



ANTIQUITY OF PAEDIATRIC SKIN DISEASES – AYURVEDA REVIEW

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ABSTRACT

Background: Skin is the largest organ of human body comprising and covering the whole body organs. Ayurveda defines skin and its disorder under *Twacha*, *Twak Vikara* and *Kushtha*. Kashyapa Samhita an ancient text of Ayurveda paediatrics defines different childhood skin disorders and its management. There are large differences among the Ayurveda practitioners regarding skin disorders and its correlation, hence in present article the reasoning for difference and all possible correlations of childhood skin diseases has been discussed. **Material and Methods:** To discuss the childhood and neonatal skin disorders and its Ayurveda diagnosis approach in today's scientific time. **Data Source:** All Ayurveda classical texts, reference book, journals, websites, e-resources on dermatology, anatomy and literature on skin. **Review Methods:** Data on the *Kushtha*, and *Skin diseases* has been reviewed from all possible Ayurveda Texts, also the different research articles on skin and dermatology from all scientific indexed journal research papers, and other authenticated data bases has been reviewed, analysed, discussed and concluded. **Conclusion:** Ayurveda methodology for diagnosis of *Kushtha* is very scientific and time tested and is useful to find the diagnosis of even newer skin lesions of childhood and newborn, with rationale and scientific approach

Keywords: Ayurveda, *Kushtha*, *Pediatric Skin diseases*, *Twacha Vikara*

INTRODUCTION:

Skin is said to be largest anatomical organ covering an average of 20 square feet area of human body, functioning to protect the body organs, muscles and bone from external environment, apart from this temperature regulation and immunity are other major functions of skin. Anatomically, an average square inch of

skin contains 650 sweat glands, 20 blood vessels, and more than 1,000 nerve endings, shows the important sensory functioning of skin. The skin has three basic layers — the epidermis, the dermis, and the hypodermis.

Table 1: Anatomical Layers of Skin¹

	Epidermis	Dermis
Parts	Epidermis is the thin outer layer of the skin. It consists of 3 types of cells: Squamous cells: The outermost layer is continuously shed is called the stratum corneum. Basal cells: Basal cells are found just under the squamous cells, at the base of the epidermis. Melanocytes: Melanocytes are also found at the base of the epidermis and make melanin. This gives the skin its colour.	The dermis is the middle layer of the skin. The dermis contains the following: Blood vessels Lymph vessels Hair follicles Sweat glands Collagen bundles Fibroblasts Nerves Sebaceous glands
Thickness	Varies thickness	1-4mm thicker than epidermis
Layers	5 layers <ul style="list-style-type: none"> • stratum basale • stratum spinosum • stratum granulosum • stratum lucidum • stratum corneum² 	2 main zones, papillary dermis and reticular dermis
Functions ³	Provides the first barrier of protection from the invasion of substances into the body.	The dermis is a tough but elastic support structure that houses nerves, blood vessels, lymphatics, and cutaneous appendages.

The subcutaneous fat is an important layer and plays a role in shock absorption, energy storage, and maintenance of body heat.

Neonate is the special area of pediatric where some physiological immaturity of organs and variation of diseases occurred.

NEONATAL SKIN IN COMPARISON WITH ADULT SKIN

- Thinner, less hairy, weaker intercellular attachment
- Fewer eccrine and sebaceous gland secretions

- Increased susceptibility to external irritants
- Increased susceptibility to micrococcus infection
- Depressed contact allergen reactivity

SKIN IN AYRVEDA

Skin is called as *Twacha* in Ayurveda and is said to be developed from the *Rakta Dhatu* as layer; likewise the formation of cream over the boiled milk. Skin is made up of 7 layers and each layer is the site for development of different skin

diseases. As per Ayurveda faulty diet, life style and poor skin care practices (including skin hygiene) are the major etiological factors responsible for skin diseases. Apart from above said factors genetic influence is also much important factors for skin diseases.

Some observations from Ayurveda classics throwing light on skin diseases-

- Skin diseases occurred even in infants who may not having faulty diet or life habits.

- Many skin diseases shows the signs and symptoms of the vitiation of *Rakta Dhatu*
- Symptoms of many skin diseases are found subsiding with drugs which help to treat the *Rakta Dhatu Vikara*.

Panchamahabhoota are the fundamental units of all *Dhatu* and *Rakta Dhatu* and skin is also made up of *Panchamahabhoota*.

Table 2: *Panchamahabhoota* constitution of skin

<i>Mahabhoota</i>	<i>Karma in Rakta Dhatu</i>	<i>Karma in Skin</i>
<i>Prithvi</i>	<i>Gandha</i>	Sebaceous fluid and smell to skin
<i>Jala</i>	<i>Drava</i>	Moisture and sweat in skin
<i>Teja</i>	<i>Ranjana</i>	Complexion
<i>Vayu</i>	<i>Gati</i>	Perception of pressure, touch, temperature
<i>Akasha</i>	<i>Laghu</i>	Pores in skin

Layers of skin

Fundamental structure of skin is made of seven layers as per Ayurveda and is the site

for different normal functions of skin and site for different skin ailments too.

Table 3: Skin Layers as Per Ayurveda and its modern correlation

Ayurveda	Size in vrihi (Rice grain)	Modern Medicine	Diseases of specific layers
<i>Avabhasini</i>	1/18 th part of vrihi	Stratum Corneum Of The Epidermis	Sidhma, padmakantaka
<i>Lohita</i>	1/16 th part of vrihi		Tilakalaka, nyaccha, vyanga
<i>Shweta</i>	1/12 th part of vrihi	Stratum Lucidum Of The Epidermis	Charmadala, ajagallika, masaka
<i>Tamra</i>	1/8 th part of vrihi	Stratum Granulosum Of The Epidermis	Kilasasa, kushta
<i>Vedini</i>	1/5 th part of vrihi	Papillary Layer Of The Dermis	Kushta, visarpa
<i>Rohini</i>	Vrihi	Reticular Layer Of the Dermis	Granthi, apaci, arbuda, slipada, galaganda
<i>Mamsadhara</i>	Vrihidvaya	Hypodermis	Bhagandhara, vidradi, arsas

Morphology of Lesion as per modern dermatology:

- PRIMARY SKIN LESIONS: Initial pathologic change

- SECONDARY SKIN LESIONS: Modification of a primary lesion that results from evolution of the primary lesion, traumatic injury, or other external factors.

Table No.4: Morphology of skin lesion and its Ayurveda Correlation

Lesion	Description	Diseases in which occur	Nearer Ayurveda Correlation
Macule	Flat lesion with discoloration Usually <10mm in diameter	Measles, vitiligo, rubella	Mandal Tilkalak Neelika
Pustules	Vesicles that contain pus	Bacterial infection and folliculitis, pustular psoriasis	Indravruddha, charmadala, visphota, andhalji, vivruta
Papules	Elevated lesions <10mm in diameter	Warts, lichenplanus, insect bites, skin cancers	Dadru, paama, yuvanpidaka, Ajagallika, rajjika, sarsapiksa
Plaques	Palpable lesions >10mm Elevated or depressed compared to the skin surface	Lesion of psoriasis, granuloma annulare	Ekakushta, rakasa, armsika
Nodules	Firm papules or lesions that extend into the dermis or subcutaneous tissue	Cyst, lipomas and fibromas	Mashaka, neelika, yuvprakya, Udumbara kushtsa, sarkararbud
Vesicles	Small clear fluid filled blisters <10mm in diameter	Herpes infection, acute allergic contact dermatitis	Visphota, masurika, Ahiputana
Bullae	Clear fluid filled blisters > 10mm in diameter	Burns, bites, irritant contact dermatitis or allergic contact dermatitis	Vipadika, vivruta
patch	Large macule, size >1cm		Sidhma, kilasa, nyaccha
wheal	Erythematous, edematous, itchy lesion		Seetapitta, udarda, kotha,
scales	Shedding of stratum corneum (uppermost layer of skin)from silver, dry		Ekakushta, raksa
cyst	Nodule with fluid		Vaalmika, panasika, kacchapika
erosion	Partial loss of epidermis		Tvakpaka (shukadosa)
ulcer	Loss of epidermis and partial loss of dermis		Shataru, indravruddha

COMMON SKIN DISEASES IN PEDIATRICS

As with any other organ of the body, the skin is susceptible to certain diseases.

These include:

1. **Atopic dermatitis** (eczema): It is an inflammatory skin disease with dry, red, itchy patches of skin.
2. **Acne**: due to hair follicles become clogged with dead skin cells and oil.
3. **Melanoma**: A type of skin cancer caused by exposure to excess sunlight.
4. **Rosacea**: A common rash found in middle-aged people, with flush and has small red bumps on the face.
5. **Psoriasis**: This is an auto-inflammatory skin disease. It causes red, flaky patches to appear on the skin.
6. **Scabies**: An itchy skin condition caused by the human scabies mite.
7. **Shingles**: Also called herpes zoster, it is a painful, blistering rash caused by a virus.
8. **Lichen planus**: An itchy non-infectious rash. The bumps have flat shiny tops.

Skin Diseases in Ayurved -

Table 5: Major Skin diseases as per different Ayurveda Acharya and its modern correlation

Kushta	Charaka	Sushruta	Vagbhata	Kashyapa	Modern Interpretation
Kapala	Vata predominant Patches in skin looks like black & redish piece of kapala(broken pieces of clay pot), associated with excessive pain, difficult to cure ⁴	Pitta predominant Patches are like pieces of black mud pot ⁵	Vata predominant Skin patches are blackish red Dry, uneven edge, severe pain, less itching, spreading quickly ⁶	Black, rough, rugged dirty patches located in so many body parts round in shape with itching, troubling too much in change of season, skull shaped patches ⁷	Scleroderma
Udumbara	Pitta predominant Burning sensation, itching, pain & redness all around, hair on patches become brown in color, looks like fruit of Ficus plant ⁸	Pitta predominant Shape & color similar of ripe fruit of Ficus plant ⁹	Pitta predominant Ripe fruit of Ficus plant, white colored veins, exuding large quantity of moisture & blood, severe burning sensation & pain Putrefaction and appearance of worms are seen ¹⁰	Resembling ripe fruit of Ficus plant. Without discharge, multiple in number ¹¹	Boil/furuncles
Mandala	Kapha predominant White & red in color Stable, compact, unctuous and circular in shape with elevated patches difficult to cure ¹²		Kapha predominant -skin patches are static hard heavy unctuous, whitish red with more itching exudation and worms are seen ¹³	Rounded patches resembling flower of Nymphaea, associated with burning sensation, itching, pain and discharge ¹⁴	Psoriasis
Rusyajihva	Vata and Pitta predominant Rough, red in edges and brown inside painful & resembles tongue deer ¹⁵	Pitta predominant The patches are rough like tongue of deer ¹⁶	Vata-Pitta predominant Skin patches are rough thin with red colored edges and black in the centre, pricking pain, burning sensation, constant pain and exudation, more of worms are seen ¹⁷	Resembling tongue of deer in shape, having roughness, discoloration, white color and moisture is Risyajihwa ¹⁸	Lichen planus
Shatarushka			Kapha pittaja Multiple ulcers which are deep seated, burning sensation and pain, reddish black in color with more exudates and worms commonly occurring in joints ¹⁹	Blue, red, yellow, black, multiple, rough ulcers, complicated with discharges are present in Shataruska ²⁰	Cutaneous Myiasis, pyoderma Gangrenousus, neutrophilic dermatosis
Visphota	Pitta and kapha ²¹		Thin skin		Epidermolytic

			patches covered with blackish red blebs		lesions
Pundarika	Kapha and Pitta White in color with red edges Resembles leaf of lotus Elevated & accompanied with burning sensation	Kapha predominant -patches are like the petal of Lotus and is incurable ²²	Kapha pitta skin patches with red edges and white inside, itching burning sensation and pain, is reddish dust like the lotus petal, exudes thick and copious lymph and blood and splitting quickly ²³	Large protuberance with big base, developing gradually, bursting quite late, having color like poundarika or palasa ²⁴	Urticarial
Shwitra			No discharge and arising from the three Doshas and three Dhatus (Rakta, Mamsa and medas) ²⁵	Due to its whiteness it is called Shwitra ²⁶ - 5 types	Leucoderma/Vitiligo
Dadru	Pitta and kapha Characterized by itching sensation, redness, pimples, and circular patches with elevated edges ²⁷	Kapha predominant patches are like the flowers of Flax in color(purple) or coppery, spreading and having eruptions ²⁸	Kapha pittaja	Increasing circular patches with dryness, itching, burning sensation and discharges ²⁹	Fungal infection
Sidhma	Vata & Kapha predominant White and coppery in color It is thin and when rubbed it emits small particles of skin in the form of dust Resembles the flower of Bottle Gourd Generally located in chest	Kaphaja Patches of the skin having itching, white in color & thin ³⁰	Vata Kapha Patches is dry outside and moist inside, gives out small scales when scratched, smooth to touch, whitish coppery..resembles flower of Bottle Gourd	It appearing as if covered with dust, having shape like Bottle Gourd or flower of <i>Echinops echinatus</i> is sidhma ³¹	Pityriasis versicolor
Kakana	-vata pitta kapha predominant -Red in color like the seed of gunja It does not suppurated Extremely painful Incurable	-Pitta predominant -patches are like the fruit(berry) of kakanantika(gunja) ³² Incurable	Tridoshaja -severe burning sensation and pain, red and black at the time of onset, resembling the seed of kakananti (gunja) and gradually attaining all the features of kushta and of many colors ³³	It is rough like skin of elephant ³⁴	Squamous cell carcinoma
Maharuska				Large ulcer with extended area, having slimy discharges, pain, burning sensation,	Erysipelas

				itching, pricking pain, fever, softness and roughness seen ³⁵	
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Table 6: Other miscellaneous Skin diseases as per different Ayurveda Acharya and its modern correlation

	Charaka	Susruta	Vaghbata	Kasyapa	Modern Correlation
Sthularushi		Kapha predominant It manifest on big joint in the form of thick static hard and dreadful ulcers ³⁶			Systemic Sclerosis
Eka kushta	It is characterized by absence of perspiration. extensive localization, and it resembles the scales of fish ³⁷	Kaphaja In this the entire body become blackish red	Vata-Kapha -lesion is very wide, non seating and resembles the skin of fish	Having developed over erisepalas, spreading or shifting constantly, associated with discharges,pain and parasite ³⁸	Ichthyosis Vulgaris
Charmadala	Characterized by redness, itching, pustules, pain, cracks, in the skin and tenderness ³⁹	-Pittaja predominant -There is itching pain, burning sensation and sucking pain in the palms and soles	Kaphapitta it has blebs which do not allow touching, severe itching, heat, pricking, and burning sensation, in color	Constantly increasing is charmadala ⁴⁰	Atopic dermatitis
Vicharchika kushta	-kapha predominant -Characterized by blackish brown eruption associated with itching sensation and excessive exudation ⁴¹	-Pitta predominant -Lines which are very itching painful & dry appear all over the body	Eruptions which are itching, black and full of lymph ⁴²	Black, red ulcers with pain, discharges and suppuration is vicharchika	Eczema
Vipadika	Associate with cracks in palms and soles of feet as well as excruciating pain ⁴³	- Pitta predominant - Lines/furrows which having itching, burning sensation and pain appear in the feet only	Vata kapha -causes cracks/fissure in the hands and feet,severe pain and mild itching, studded with red colored eruptions	Non-suppurating,painfull cracks with discharges, present over hands feet thumb, lips thighs and scrotal region ⁴⁴	Plnter and Palmar psoriasis
Kitibha		-Pitta predominant -Skin patch is exudative, roun thick having severe itching is unctuous and black	-Vata kapha -dry skin,rough and hard,itching hard and black	-Black,dark, brown,red,rough,rugged patches with discharges -increasing in size,heavy,recurring repeatedly after getting cured are kitibha ⁴⁵	Psoriasis
Paama	Characterised by excessive itching ,eruptions which are either white,reddish or blackish brown in colour ⁴⁶	-Pitta predominant -Appearance of small eruptions which have exudation itching and burning sensation all over the body	-Kaphapitta predominant -has eruptions which having severe itching, more exudate and pain,small in size,blackish red and large in	Small bright red pimples with itching, pricking pain, suppuration and discharge is paama ⁴⁷	Scabies

Alasaka	Characterised by nodular growth associate with excessive itching sensation and redness ⁴⁸		number It is studded with small tumors, with itching and red in color ⁴⁹		Candidiasis of skn folds
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CLASSIFICATION AND AYURVEDA CORELATION OF SKIN DISORDERS OF INFANCY & CHILDHOOD

- Transient Skin Disease/Neonatal dermatoses - *Sidhma*
- Common Congenital Malformations of Skin like Ichthyosis - *Ekakushtha*
- Birthmarks – *Paridagdha*
- Infections in infancy & Childhood – Viral infections – Bacterial infections – Fungal infections – Different *Kushtha* explained above
- Infestations – Skin ailments with *Kapha Vataja* predominance
- Genodermatosis – Resembles *Charmadala*, *Charma Kushtha*
- Neurocutaneous disorders – Different *Granthi* resembling *Kpha-Vataja Kushtha*
- Metabolic & nutritional dermatoses – Resembles *Mandala Kushtha*
- Cutaneous manifestations of systemic diseases - Different *Granthi* resembling *Kapha- Vataja Kushtha* also different *Pitta-Kaphaja Kushtha*
- Miscellaneous conditions – *Tridoshaja Kushtha*

Neonatal Skin infestations and Ayurveda correlation:

- Neonatal Dermatitis:⁵⁰ Resembles with Kapha-Vataja Kushtha.
- Toxic Erythema of Newborn (Erythema Toxicum Neonatorum): Pitta-Kaphaja Kushta
- Miliaria Rubra (Prickly Heat): Kaphaja Pitika can be correlated with Rajika Vyadhi explained in Ayurveda Kshudra Roga
- Acropustulosis of Infancy: Kapha Pittaja Kushtha
- Transient Neonatal Pustular Melanosis: Pitta Kaphaja Kushtha
- Neonatal Acne: Mukhadushika Kapha-Pittaja Kushtha
- Congenital Syphilis: Upadamsha or Firanga Kushtha as per Ayurveda
- Milia: Kshudra Pidika as per Ayurveda
- Cutis Marmorata: Pittaja Kushtha.
- Diaper Dermatitis (Nappy Rash, Napkin Dermatitis): Ahipootana Vyadhi as per Ayurveda
- Infantile Seborrheic Dermatitis (Cradle Cap): Kapha Vataja

Kushtha, some may corrélates with Kitibha Kushtha

DISCUSSION:

Ayurveda describes the main 18 types of skin disorders under the umbrella term the 'Kushtha'. Despite this all Ayurveda classics defines the innumerable and infinite numbers of *Kushtha* on the basis of *Ruja* (types of pain or burning or itching), *Varna* (color of skin lesion), *Samutthana* (types and extend of *Dosha* involve in etiology of skin diseases), *Sthana* (location of Skin lesion on body parts), *Samsthana* (causative factors responsible and type of symptoms). As explained in Ayurveda classics innumerable numbers of permutations and combination of *Dosha Amshansha Pariaklpna* with above mentioned factors, there are infinite types and variation of *Kushtha* is possible. Considering this fact, one can understand the reason behind the difference of opinion in 2 ancient Ayurveda scholars on the same type of Kushtha. Hence differ of opinion regarding the types of Kushtha and its clinical presentation is prevailed even since ancient time. Therefore there is wide range of analysis

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and interpretation of *Kushtha* has been found in today's Ayurveda literature. Considering the variation in colour, shape and associated symptoms different Ayurveda scholars correlate different *Kushtha* with different modern skin ailments. Even In this article we try to evaluate and correlate different childhood skin disorders on Ayurveda fundamentals of skin and skin disorders. After analysis of literature review of Ayurveda classics, Modern dermatology and childhood skin diseases along with the clinical experience of treatment of skin diseases we observed that, there is a wide range of correlations possible among Ayurveda *Kushtha* and Modern skin diseases. Present article is an attempt to highlight the different types of neonatal and childhood skin disorders and to provide nearer modern interpretation of the same.

CONCLUSION: Ayurveda methodology for diagnosis of *Kushtha* is very scientific and time tested and is useful to find the diagnosis of even newer skin lesions of childhood and newborn, with rationale and scientific approach.

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⁴⁴Kasyapa samhita by p v tewari chaukambha viswabharati publication chikitsa stanam chapter 9 page number 200 vipadika kushta

⁴⁵Kasyapa samhita by p v tewari chaukambha viswabharati publication chikitsa stanam chapter 9 page number 199 kitibha kushta

⁴⁶ Charakasamhita vol 3 chikitsa sthana chapter 7 treatment of paama kushta page no 326 by R K sharma,bhagwan dash

⁴⁷Kasyapa samhita by p v tewari chaukambha viswabharati publication chikitsa stanam chapter 9 page number 199 paama kushta

⁴⁸ Charakasamhita vol 3 chikitsa sthana chapter 7 treatment of alasaka kushta page no 325 by R K sharma,bhagwan dash

⁴⁹Vagbhatas ashtanga hrdayam volume 2 by prof k.r.srikantha moorthy ,nidana sthanam chapter 14, kushta svitra krimi nidanam alasaka kusahta page no 140

⁵⁰ Carr JA, Hodgman JE, Freedman RI, Levan NE. - Relationship between toxic erythema and infant maturity. Am J Dis Child. 1966;112:129–134. [PubMed] [Google Scholar]