

A CRITICAL REVIEW ON CALOTROPIS PROCERA (ARKA) W.S.R. KUSHTHAGHNA PROERTY IN ECZEMA

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ABSTRACT

Atopic dermatitis (AD), also called atopic eczema, is a common chronic or recurrent inflammatory skin disease and affects 15-20% of children and 1-3% of adults worldwide. It is characterized by acute flare-ups of eczematous pruritic lesions over dry skin^[1]. People living in remote areas make use of these herbs in various disorders. The incidence of this disease is very high in children and young adult age group. *Arka* (*Calotropis procera*) is one of the *Upvishas*. *Arka* is an irritant organic vegetable poison. It contains Uscharin, Calacatin & Calotoxin *Arka* is having *Katu, Tikta rasa & Ushna Virya*. *Arka* is having *Kustaghna* and *Kandughna* properties mentioned in *Samhitas*. *Arka* has *Vedanasthapan, Shothhar, Vranshodhan, Jantughna, Kandughna*, properties. According to *Lakshanas* and pathogenesis *Vicharchika* can be correlated with Eczema. *Vicharchika* (eczema) mentioned in ancient classical texts of Ayurveda as one among the *kushtha*. All *Kushthas* have a *tridoshaja* origin hence *Vicharchika* can be assumed as one of them i.e *Kapha* being responsible for *kandu*, *pitta* and *Kapha Pradhan* responsible for *srava* and *shyavata* indicate presence of *Vata*. According to Sushruta the *lakshanas* are *Atikandu, Ruja*, and *Rukshata* involving the domination of *Pitta* which correlates with the symptoms of dry eczema Itching, discharge, discolouration of skin. Despite its *tridoshaja* origin various *Acharyas* have mentioned different dominancy in *Vicharchika* i.e. *kapha, pitta and vata-pitta pradhan*. Various studies have shown antibacterial and antifungal properties of *Arka*. Infective organisms play an important role in triggering and aggravating in eczema. Bacteria *Staphylococci* and streptococci on the skin provide constant stimulation to immune system resulting chronic inflammation. *Arka* has Antagonistic activity against *Staphylococcus aureus, Escherichia coli, Bacillus cereus, Pseudomonas aeruginosa, Micrococcus luteus* and *Klebsiella pneumonia*. This study is carried out to elaborate antifungal and antimicrobial activities of *Calotropis procera* on various symptoms of eczema.

Key words: *Calotropis procera, Tikta rasa & Ushna Virya, Atikandu, Ruja, and Rukshata*

INTRODUCTION

Ayurveda is a science which deals with the knowledge of life Agadtantra is one of the eight specialized branches i.e. *Ashtangs* of Ayurveda^[2]. Synonyms of Agadtantra is *Vish Garavairodhik Prashman*^[3], *Danshra*

Chikitsa^[4] and *Jangali*^[5]. Agadtantra is the science which deals with signs, symptoms and management of poisoning, resulting from the bites of snakes, insects, worms, spiders, rodents etc. and various other poisons produced

by improper combinations of substances or drugs^[6]. *Visha* is the substance immediately after entering into the body causes the vitiation of the healthy *Dhatus* or killing of the healthy person.

In Ayurveda, skin diseases are explained under the common terminology *Kushtha* which implies exposed diseases. Despite its *tridoshaj* origin various Acharyas have mentioned different dominance in *Vicharchika* i.e. *kapha*^[7] *pitta*^[8] and *vata-pitta pradhan*^[9] as per the symptomology and pathogenesis. *Samanya Chikitsa Upkrama* for *Vicharchika* are *Sanshodhan, Shaman, Aalepan, Kashaaypan, Raktamokshan, Mantha, Asavarishta, Ghrita, Lepa and Taila*^[10].

Eczema is a skin disorder characterized by itching, erythema, edema, vesiculation, oozing, hypo or hyperpigmentation^[11]. However, any disease that involves skin hampers many functions and gives the person a hideous look. As skin diseases are perceptible to others, they are more painful for the patient and troublesome for the physician. Several skin diseases affect person's psychological status and disturb the social life. Any blemish on skin causes lot of psychological stress besides and physical uneasiness. Eczema is specific type of an antigen-specific immune response and result due to antigen antibody reaction it is resultant delayed type of hypersensitivity mediated by T-lymphocytes in the skin and the clinical lesion may be acute (wet and edematous) and chronic (dry thickened and scaly) dependant on persistent insult^[12]. As per the pathogenesis

and symptoms of Eczema, properties of *Arka* can be used in treatment of eczema.

Aim & Objectives: -To review the *Kushthaghna* property of *Arka* in *Vicharchika*.

Review of literature-

Arka (Calotropis procera)-

Arka (Calotropis procera) is one of the eleven *Upvishas*. *Arka* is an irritant organic vegetable poison belonging to *Asclepidaceae* family containing *Uscharin, Calacatin & Calotoxin* as active principle^[13] *Arka* is having *Katu, Tikta rasa & Ushna Virya. Gunas are Laghu, Ushna & Tikshna*. *Arka* is having *Kustaghna* and *Kandughna* properties other formulations of *Arka* are *Arkalavan, Arkeshwar, Pravalpanchamrut, Ekangvir etc.* In *Sharangdhar Samhita*^[14] and 'Bharat Bhairav Ratnakar' *Arkapatra Taila* is indicated for the treatment of all varieties of *Kushta* including *Vicharchika*^[15]

The results of studies have shown that the aqueous and ethanol extracts of the leaf and latex of *C. procera* inhibit the growth of some bacteria and fungi test isolates with an inhibitory ability that increases with temperature. It could therefore be inferred that the plant leaf and latex contain bioactive constituents which can effectively inhibit the growth of some microorganisms. This lends credence to the traditional use of this plant as a medicinal plant. However, further studies need to be carried out on the toxicity, antioxidant and the immunomodulatory activities of *C. procera*. Antimicrobial activity (mm) of ethanolic extract of the plant samples.^[16]

Table 1: Name ????

	<i>E. coli</i> Etanol	Water	<i>S. typhi</i> Etanol	Water	<i>B. subtilis</i> Ethanol	Water	<i>C. albicans</i> Ethanol	Water	<i>A. niger</i> Etanol	Water
<i>C. procera</i> (leaf)	10	10	0.95	10	0.0	0.0	11	10	10	10
<i>C. procera</i>	16	14	14	14	21	19	14	14	16	14

(latex)										
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Vicharchika -

Vicharchika is a *Kaphapradhana* predominant disorder presenting in *Ayurvedic* clinical practice, which may be considered as "eczema" in contemporary science. Its control leads to prophylaxis towards the further spread of the disease. The disease *Vicharchika kusta* is explained in classical texts like *Charaka samhita*^[17], *Sushruta samhita*^[18], *Astanga hridaya*, *Bhela samhita*^[19], *Kashyapa samhita*^[20], *Sarangadhara samhita*^[21], under the broad headings as *kushta*^[22]. *Vicharchika kusta*, the skin ailment simulates to eczematous dermatitis of contemporary science.

Vicharchika kusta placed under *kshudra Kusta* of *vata kapha pradhana tri-dosha vyadhi*, exhibiting *kandu srava* as a major clinical presentation. All acharyas opines the same and no controversial statement made so far. *Acharya Charaka* in *chikitsa sthana* elaborated wide verity of treatment for *Vicharchika kusta*. The sets of skin disease are told as difficult to cure (*Kustam deergha ro-gaham*) makes us more difficult task. For all these skin disease *bahirparimarjana chikitsa* has vital role^[23] and its efficacy is widely accepted. If at all the treatment is planed both internal and external the result will be better. A study is intended to give the relief to the patient suffering from. *Vicharchika kusta* by administering both internal & external medicine. as per the symptomology and pathogenesis. *Samanya Chikitsa Upkrama* for *Vicharchika* are *Sanshodhan*, *Shaman*, *Aalepan*, *Kashaaypan*, *Raktamokshan*, *Mantha*, *Asavarishta*, *Ghrita*, *Lepa* and *Taila*^[24]

According to *Lakshanas* and pathogenesis *Vicharchika* can be correlated with Eczema. Eczema is a skin disorder characterized by itching, erythema, edema, vesiculation, oozing, hypo or hyperpigmentation^[25]. Eczema is specific type of an antigen- specific

immune response and result due to antigen antibody reaction it is resultant delayed type of hypersensitivity mediated by T-lymphocytes in the skin and the clinical lesion may be acute (wet and edematous) and chronic(dry thickened and scaly) dependant on persistant insult. Common method of treating of eczema is with *Mgso4* and corticosteroids which longer use can cause some reactions on body^[26].

Therapeutic use of Arka^[27] -

Arka is having *Kustaghna* and *Kandughna* properties mentioned in *Samhitas*. Because of *Tikta Rasa* predominance *Arka* has *Vedanasthapan*, *Shothhar*, *Vranshodhan*, *Jan-tughna*, *Kandughna*, properties. Its **Dosh-ghanata** is *Kaphavatshamak Vedanavayukta-vikara*, *shleepada*, *Amavata*, *Shwitra*, *Gulma*, *Charmarog*, *Gandmala*, *Udararog*.

DISCUSSION

Acharya Charaka said that *Vicharchika* is *kandu*, *pidka*, *bahustrava*, *shyavvarna yukta*. But, *Acharya Sushruta* mentioned *Kandu*, *shyavvarna*, *atiruja*, and *rooksha* The disease *Vicharchika* to a greater extend resembles eczema; dermatitis *Vicharchika* can be co-related with eczema in sequence with symptoms *Kandu* (Excessive itching), *Pidka* (Papules/ pustules/plaques/Vesicles), *Vaivar-nata* (Erythema) with discoloration/hypo, hyper pigmentation, *Srava* (discharge/Strava), *Rooksha* (Dry lesions/thickened skin)*Raji* (Thickening or lichenification of skin), *Rooja* (pain)and *Daha* (Burning sensation). The *Arkapatra* is having *Kushthaghna* and *Kandughna* properties .its action is mainly on skin and skin disorders. Various studies have shown antibacterial and antifungal properties of *Arka* Infective organisms play an important role in triggering and aggravating in eczema. Bacteria *Staphylococci* and streptococci on the skin provide constant stimulation to immune

system resulting chronic inflammation. *Arka* has Antagonistic activity against *Staphylococcus aureus*, *Escherichia coli*, *Bacillus cereus*, *Pseudomonas aeruginosa*, *Micrococcus luteus* and *Klebsiella pneumonia* [28]. This review is carried out for *Kushthaghna* property of *Arka* in *Vicharchika*.

CONCLUSION –

Arka is described for its *Jantughna*, *Kushthaghna*, *Krumighna*, *Raktashodhaka* properties in *Ayurveda*. Moreover it has pharmacological activities like vermifugal, anti-helminthic, antibacterial described in contemporary science. Some researchers are also conducted to prove its efficacy as antibacterial and antifungal agent. Hence, it can be used as best *Kushthaghna* and *Kandughna* in *Vicharchika*. It can be concluded that the *Kushthaghna* and *Kandughna* properties of *Arka* can be used in treatment of *Vicharchika*. Further study can be carried out in clinical evaluation of *Calotropis procera* in eczema.

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