


Research Article
A CLINICAL STUDY ON THE THERAPEUTIC EFFECT OF DHATRYADI KWATHA & APARAJITHA LEPA IN SWITRA IN CHILDREN
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ABSTRACT

Vitiligo is one of the skin diseases causing cosmetic problem. It is a common puzzling disorder of great socio-medical importance characterized by hypo pigmented and/or depigmented milky white or ivory white maculae on the skin, resulting from the loss of cutaneous melanocytes. It affects approximately 1-4% of world population in both sexes equally. It inflates an inferiority complex in the person affected. The exact cause of Vitiligo remains obscure, auto immunity may play a role in the development of the disease. It is a challenging problem to all systems of medicine. Modern science treats it with topical & systemic photo chemotherapy, corticosteroids & skin grafting which is costly and not much effective added with more side effects. Based on the clinical features of *Switra*, it can be correlated to 'Vitiligo' of the Modern medicine In order to evaluate an ideal management for the relief and cure of *Switra*, an attempt has been made in this work to establish the therapeutic potentialities of '*Dhatryadi Kwatha & Aparajitha Lepa*' in *Switra*. The *Yoga, Dhatryadi Kwatha* derives its reference from a renowned classic- '*chakradhatta*' and '*Aparajitha lepa*' from '*Rajamarthanda*'. 30 children with *Switra* were taken up for the study of age between 0-16years and were given treatment for 3 months consisting of external application with *Aparajitha lepa* and internal medication with *Dhatryadi Kwatha*. The study has been subjected to statistical analysis, in which the results were found to be significant.

KEYWORDS: *Switra*, Vitiligo, *Dhatryadi kwatha*, *Aparajitha lepa*, Repigmentation.

INTRODUCTION

The description of *Switra* is available since Vedic literature. The terms used in the place of *Switra* in Vedic literature are *Shwetakushta*, *Kilasa* and *Palita*. The term "*Kilasa*"-its meaning in *Rig-Veda* explained as the "Spotted deer". Hence this term devotes the impairment of the color of the skin. The term *Switra* derives from the root. "*Swetate twaganena switram*" That means which gives white color to the skin^[1]. Almost all the ancient scholars give the justification of description of *Switra* starting with *Nidana* and ending with *Chikitsa* as that of *Kushtha*. Later authors differentiated *Switra* from *Kushtha*, by its being less destructive to the tissues of the body. All these facts put together, the term *Switra* is used separately from *Kushtha*, in which everything else like the destruction of tissues, does not occur.

If *Switra* is characterized by a change in the color of the skin, it can be equated to that of "Vitiligo" in modern medicine. The term Vitiligo was first mentioned by "Celsus", a scientist and Physician of Rome in second century. This term has been derived from a Latin word, "Vitilious"^[2] meaning a "Calf" comparing the whiteness of the skin of the calf to that of human skin. It affects approximately 1-4% of world population in both sexes equally. However, its incidence ranges from 0.1 to > 8.8 % across the country and in different countries of the globe^{[3],[4]}.

The genetic epidemiology of Vitiligo is part of a broader genetically determined autoimmune and auto inflammatory diathesis. Many authorities believe that the cause of melanocytes destruction in Vitiligo is an endogenous cellular abnormality. It has been suggested

that melanocytes are destroyed because of the accumulation of a toxic melanin synthesis intermediate and / or lack of protection from hydrogen peroxide and other oxygen radicals. About 50% of children with Vitiligo have onset before 18 years of age, and 25% demonstrate depigmentation before age 8.^[5] Most children have generalized form, but the segmental type is more common among children than among adults. Patient with generalized form usually present with a symmetrical pattern of white macules and patches. In segmental type, depigmented areas are limited to a quasi-dermatomal distribution.

Light microscopic examination of early lesions shows mild inflammatory change, over a time degenerative changes occur in melanocytes, leading to their complete disappearance. The two most common differential diagnoses are tinea versicolor and post inflammatory hypo pigmentation and leprosy^[5,6]. Then coming to the treatment, localized areas of Vitiligo may respond potent topical steroid, topical tacrolimus or topical. In patient with more extensive involvement, narrow banded ultraviolet blue B is the treatment of choice, but response to therapy slowly, taking months to years and spontaneous remission may be seen. All areas of Vitiligo are susceptibility to sun damage, are care should be taken to minimize sun exposure of affected areas.

In *Ayurveda*, *Shvitra* or *Kilasa* is the term employed to describe hypo pigmentation disorders of the skin. *Shvitra* is caused by various dietic and behavioural factors which aggravate the *Tridoshas*, especially

the *Kapha dosha* vitiating the *Raktha*, *Mamsa* and *Meda Dhatu*.^[7]

Many Ayurvedic drugs are well known for the regeneration of melanocytes, among which '*Dhatryadi Kwatha & Aparajitha Lepa*' is one. The present study was planned to study its efficacy in the regeneration of melanocytes. The outcome of treatment in 30 cases of *Shvitra vis-à-vis* Vitiligo receiving *Dhatryadi kwatha* ^[8]. as internal and *Aparajitha lepa* ^[9]. as a external application were analyzed and compared before and after treatment.

Materials and Methods

A) MATERIALS

- Amalaki phala*- 1part
- Khadira Twak* - 1part
- Bakuchi bija* - 1part
- Swetha Aparajitha mula*

B) METHODS

(a) Preparation of Study Drug

- Dhatryadi kwatha*
- Aparajitha lepa*

Preparation of internal medication

Amalaki, *Khadira*, *Bakuchi* were taken in equal quantity and subjected into coarse powder. Now the drug is made into *Kwatha* as per classics by adding water in the ratio 1:8 and reduced to ¼ quantity. It is administered according to the *Vaya*, *Bala* and *Agni* of the patient.

Preparation of external application

Root of *Swetha Aparajitha* was made into paste by rubbing it on a stone through the aid of water, and then applied over the affected areas and made to expose to the morning sunlight until it gets dry.

Conduct of trial

- Clinical evaluation
- Laboratory evaluation

1. Clinical evaluation: The trial was conducted in four phases.

Phase I

Study Design - Open label, Randomized
Type of Trial - Efficacy Trial
No. of Objects - 30
Duration of Treatment - 90 Days

Selection Of Patients - Total 30 patients were selected and registered from O.P.D. of Kaumarabhritya department, S.V.Ayurvedic hospital, Tirupati. based on the criteria mentioned below.

Inclusive Criteria

- Children of age group 0-16years.
- Patients with *Sadhya Lakshana* of *Shvitra* (*Peeta chavi*, *Pandu varna*, *Ruksha*, less than 1yr old)
- Size of patch up to 5cm × 5cm
- Patients having *Shvitra* patch with normal sensation in touch

Exclusive Criteria

- Age group > 16 years.
- Lesion over the lips, genital & burnt areas
- More than one year old
- The old refractory causes not responding after extensive use of modern medicine.
- Vitiligo associated with malignant melanoma, albinism and *other skin-disease*
- Patient suffering from other systemic disease& autoimmune disorder.

Phase-II

- Patients were clinically assessed basing on parameters before treatment.
- Rogi Pariksha* and *Bala* of patient were assessed prior to treatment.

Phase-III

- Patients were given the *Kashaya* as per *Vaya*, *Bala*, *Agni*.
- Kashaya* was given 3 times per day after food.
- Lepa* was applied over the affected part through the aid of water
- Observed for burning sensation or increase in pain or roughness.
- The observations were recorded on the basis of gradation before and after treatment.
- The dropped out cases were not included in statistical analysis.

Phase-IV

Patients were assessed according to following parameters for 3 months with follow up for every 15 days.

Table 1: Subjective parameters

Symptoms	Grading		
<i>Twak Shwetata</i>	Grade 0	Normal	Normal skin colour
	Grade 1	Mild	Less depigmentation at margins and more pigmentation over a lesion.
	Grade 2	Moderate	Depigmentation is more than pigmentation or equal over a lesion.
	Grade 3	Severe	No pigmentation, totally white colour
<i>Twak rukshata</i>	Grade 0	Normal	No dryness
	Grade 1	Mild	Dryness on exposure to sunlight and other allergens.
	Grade 2	Moderate	Dryness during exposure to cold environment
	Grade 3	Severe	Always dryness
<i>Kandu</i>	Grade0	Normal	No itching
	Grade1	Mild	Itching on exposure to cold, sunlight and other allergens.
	Grade2	moderate	Itching on exposure to cold environment

	Grade3	Severe	Severe itching
Daha	Grade 0	Normal	No burning sensation
	Grade 1	Mild	Burning sensation on exposure to midnoon sunlight.
	Grade 2	Moderate	Burning sensation on exposure to morning sunlight and other irritants.
	Grade 3	Severe	Always burning sensation
Roma vivarnata	Grade 0	Normal	Normal hair colour
	Grade 1	Mild	less than 20% of hair over the lesion has <i>Vivarnata</i> .
	Grade 2	Moderate	25-75% of hair over the lesion has <i>Vivarnata</i>
	Grade 3	Severe	more than 75% of hair over the lesion has <i>Vivarnata</i>

International protocol for grading of repigmentation¹⁰

Grade 1 : Diffuse lightening usually seen at margins (tan colour)

Grade 2 : perifollicular repigmentation

Grade 3 : spreading of perifollicular repigmentation

Grade 4 : coalescing pigmentation with areas of repigmentation in between

Grade 5 : confluent repigmentation with remnant islets of depigmentations inbetween

Grade 6 : complete repigmentation

Statistical Evaluation of Results

The observations obtained from the clinical study, their interpretations and results are classified as,

Table 2: Age wise distribution of 30 patients

Age(in years)	No. of patients	Percentage
0-4	01	3.33
5-8	10	33.33
9-12	11	36.33
13-16	08	26.66

Table 3: Gender wise distribution of 30 patients

Gender	No. of patients	Percentage
Male	21	70
Female	09	30

Table 4: Distribution of patients according to chief complaints:

Chief complaints	No of patients	Percentage
<i>Twakshwethata</i>	30	100
<i>Twakrukshata</i>	9	30
<i>Daha</i>	2	6.66
<i>Kandu</i>	4	13.33
<i>Vrana</i>	2	6.66
<i>Romavivarnata</i>	7	23.33

Table 5: Distribution of patients according to new patches during treatment

New Patch	No. of patients	Percentage
Appeared	10	33.33
Not appeared	20	66.66

Effect of Therapies on Patients**Table 6: The effect of the therapy on various parameters**

S.No	Characteristics	No. of Observations	Mean Score		SD	SE	t	p	Remarks
			BT	AT					
1	<i>Twak shwetata</i>	30	2.73	1.57	1.04	0.19	6.4839	<0.001	Extremely Significant
2	<i>Twak rukshata</i>	9	0.67	0.30	0.70	0.13	2.7959	<0.001	Highly Significant
3	<i>Kandu</i>	4	0.27	0.07	0.25	0.05	2.1623	>0.05	Not Significant
4	<i>Daha</i>	2	0.07	0.00	0.0	0.0	1.2392	<0.1608	Not Significant

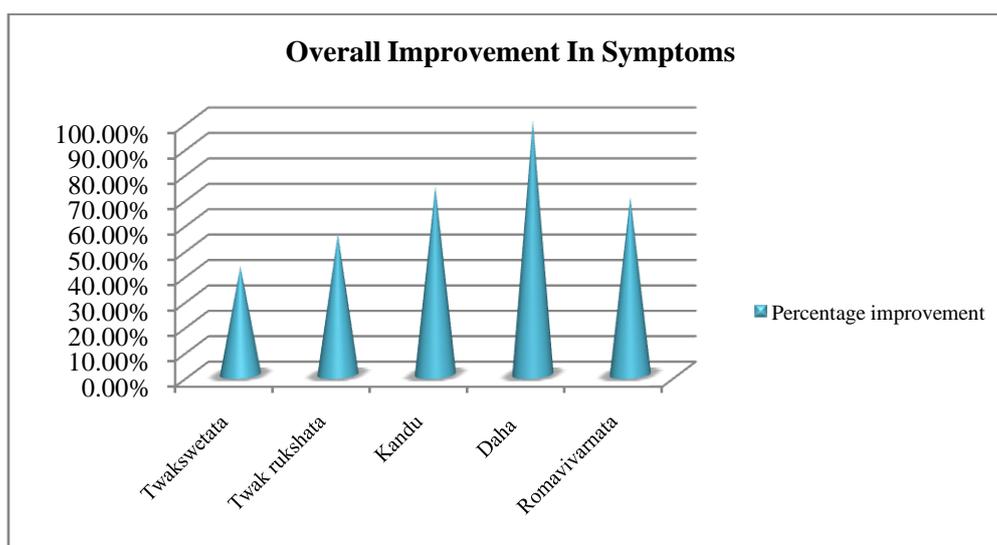
5	Romavivarnata	7	0.63	0.19	0.60	0.11	2.4433	<0.02	Significant
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Table 7: The effect of the therapy on repigmentation

S. No	Characteristics	No. of Observations	Mean Score		SD	SE	t	p	Remarks
			BT	AT					
1	Repigmentation	30	0.00	1.90	1.83	0.33	5.6990	<0.0001	Extremely Significant

Table 8: Percentage of overall improvement in each ailment after treatment in 30 patients with respect to assessment criteria

Ailment	Percentage improvement
Twakswetata	42.49%
Twakrukshata	55.22%
Kandu	74.07%
Daha	100%
Romavivarnata	69.84%



Discussion on mode of action of internal medication

The decoction of *Amalaki* contains the compounds which have the dyeing action. It contains tannins- gallic acid & ellagic acid. *Amalaki* being, *Alavana pancha rasa*, *Sita virya* and *Madhura vipaka* acts as *Tridosahara*. Due to *Rasayana* and *Vayasthapana* property leads to formation of *Prasastha dhatu* which slows down the degeneration of cells and regenerates new cells as well. Even it has *Kushthagna* property. *Switra* being an auto-immune disorder. The potent immune modulator *Amalaki* present in *Dhatryadi yoga* acts against the Auto-Immune Mechanism in which antibodies against melanin were proved to be isolated from the serum of Vitiligo patients..

Khadira is having *Tikta*, *Kashaya rasa*, *Sita virya* which alleviates *Pitta kapha*. Caraka acharya mentioned it as best *Kustahara dravya* in *Agraprakarana*. It has also the properties of *Switraghna*. *Kandugna*, *Kustagna*, *Krimihara*. The decoction has the important ingredients like catechin (flavonoid), catechu tannic acid and tennis. There by *Khadira* helps for better absorption.

Bakuchi is having *Madhura*, *Tikta*, *Katu*, *Sitavirya*, *Tridosahara*. *Twachya*, *Kushthahna*, *Rasayana*, *Switragna*, *Krimigna*^[11]. As per modern aspect *Bakuchi* has the effect on Ronget"s cell and melanoblast cells of skin. It stimulates melanocytes for the production of melanin. *Bakuchi*

contain several types of Furocaumarins precursors such as psoralin. Furocaumarins are primary photodynamic agents. They absorb long wave ultraviolet radiations after exposure to sun light and Become photoactive^[12,13].

Dhatryadi yoga having *Amalaki*, *Khadira* and *Bakuchi* as *Kushthahna*, *Switraghna* property. Along with this *Amalaki* and *Khadira* have *Vyadhipratyanik* effect and *Bakuchi* being the main drug of choice in *Switra* added with *Amalaki* which imparts the dye and *Khadira* helps in better absorption. Apart from above properties all the three drugs have *Rasayana* effect which can maintain the healthy status of *Dhatu*.

External application effect

Aparajitha katu, *Tikta*, *Kashaya rasa*, *Laghu*, *Ruksha guna*, *Sita virya*, *Katu vipaka*, *Tridosahara*, *Vishagna*, *Kushthagna*, *kandugna*. As *Switra* is a *Pitta pradhana tridoshaja Vyadi*, there is involvement of *Bhrajaka Pitta* which is said to be located in external skin (*Bahya Twak*) and responsible for color of different parts of the body.

It is responsible for digestion, metabolism and absorption of the substances which are applied over the skin. In general, it could be assumed that *Bhrajaka Pitta* is

a substance which is responsible or related with Pigmentary system of the body. While describing about location of *Pitta*, *Sushruta* used the term *Bhrajaka Agni* in place of *Bhrajaka Pitta* and said that it is responsible for metabolism or utilization of the substances, used as external application. Acharya *Sushruta* said that *Abhyanga*, *Parisheka*, *Lepana* & *Avagahana* like external applications are digested by the *Bhrajaka Pitta* and produces its effect over the skin.

Combined effect of both internal and external medicines

The drugs that are administered internally (*Dhatryadi kwatha*) are digested by the *Agni* and with the help of *Vyana vayu* are carried through the *Tiryak Dhamanies* towards *Twak (Switra)* to produce their action internally and the external application (*Aparajitha lepa*) are digested by the *Bhrajaka Pitta* to produce their action over *Twak (Switra)* externally. Hence both internal as well as external therapies have worked combinedly.^[4]

Limitations

1. The first limitation is relatively small sample so further study is necessary to evaluate the effect of the management in a large sample with long duration
2. The study has been done as a whole on *Switra* but it would better to do further study with the same combinations on various types of *Switra*.
3. Here the study included both internal and external application, so another study is needed to compare the efficacy of both the *Yogas* alone.

CONCLUSION

Vitiligo is a common puzzling disorder of great socio-medical importance characterized by hypo pigmented and/or depigmented milky white or ivory white macules on the skin, resulting from the loss of cutaneous melanocytes. It affects approximately 1-4% of world population in both sexes equally.

As per the general principal of treatment for this disease, repeated application of *Shodana karma*, *shaman karma* as well is beneficial. But *Sodhana* being difficult to perform in children. So shaman therapy is under taken. Many Ayurvedic medicines both internal and external are known to regenerate melanocytes, among one is *Dhatryadi Kwatha* and *Aparajitha Lepa* which were said in our classics. The present study is to prove the efficacy of the above mentioned *Yoga*. The given treatment is efficacious, repigmentation was seen in overall of 42.49%, Considerable improvement in *Romavivarnatha* (69.84%) is observed, *Kandu* and *Twakrukshata* has a result of 74.07% and 55.22% respectively. *Daha* symptom which was seen in two persons has been relieved completely. Out of 30

patients 20% had no reappearance of lesions during the study period.

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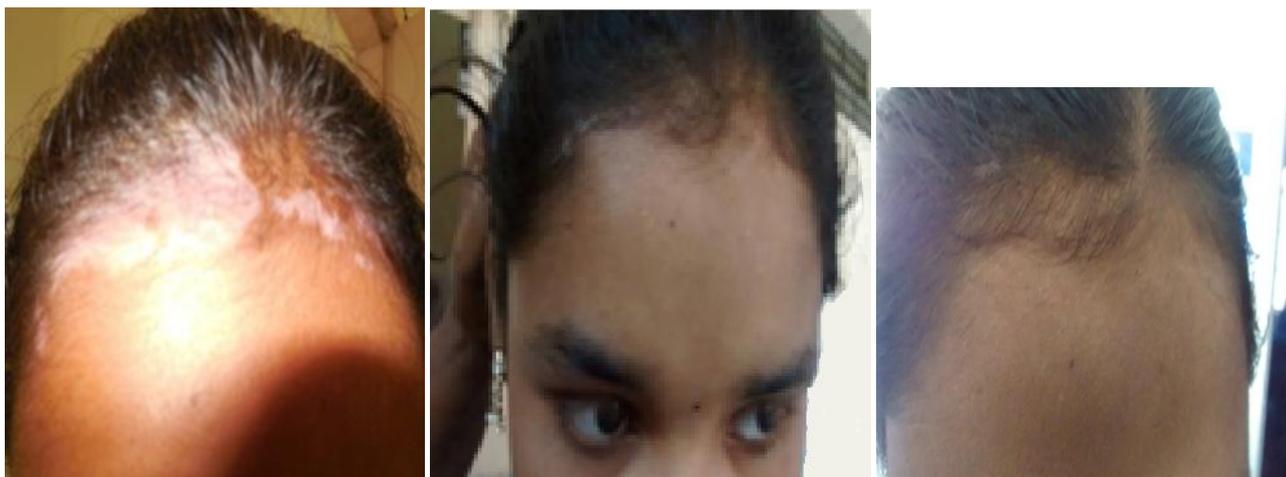
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Colour Plate -1: Switra cases before & After Treatment

Case no: 1



Case no: 2



Case no: 3



Case no: 4

