

PHARMACODYNAMICS STUDY OF PATOLADI KASHAYA AND KARANJADI LEPA IN VICHARCHIKA W.S.R. ECZEMA

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Abstract

Vicharchika is described under Kshudra Kustha by most of the Acharyas. Kashyapa described Vicharchika in Sadhya Kustha. In ancient time also skin diseases were very common. Acharyas described skin diseases and their treatment in detail. In present era also, skin diseases are very common in all age group, especially pediatric age group. One among them is eczema. Eczema is most common chronic relapsing skin disease seen in infancy and childhood. . Despite of great advance in dermatology and the advent of higher potency antibiotics, antifungal as well as steroids, Eczema continues to defy the best effect of dermatologists. Drug (Dravya) is one among the Chikitsa Catuspada and is having the next place after the physician. Medication is considered as Karana (means) for producing Dhatusamya, and defined as “Anything which is utilized by the physician for restoring the equilibrium of body elements”. Anything besides the source of action, endeavor, place and time which sub serves the same purpose, is also medication. The special treatment therapy of Ayurveda provides long lasting results by treating the disease and preventing reoccurrence. Finally gives a better quality of life. In Ayurveda, Shodhana, Shamana and Nidana parivarjana are the principle treatment methods for any disease. Shaman chikitsa is more preferable and advisable than Shodhana chikitsa in pediatrics age group, because children’s have Alpa, Mridu and Sukumar body constitution.

Keyword: Vicharchika; Eczema; Kustha; Shodhana; Shamana; Hypersensitivity.

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INTRODUCTION

In the recent time, we can see and feel how adversely the impact of modern life is damaging our lives and the natural environment. Day by day change in life style, food habits, behavioral pattern and environmental pollution, industrial and occupational hazards are adversely affecting Human race. All these factors are resulting in low human immunity. It is giving rise to many new challenges in front of medical system, because it is resulting in number of new diseases and also increasing the susceptibility to get affected by uncommon diseases. Skin diseases are very common among these days. The main causes for any disease are use of Mithya Ahara, Vihara and Achara (Improper food habits and activities). Vicharchika (eczema) is one of the common skin diseases. Skin complaints affects all age group peoples right from the neonates to the elderly and cause bad effects in a number of ways, such as discomfort, disfigurement, disability etc.

Skin disease, especially chronic skin manifestation like eczema is associated with significant morbidity in the form of physical discomfort and impairment of patient's quality of life. In Ayurveda, All types of skin diseases come under the one broad heading of Kushtha. Vicharchika is considered as Kshudrakushtha (Minor skin diseases). Vicharchika is generally compared with Eczema due to its maximum resemblance with it. Eczema is most common chronic relapsing skin disease seen in infancy and childhood.^[1] It is slightly more common in boys than girls.^[2]

Despite of recent great advancement in dermatology and the emergence of potent antibiotics, antifungal as well as steroids, Eczema continues to confront the best effect of dermatologists. These drugs also have serious side effects like liver, kidney failure, bone marrow diminution etc. Long term uses of tropical steroids have side effects like skin atrophy, stria, and telangiectasia. Ayurveda

can play a vital role in safe and effective management for Vicharchika. The special treatment methods and therapies of Ayurveda provide long lasting results by treating the disease and also by preventing reoccurrence. Finally it results in a better quality of life. The drug definition given by WHO is: "A drug is any substance or product that is used or intended to be used to modify or to explore physiological systems or pathological status for the benefit of recipient". After going through the details of the Etiopathology of Vicharchika and Eczema, it can be said that Vicharchika is a chronic Tridoshaja Vyadhi especially Kapha-Pitta dominance and allergy is one of the main cause according to modern science. So both formulations were selected for keep in these factors in mind i.e. Patoladi kashaya and Karanjadi lepa was selected for present study. Drugs of both these formulations are Kusthaghna (cures skin diseases), Kandughna (reduce itching), Varnya (provides complexion), Krimighna (ant-helmentic), Rasayana (promotes strength), Raktashodhaka (blood purifier) and Tridosha Nashaka activity and also having anti-allergic, immunomodulatory, antihistaminic, immunosuppressive, anti-inflammatory, antioxidant and antibacterial properties.

OBJECTIVES

- To find out efficacy of Patoladi Kashaya and Karanjadi Lepa in Vicharchika.
- To study detail pharmacological action of Patoladi Kashaya and Karanjadi Lepa in Vicharchika.

MATERIAL AND METHODS

A clinical efficacy trial was done by using both formulations and information pertaining to the pharmaco-dynamics of formulation drugs was primarily obtained from various textbooks and previous research works.

DISCUSSION

Vicharchika has been mentioned, either in form of Kshudra Kustha or Sadhya Kustha in various Ayurvedic texts. Ayurvedic Acharyas mentioned Vicharchika with different Doshic involvement of apparition of their symptomatological complex. Charka described that Vicharchika has a Kapha dominancy because, there is an excess Kandu (itching), Vaivarnya (discoloration), Pidika (boil), Bahu Srava (profuse oozing), which also indicates its acute stages. Characteristics like Raji (marked lining) and Arti (pain) and Ruksha (dryness) indicates chronic or later stage of Vicharchika. Thus, this separation may also suggest different clinical stages of Vicharchika. In initial stage of Vicharchika when pruritus is severe, that time skin intactness may rupture and water discharge may produce. It is also mentioned by Vagbhata that Vicharchika has a characteristic like Lasikadhya while Indu has explained it with Jalapraya i.e., watery discharge. Vicharchika symptomatology is very similar with Eczema. Now a days, modern science become so much advanced predominantly in dermatology and also availability of potent antibiotics, antifungal, antihistaminic, steroids, etc. but better management could not be find out till today. Few drugs are available, which results only in symptomatic relief only. Their haphazard use is most undesirable. Long term use of topical steroids may result in skin atrophy, stria, and telangiectasia. Ayurvedic system of medicine is generally considered as the best for most of the acute and chronic skin diseases. Holistic approach of Ayurveda is particularly useful in treating skin diseases, which is often a manifestation of systemic illnesses.

Ingredients of Patoladi kashaya^[3] and Karanjadi lepa^[4] are tabulated in Table 1 and Table 2 respectively.

Kwatha Kalpana (Decoction)

Kwatha one of the most popular Kalpana amongst five basic Kalpana's, widely used therapeutically as well as pharmaceutically. All Samhitas regarding its preparation, amount of water, reduction in volume of liquid etc. Kwatha kalpana may be defined as: A Kalpana in which a specific size of Kwatha Dravya (drugs for decoction) is taken and a specific amount of water is used as menstrum and applying specific quantum of heat, the volume of water is reduced to specific amount and then by filtering Kwatha can be obtained.

Lepa Kalpana (Ointment)

Wet medicinal drugs are made in to paste form, if the drugs are in dry state they are converted in to paste form by adding little quantity of water and grinding. This paste is used as an external application and called Lepa Kalpana. From pharmaceutical point of view, Lepa Kalpana is a form of Kalka Kalpana (paste). Kalka and Lepa both are same only the purpose for which it is used, decides its nomenclature. Modern pharmaceutics have not poised any specific terminology for Lepa.

Bases used in Lepa kalpana

The selection of an optimum base for the preparation of Lepa is extremely essential in Indian system of Medicine as it provides a suitable and easier access to the active principles of the drugs up to the deepest stratum of skin. Ghrita (ghee), Tail (sesame oil), Kanji (rice gruel), Gomutra (cow's urine), Siktha (bee's wax), Milk, Butter milk, Butter, Lemon Juice and likewise substances can be used as bases in Lepa Kalpana. Ghrita, Navneet (butter), Tail, Siktha are oleaginous bases and have high degree of compatibility with a variety of medicaments.

Table 1: Ingredients of Patoladi kashaya

Sl. No.	Drug	Latin name	Part used	Quality
1.	Patola	<i>Trichosanthes dioica</i>	Leaves	1 part
2.	Guduchi	<i>Tinospora cordifolia</i>	Root, stem, leaves	1 part
3.	Karanja	<i>Pongamia pinnata</i>	Tvaka, leaves, seeds	1 part
4.	Vibhitaki	<i>Terminalia belerica</i>	Fruit	1 part
5.	Amalaki	<i>Emblica officinalis</i>	Fruit	1 part
6.	Nimba	<i>Azadirachta indica</i>	Leaves, seeds, bark	1 part
7.	Khadira	<i>Acacia catechu</i>	Extract, bark, wood	1 part
8.	Haritaki	<i>Terminalia chebula</i>	Fruit	1 part
9.	Vasa	<i>Adhatoda vasica</i>	Patra	1 part

Table 2: Ingredients of Karanjadi lepa^[4]

Sl. No.	Drug	Latin name	Part used	Quality
1.	Karanja	<i>Pongamia pinnata</i>	Seeds	1 part
2.	Chakramarda	<i>Cassia tora</i>	Leaves, seeds	1 part
3.	Kustha	<i>Saussurea lapa</i>	Root	1 part
4.	Gomutra	Cow urine		Quality sufficient

Bases of these types are occlusive, increase skin hydration by reducing the rate of loss of surface water. Skin hydration on the other hand may increase drug activity. These oleaginous bases also minimize temperature effects. These bases solely can be used for their skin-moisturizing effect.

The Ayurvedic bases for Lepa Kalpana are not inert substances but they are therapeutically active too. Also the bases, as such, do not fulfill the criteria for an ideal base laid down by modern pharmaceuticals; still they are much more than that in efficacy. Here in this study, Gomutra is used as a base for the topical application of Karanjadi Lepa.

Gomutra mainly work as penetration enhancer. Penetration enhancers, with a direct effect on the skin permeability include solvent and chemicals like urea, N, Ndiethyl-M-toluamide and etc.

And this is worth mentioning here that Gomutra contains more than 30% of urea in it. Thus Gomutra can be put forward as a penetration enhancer of Ayurveda.

Probable mode of action of Lepa

The probable mode of action of Lepa can be described in two steps as mentioned in Chart 1.

Probable Pharmacological actions are tabulated in Table 3.

Patoladi Kashaya

In Sahasrayogam, Patoladi Kashaya is mentioned for Kustha Chikitsa (skin diseases treatment). This Kashaya having key ingredients, which are having Tridoshahara properties, especially Kaphapittahara property, which are main Dosha's involved in pathogenesis of Vicharchika.

Key ingredients also having Kushtaghana, Kandughana, Krimighna, Rasayana, Vrana Shodhana and also Varnya properties. Recent research work shows that these drugs are having potent pharmacological action like anti-allergic, anti-inflammatory, immunomodulatory, cytoprotective, antioxidant and antimicrobial properties.^[5]

Table 3: Summary of Pharmacodynamics of Patoladi Kashaya and Karanjadi Lepa drugs

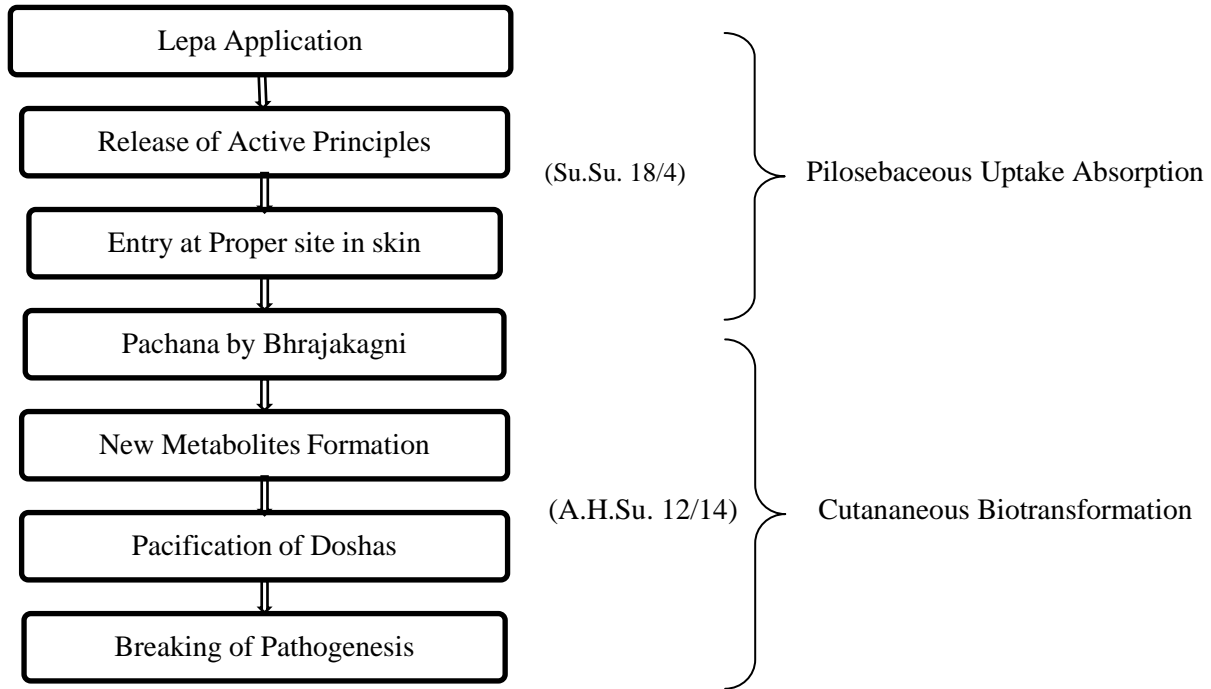
Content	Rasa	Guna	Virya	Vipaka	Dosha karma	Action on skin
Kustha	Tikta, Katu, Madhura	Laghu, Ruksha, Tikshna	Ushna	Katu	Kaphavatahara	Kusthaghna, Krimighna, Swedajanana, Varnya, Antiinflammatory
Patola	Tikta	Laghu, Ruksha	Ushna	Katu	Tridoshara	Antioxidant, Antibacterial, Wound healing
Khadira	Tikta, Kashaya	Laghu, Ruksha	Sheeta	Katu	Kaphapittahara	Krimighna, Shothahara, Varnya, Kandughna, Antiinflammatory, Antibacterial
Nimba	Tikta, Kashaya	Laghu, ruksha	Sheeta	Katu	Kaphapittahara	Kusthaghna, Kandughna, Vranashodhaka, Rasayana, Tvak doshahara
Guduchi	Katu, Tikta, Kashaya	Laghu	Ushna	Madhur	Tridoshahara	Kusthaghna, Krimighna, Rasayana, Dahaprashmnam, Antiallergic, Immunomodulatory
Haritaki	Pancharasa (lavanavarjita)	Ruksha, Laghu	Ushna	Madhur	Tridoshahara	Rasayana, Kusthaghna, Krimighna, Antiallergic, Antioxidant
Vibhitaki	Kashaya	Ruksha, Laghu	Ushna	Madhur	Tridoshahara	Krimighna, Raktashodhaka, Antioxidant, Antimicrobial
Amalaki	Pancharasa (Amlapradhan)	Ruksha, Laghu, Sheeta	Sheeta	Madhur	Tridoshahara	Kusthaghna, Krimighna, Rasayana, Dahaprashmana, Chemopreventive, Antiinflammatory
Vasa	Tikta, Kashaya	Laghu, Ruksha	Sheeta	Katu	Kaphapittahara	Kusthaghna, Krimighna, Raktashodhaka, Antibacterial
Karanja	Tikta, Katu, Kashaya	Laghu, Tikshna	Ushna	Katu	Kaphavatahara	Kusthaghna, kandughna, Vranaropaka, Antiinflammatory, Antioxidant
Chakramarda	Katu	Laghu, Ruksha	Ushna	Katu	Kaphavatahara	Kusthaghna, Lekhana, Krimighna, Raktaprashadaka, tvak vikara nashak, antibacterial
Gomutra	Pancharasa, Amlaheena	Tikshna, Ushna, Laghu	Ushna	Katu	Kaphavatahara	Kusthaghna, Krimighna, Kandughna, Lekhana, Malshodhaka

By antiallergic property it cures the main cause of Eczema i.e. allergy. Antioxidant action may help in reducing the risk of allergy by protecting against oxidative tissue damage.^[6]

Drugs like Khadira, Guduchi, and Patola are having potent antioxidant properties.

Allergies arise from imbalanced Doshic state i.e. Vata or Pitta or Kapha according to Ayurvedic concept. The stipulated yoga (formulation) is a very potent Shamana (pacifying) type of Aushada (medicine). Shamana Aushadha has strength of curing Doshic imbalance and maintaining Dosha in a balanced state. So it finally reduces the risk of allergy.

Chart 1: Hypothesis based on textual references



Immunomodulatory activity reduces hypersensitivity reaction. It also helps in reducing severity and risk of allergy. The immunomodulatory property of *Tinospora cordifolia* is well documented. Active compounds 11-hydroxymustakone, N-methyl-2-pyrrolidone, N-formylannonain, cordifolioside A, magnoflorine, tinocordiside and syringin has been reported to have potential immunomodulatory effects. They have been reported to function by boosting the phagocytic activity of macrophages, production of reactive oxygen species (ROS) in human Neutrophils cells, enhancement in nitric oxide (NO) production by stimulation of splenocytes and macrophages indicative of anti-tumor effects. *Tinospora cordifolia* extracts have been reported to scavenge free radicals generated during aflatoxicosis.^[7]

Stipulated yoga drugs are having predominance of Tikta (bitter) and Kashaya Ras (astringent taste), Tikta Rasa works on Aamashya (small intestine) and treat the Ama (undigested materials) condition; finally it improves Agni

(digestive fire) and helps in Sroto-sudhi (purifies the channels). Causes of eczema like infections may be cured by antimicrobial property of stipulated yoga. *S. lappa* causes a significant reduction in the mRNA levels and production of inflammatory chemokines and cytokine, by this property; it can effectively suppress the development of atopic dermatitis.^[8] The methanol extracts of *Tinospora cordifolia* have been reported to have potential against microbial infections. The anti-bacterial activity of *Tinospora cordifolia* extracts has been assayed against *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Proteus vulgaris*, *Salmonella typhi*, *Shigella flexneri*, *Salmonella paratyphi*, *Salmonella typhimurium*, *Pseudomonas aeruginosa*, *Enterobacter aerogene*, and *Serratia marcescens* (Gram-positive bacteria).^[9]

Rakta (blood) is said to be one of the main Dushya in Tvak Vikara (skin diseases). Tikta and Kashaya Ras dominance drugs also have Raktashodhaka (blood purifier) and Raktaprasadana properties. By these properties

these drugs have direct positive effect on Tvak dhatu. One of the key ingredients in stipulated yoga is Khadira; Acharya Caraka has described that Khadira is best Kushtaghna Dravya. Guduchi is a proved immune-modulator and also a very potent Rasayana drug. Guduchi helps in reducing the episodes and severity of allergy, which is a root cause of the Eczema.

Guduchi, Amlaki, Haritaki has Rasayana properties. These drugs help in reducing the reoccurrence of Vicharchika. Rasayana drugs are used for maintenance of good health, because they have immune-modulatory, antioxidant and hemopoetic effect. Rasayana drugs also help in improving the complexion of the skin.

Caraka described that Vibhitaki has potency of curing all the diseases, which arise due to vitiation of Rasa, Rakta, and Mamsa Dhatu.^[10] By this statement we can conclude it works' on diseases that arises from Rasavaha, Raktavaha and Mansavaha Srota's. In Vicharchika pathogenesis, these Srota's are mainly involved. Drugs like Nimba, Amalaki and Guduchi have especially Dahaprashmana (cures burning sensation) property. Patola and Karanja also work as Vranaropaka Dravya and Nimba as Vranashodhaka Dravya.

All these potential drugs will help in reducing the symptoms of Vicharchika like Kandu, Vaivarnya (discolouration), Pidika (papules/nodules), Rukshata (dryness), Srava (oozing), Daha (burning sensation), Raji (lichenification) and Ruja (pain), and finally in breaking the pathogenesis of Vicharchika.

Karanjadi lepa

Karanjadi lepa also has all Kusthaghna, Kandughna, and Krimighna and Varnya drugs in it. Almost all the drugs of stipulated yoga are having antibacterial, anti-pruritic, anti-inflammatory and antimicrobial action. Karanjadi lepa is applied through the aid of gomutra, which are also a potent Kusthaghna and Krimighna Dravya. It is Aruksha (not rough) in nature.

Gomutra also works as penetration enhancer, so it facilitates absorption through the skin. Chakramarda and gomutra have Lekhana property (scraping).

So we can draw a conclusion that both the above said yoga's have Tridoshaghna property and were equally effective in reducing the signs and symptoms of Vicharchika, also in preventing the reoccurrence of disease.

CONCLUSION

Conclusion is the determination established by investigating in various ways and deducting by means of various reasons. On the basis of the present study, following conclusions can be drawn. Vicharchika is a chronic relapsing type of disorder. Vicharchika is Kapha-Pitta predominant Tridoshaja Kushtha. Vicharchika can be treated effectively by Patoladi Kashaya and Karanjadi Lepa as it is having properties like Kusthaghna, Kandughna, Krimighna, Raktashodhaka, Raktaprasadaka, Rasayana, Shothahara, Srotoshodhana etc and also having proved anti-inflammatory, antiallergic, antioxidant, immunomodulatory, cytoprotective, antibacterial effect, antimicrobial, antitumor and immunosuppressive activity etc, these properties helps in better cure of disease.

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