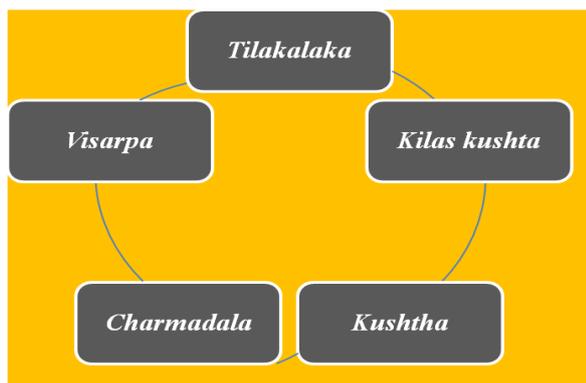


Figure 1: Common skin diseases.

Anatomical perspective of Skin (*Twak Sharir*)

*Twacha* formed when development of *Garbha* occurs, *Shukra* & *Shonita* metabolites along with *Tridosha* contributed towards the formation of *Twacha*. Skin cover external body surface and at the orifices of body it formed mucous membrane. The palms and sole feet skin considered as thickest one (1.5 mm thick). Eyelids skin is noted as thinnest one only 0.05 mm hence considered as sensitive part. The major pigments of skin are; melanin, carotene, melanoid and haemoglobin which imparts specific colour of skin and discoloration occurs when these pigment gets affected.<sup>[4-7]</sup>

*Avabhasini* is the outermost layer that contributes towards the complexion of body; it indicates youthfulness, luster and inner health of person. Pimples and acne occurs on the body when *Avabhasini* gets affected.

*Lohita* is second layer that supports outermost layer and resembles quality of *Rakhta Dhatu*. Moles, dark circles and pigmentation may occur as defect in *Lohita*.

*Shweta* is third and white layer of skin that balances and lightens the colour of skin. Diseases like eczema and allergic rashes etc. may occur when this layer get hampered.

**Tamra** is forth layer that nurtures other layers and boosts immune system, any adversity to this layer may cause skin infections.

**Vedini** is the fifth skin layer which considered responsible for sensations and feelings. This layer mainly connects skin to the other body parts. Infection to this part may cause disease like Herpes.

**Rohini** mainly considered responsible for healing and regeneration process, any imbalance to this layer affects natural healing process and skin tumors may observed sometimes.

**Mamsadhara** is the innermost layer of skin that provides stability and firmness. Abscesses or fistulas may occur if this layer gets affected.

*Vata* skin, *Pitta* skin and *Kapha* skin, etc. are occurs as predominance of specific *Dosha*. These *Dosha*

predominant skins possess specific characteristics as follows:

- **Vata skin:** Dry, thin and pored skin which gets dehydrated easily; this type of skin is considered very susceptible to dry weather conditions.
- **Pitta skin:** Soft, fair and warm skin, prone to freckles and photosensitive.
- **Kapha skin:** Thick, soft, oily and prone to toxin accumulation.
- **Vata-Pitta** predominance skin is dry and sensitive in nature.
- **Kapha-Pitta** predominance skin is oily in nature.
- **Vata-Kapha** skin is dry in nature with oily patches.

#### Dosha and skin manifestation

*Twacha* is considered as site of *Vata* & *Pitta* therefore *Tridoshic* imbalances may causes various skin manifestations depicted in **Table 1:**

| S. No. | Dosha vitiation/imbances             | Lakshana                                     |
|--------|--------------------------------------|--|
| 1      | <i>Vata</i> and <i>Pitta</i> Vriddhi | ❖ Hyper pigmentation<br>❖ Skin discoloration |
| 2      | <i>Pitta</i> Kshaya                  | ❖ Loss of glory<br>❖ Skin coldness           |
| 3      | <i>Kapha</i> Vriddhi                 | ❖ Whitish appearance<br>❖ Skin coldness      |
| 4      | <i>Kapha</i> Kshaya                  | ❖ Skin dryness<br>❖ Burning sensation        |

#### Skin layers and associated diseases as per Charaka

- The *Udakdhara* mainly associated with diseases such as; dehydration and wrinkles.
- *Asrukdhara* that holds blood and related to the disease such as; *Tilakalaka*, *Nyacha* and *Vyanga*, etc.
- As per *Charaka* the seat of *Sidhma* (dermatitis) considered responsible for diseases like; *Sidhma* and *Kilas kushta*.
- The seat of *Dadru* is responsible for *Kushtha*.
- Another skin layer considered as seat of *Alaji* and *Vidradhi* diseases.
- Skin layer appearing at deep rooted joints associated with pain during injury.

#### Skin layers and associated diseases as per Sushruta

- *Sushruta* mentioned that first skin layer *Avabhasini* related with diseases such as; *Padmakantak*.
- Second layer of skin *Lohita* mainly associated with diseases like; *Tilakalaka* and *Nyacha*.
- As per *Sushruta* third skin layer *Shweta* involve in diseases such as; *Charmadala*, *Ajagallika* and *Mashaka*.
- Fourth skin layer *Tamra* involve in diseases like; *Kushtha* and *Visarpa*.
- Fifth layer of skin *Vedini* involve in *Kushtha* and *Kilasa*.

- *Sushruta* mentioned that skin layer *Rohini* involve in diseases such as; *Granthi*, *Apachi*, *Arbuda*, and *Galaganda*.
- The final layer of skin *Mansadhara* involve in diseases such as; *Bhagandar*, *Vidradhi* and *Arsha roga*.

#### Modern view

The epidermis outermost layers of skin having thickness around 0.1 to 0.6 mm and mainly composed by keratinocytes. Stratum corneum is outermost skin layer while dermis is inner skin layer found between epidermis and layer of fat muscle, thickness is around 0.3 to 0.4 mm. Modern science also described some skin diseases such as; skin erythema, wrinkling (due to the loss of vessels in dermis), wound and dryness of skin, etc. When skin becomes dry then extracellular water content migrate towards the outer side. When strength of stratum corneum declined then protective ability of skin may get lost.<sup>[7-10]</sup>

#### CONCLUSION

Skin is vital part of human body that performs specific function like; protection and thermostat. The skin diseases put somatic as well as psychological burden therefore effective therapeutic management of skin disease is very important. Healthy skin is required as one needed other organs work effectively. The skin structures

plays key role towards the pathogenesis of skin diseases therefore anatomical and physiological awareness about skin are very important to understand progression of skin diseases. The macro and microscopic knowledge of skin anatomy need to explore up to great extent to combat against various skin diseases.

## REFERENCES

1. Dwivedi G, Dwivedi S. Susruta – the ClinicianTeacher par Excellence. Indian J Chest Dis Allied Sci, 2007; 49: 234-44.
2. Sharma PV. Caraka Samhita. India, Chaukhambha Orientalia, 2011. 6. Ojha D, Verma RK. Skin Diseases in Ayurveda. India, Chaukhambha Sanskrit Bhawan, 2005.
3. Patil AB. Twacha shareer with special reference to its thickness - a mathematical application to correlate ancient & Modern view. Int J Ayu Alt Med, 2014; 2: 41-7.
4. Parishadya shabadarth. shariram by Pt.Damodar Sharma Goud published by Baidyanath Ayurved bhavan limited Nagpur; second edition, 1979; 165-167.
5. Ghanekar S. commentary on Sushruth Samhita Sharirsthana “*Ayurved Rahasya Deepika*” by Dr. Bhaskar Govind Ghanekar, published by Meherchand prakashan Delhi reprinted edition, Sushruth.Sharirsthana ch, 2007; 5(2): 146.
6. Singh S, Tripathi JS, Rai NP. A Review of Pharmacodynamic Properties of Nishadi Vati'- A Herbomineral Ayurvedic Formulation. IJPRS, 2014; 3(2): 849-868.
7. Sharma AR (Ed.). *Susruta Sushrutsamhita, Part 1, Sutra Sthana, Chapter 21, Verse 20*. Varanasi: Chaukhambha Surbharti Prakashan, 2017.
8. Brahmanand Tripathi. Charak Samhita (Hindi translation) Vol. 1, Varanasi: Chaukhamba Subharti Prakashan, 2006; p.919.
9. Anil Baran Singha Mahapatra. Essentials of Medical physiology. Second edition. Kolkata, Mumbai. Current Books International, 2006; p.299.
10. C. Guyton and Hall. Medical physiology, 10th edition, Saunder- An imprint of Elsevier, 2003; p.880.