

## A COMPARITIVE STUDY OF AVALGUJADI LEPA AND ARKAKSHEERADI LEPA AFTER PRACHANNA IN THE MANAGEMENT OF SHWITRA W.S.R TO VITILIGO

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Article Received on  
31 Aug. 2021,

Revised on 21 Sept. 2021,  
Accepted on 11 Oct. 2021

DOI: 10.20959/wjpr202113-21894

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### ABSTRACT

*Shwitra* is one of the chronic skin condition explained in the 3<sup>rd</sup> stage of *Kilasa Kushta*. It is characterized by the appearance of *Shweta mandala*. Details about the disease are very less in the classics. The clinical presentation of the disease is similar to Vitiligo in the modern science. Vitiligo is characterized by the appearance of Chalky white macules over the skin. Several treatment techniques are explained for vitiligo but none of the techniques are effective in this condition. In *Ayurveda*, Several *lepa yogas* are explained but most of the *yogas* contain *Bakuchi* as main ingredient. These *yogas* are very effective in repigmentation of skin but it causes blister formation, ulcer formation. To overcome these complications present study has been conducted. A

total of 40 patients were randomly allotted into 2 groups namely Group A with standard drug i.e *Avalgujadi Lepa* after *Prachanna karma* and Group B with trail drug i.e *Arkaksheeradi Lepa* after *Prachanna karma* with 20 patients in each group. Assessment was made on subjective parameter like *Kandu* and objective parameters like *Mandala* & Size of the lesion. Observations were made before and after the treatment. Assessment of *Kandu*, *Mandala* & Size of the patch in Group A showed 100%, 55.31% & 26.56% improvement & In Group B

100%, 55.31% & 31.14% improvement respectively. The study showed that trail drug was more effective than the standard drug in the treatment of *Shwitra*.

**KEYWORDS:** *Shwitra*, Vitiligo, *Avalgujadi Lepa*, *Arkaksheeradi lepa*, *Prachanna*.

## INTRODUCTION

Skin is the largest organ in the body. Beauty and attraction of an individual is depends upon the healthy skin. The healthy skin serves as a boundary between ourselves and the outside world, when strangers meet us. According to *Ayurveda Prana Vata*<sup>[1]</sup> & *Bhrajaka pitta*<sup>[2]</sup> resides in skin and their imbalance may cause skin diseases in which *Shwitra* is one among them. *Shwitra* is the common skin disease described in varieties of *Kilasa Kushta*.<sup>[3]</sup> It is one among the *Rakta pradoshaja vikaras*.<sup>[4]</sup> It is characterized by *Shweta mandala* & *Kandu*.<sup>[5]</sup> *Shwitra* can be correlated with Vitiligo which is common skin disorder of unknown etiology.

Normal skin colour mainly depends upon melanin pigment. It is disorder of skin pigmentation in different patterns, varying from small macules with scalloping borders to near-total depigmentation of body.<sup>[7]</sup> The disorder affects nearly 1%-2% of the world population. The prevalence of Vitiligo has been invariably reported between 0.25% and 4% of dermatology outpatients across studies from India and up to 30% of patients are having positive family history.<sup>[6]</sup>

This may be hereditary, medicine originated, auto immune & side effects of radiation or chemotherapy. People who develop Vitiligo usually first notice white patches or spots on their skin. These patches are more obvious in sun exposed areas like hand, feet, face, lips.<sup>[8]</sup>

Management of vitiligo includes topical steroids, topical photo chemotherapy, topical immune modulators, mini grafting, laser and depigmentation techniques.<sup>[9]</sup>

Topical preparations of immune suppressing medications are the first line of treatment but it is more effective on small, newly depigmented areas. Photo chemotherapy and PUVA therapy are having longer duration of time may be 2 or more than 2 years with continues therapy. Due to these reason patients may get frustrated and discontinue the treatment. Moreover it is having some additional symptoms and side effects like gastric discomfort, cutaneous photosensitivity reaction, sunburn, burning, itching. Mini grafting techniques are time consuming, requires serial procedures, not suitable for the face. Split Thickness Grafts requires skillful and experience surgeon but later colour mismatch can occur. In Suction

blister grafts, Large areas cannot be treated and also donor site blistering requires a few hours. Though Laser therapy is safe & effective in Vitiligo, cost of this treatment is very expensive. Depigmentation techniques sometimes cause Cutaneous reaction and severe sunburn. The drawbacks of those treatments are cost expensive, hospital stay and recurrence.<sup>[10]</sup>

*Acharya Vagbhata explained Avalgujadi lepa<sup>[12]</sup> in Shwitra. Avalgujadi lepa contains tikta pradhana dravyas which causes ama pachanna & pitta dosha shamana.*

According to *Rasendra sara sangraha*, *Arkaksheeradi lepa<sup>[13]</sup>* after *prachanna* is advised in *shwitra*. *Prachanna* expells localized vitiated doshas. *Katu & Tikta rasa* of *Arka & Lavana rasa* of *saindhava* *lavana* may removes the *srotoavarodha*. *Arka* is specially being the *lekhana dravya* helps in the scraping the superficial layer of skin. Further *ushna veerya* of the drug may accelerate the pigmentation process.

This *yoga* is cost effective and can be prepared & applied easily, so in this study effects of *Arkaksheeradi lepa* is compared with the standard *Avalgujadi lepa* in *Shwitra*. Thus the topic is entitled as “**A COMPARITIVE STUDY OF AVALGUJADI LEPA AND ARKAKSHEERADI LEPA AFTER PRACHANNA IN THE MANAGEMENT OF SHWITRA W.S.R TO VITILIGO**”

## OBJECTIVES

- To compare the efficacy of *Arkaksheeradi lepa* with standard *Avalgujadi lepa* in the management of *Shwitra*.

## MATERIALS AND METHODS

### ➤ Drug source

Required raw materials for the preparation of *Avalgujadi lepa* and *Arkaksheeradi lepa* were collected from GMP certified company. Necessary processing of the raw materials and preparation of *Arkaksheeradi lepa* were done in PG department of *Rashasastra* and *Bhaishajya kalpana* department T.G.A.M.C &H Ballari.

### ➤ Clinical source

A total of 40 patients presenting with features of *Shwitra* mentioned in inclusion criteria were included in this study.

### ➤ Inclusion Criteria

- Patient suffering from classical features of *Shwitra* are included.
- Age group of 16 – 60 years irrespective of sex, religion, occupation of the patients.

### Exclusion criteria

- Onset of disease more than one year will be excluded.
- Burnt areas
- Lesions present over the lips, genital areas, fingers of hand, feet and face
- Size of the lesion more than 2.5x2.cm are excluded
- Patient suffering from bleeding disorders
- Pregnant women and lactating women
- Patient suffering from any systemic diseases like Diabetes mellitus, hypertension, leprosy.
- Associated with other skin diseases

**Laboratory Investigation:** Hb%, CT, BT, RBS, ESR, HIV I & II, HBsAg

### Study Design

| Group   | No of Patients | Intervention   |
|---------|----------------|--|
| Group A | 20             | <i>Avalgujadi lepa</i> followed by <i>Prachanna</i>    |
| Group B | 20             | <i>Arkaksheeradi lepa</i> followed by <i>Prachanna</i> |

### Arkaksheeradi Lepa

| Sl. no | Drug name               | Botanical Name             | Part used | Quantity |
|--------|-------------------------|----------------------------|-----------|----------|
| 1.     | <i>Arkaksheera</i>      | <i>Calatropis gigantia</i> | Ksheera   | 1 part   |
| 2.     | <i>Saindhava lavana</i> | Rock salt                  | Salt      | 1 part   |

### PLAN OF TREATMENT

#### ➤ TOTAL STUDY DURATION

- Treatment duration: 28days.
  - Follow up : 1 Month
  - Total study duration : 1 month 28days
- Selected 40 patients of *Shwitra* are randomly divided into Group A and Group B containing 20 patients in each group.

**Table 1: Showing Intervention Plan in Group A.**

|                        |                  |            |
|------------------------|------------------|------------|
| <b>Prachanna</b>       | Once in a week   | 4 sittings |
| <b>Avalgujadi Lepa</b> | Daly application | 28 days    |

After 28 days changes are recorded.

**Table 2: Showing Intervention Plan in Group B.**

|                           |                   |            |
|---------------------------|-------------------|------------|
| <b>Prachanna</b>          | Once in a week    | 4 sittings |
| <b>Arkaksheeradi Lepa</b> | Daily application | 28 days    |

After 28 days changes are recorded.

## PROCEDURE

- The part was cleaned with normal saline
- Using surgical blade no 11 superficial multiple incisions were given from lower end to the upper end of the lesion.
- The site of *Prachanna* was cleaned with sterile gauze.
- Prepared lepa was applied over the site of *Prachanna*.
- Patient was made to expose the part in sun rays for 30 minutes.

**DIAGNOSTIC CRITERIA:** Subjective parameters like *Mandala* & *Kandu* and Objective parameters like Size of the lesion are used.

**Assessment Criteria:** The patient's response was assessed based on subjective and objective parameters.

**Table 3: Parameters.**

| Grade | Kandu   | Mandala            | Size of patches |
|-------|---------|--------------------|-----------------|
| 0     | Absent  | Normal Skin Colour | ---             |
| 1     | Present | Red Colour         | 0.5 - 1 CM      |
| 2     |         | White Colour       | 1 - 1.5 CM      |
| 3     |         |                    | 1.5 - 2 CM      |
| 4     |         |                    | > 2 CM          |

**Observations:** The present study revealed that incidence of shwitra was more common in 36-45(47.5%) years of age. 62.5% patients were male. 92.5% patients were Hindu. 60% patients were belonged to middle class. 67.5% patients were Moderate workers.

## RESULTS

The assessment parameters like *Mandala* & Size of the patch were subjected to **Wilcoxon Signed Rank Test** to compare the mean rank within the group and **Mann Whitney U test** to compare the Mean Rank difference Values between the groups & draw conclusion. The assessment parameter like *Kandu* was subjected to **McNemar's Test** to compare the mean rank within the group and **Fisher Exact test** to compare the mean rank difference values between the groups & draw conclusion.

**Table 4: Effect of treatment in Group A.**

| Group A | BT   | AT   | %     | S.D   | WSRT Value | Z-Value | P-Value |
|---------|------|------|-------|-------|------------|---------|---------|
| MANDALA | 2.35 | 1.05 | 55.31 | 0.865 | -210.00    | -4.472  | <0.001  |
| KANDU   | 0.25 | 0.00 | 100   | --    | --         | --      | <0.063  |
| SIZE    | 3.20 | 2.35 | 26.56 | 0.587 | -120.00    | -3.690  | <0.001  |

**Table 5: Effect of treatment in Group B.**

| Group B | BT   | AT   | %     | S.D   | WSRT Value | Z-Value | P-Value |
|---------|------|------|-------|-------|------------|---------|---------|
| MANDALA | 2.35 | 1.05 | 55.31 | 0.865 | -210.00    | -4.472  | <0.001  |
| KANDU   | 0.10 | 0.00 | 100   | --    | --         | --      | <0.500  |
| SIZE    | 3.05 | 2.10 | 31.14 | 0.394 | -171.00    | -4.146  | <0.001  |

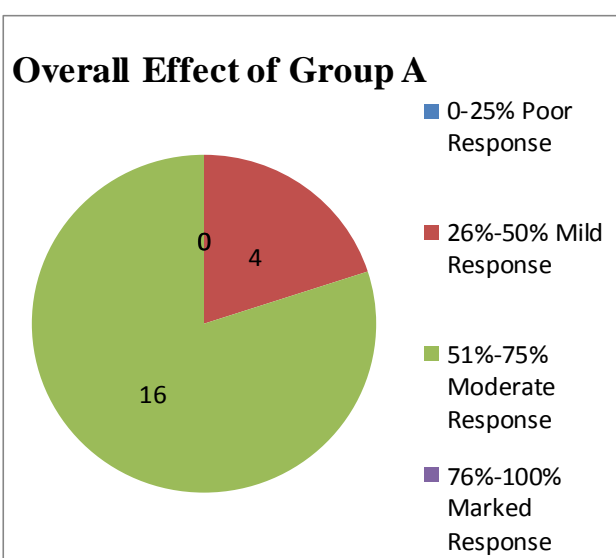
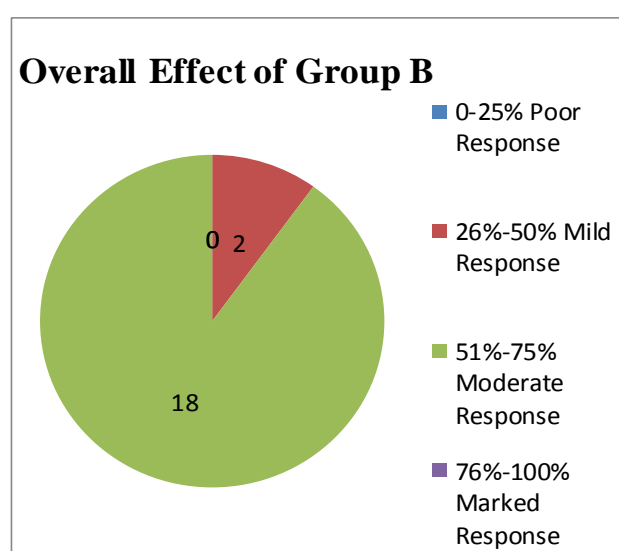
**Table 6: Comparative Effect of Group A & Group.**

| PARAMETERS | BT-AT   |         | T- Value | P Value | Remarks |
|------------|---------|---------|----------|---------|---------|
|            | GROUP A | GROUP B |          |         |         |
| MANDALA    | 1.000   | 1.000   | 410.000  | 1.000   | N.S     |
| SIZE       | 1.000   | 1.000   | 390.500  | 0.497   | N.S     |

| PARAMETER | Test value | df | P-value | Remarks |
|-----------|------------|----|---------|---------|
| KANDU     | 0.741      | 1  | 0.447   | NS      |

**Table No 7: Overall effect of Group A & Group B.**

| Effect of Treatment |                   |                           |                           |
|---------------------|-------------------|---------------------------|---------------------------|
| Class               | Grading           | No of patients in Group A | No of patients in Group B |
| 0-25%               | Poor Response     | 0                         | 0                         |
| 26%-50%             | Mild Response     | 4                         | 2                         |
| 51%-75%             | Moderate Response | 16                        | 18                        |
| 76%-100%            | Marked Response   | 0                         | 0                         |

**Graph No 1: Results on Group A.****Graph No 2: Results on Group B.**



**Figure 1: Before Treatment****Figure 2: After Treatment****Figure 3: Before Treatment****Figure 4: After Treatment**

## DISCUSSION

Shwitra is one among the varieties of *Kilasa kushta*. According to *Acharya Charaka*, *Shwitra* is final stage of *kilasa kushta* in which the aggravated *kapha dosha* takes *sthana samshraya* in *medo dhatu*. *Sushruta* clearly says that when the aggravated doshas present in *twak* it is called as *kilasa* but when these *doshas* invades into deeper *dhatu*s its called as *Shwitra*. The clinical presentation of the disease *Shwitra* is almost similar to the clinical presentation of Vitiligo. In which Appearance of Whitish macules are seen in both *Shwitra* & Vitiligo.

**Effect on Kandu:** In Group A some patients had itching sensation soon after removal of *Avalgujadi lepa* which lasts for about 30-40 minutes. Itching was completely absent in Group B. there was 100% relief in both the Group A & Group B.

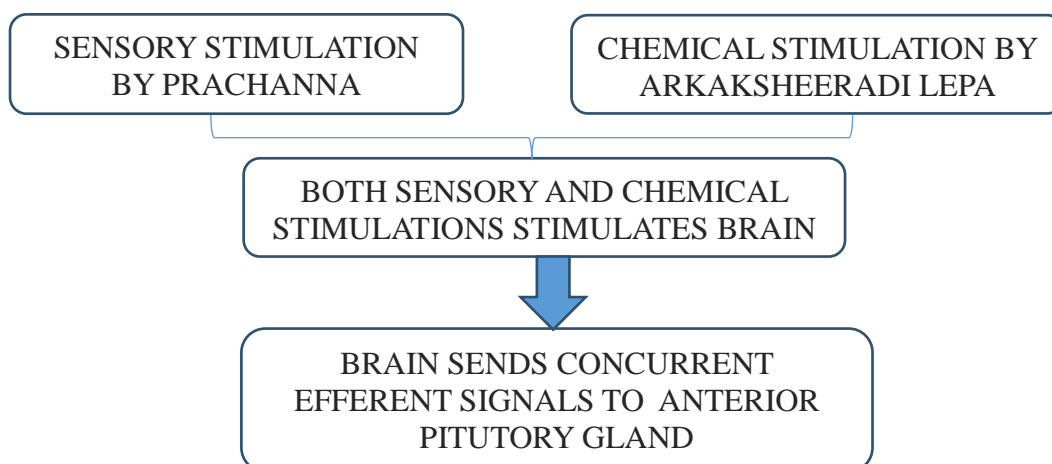
**Effect of Treatment on Mandala:** The colour of lesion was white before the treatment but it becomes reddish after completion of the 28 days treatment. None of the lesions turns back to its normal colour of skin or black colour. In maximum number of patients, we observed the appearance of multiple small black dots which is increasing in its size & number in every sitting. So we can consider these changes as positive sign of treatment.

**Effect of Treatment on Size of the lesion:** Since the duration of the study was limited to 28 days, slight changes are noticed in the size of the lesion.

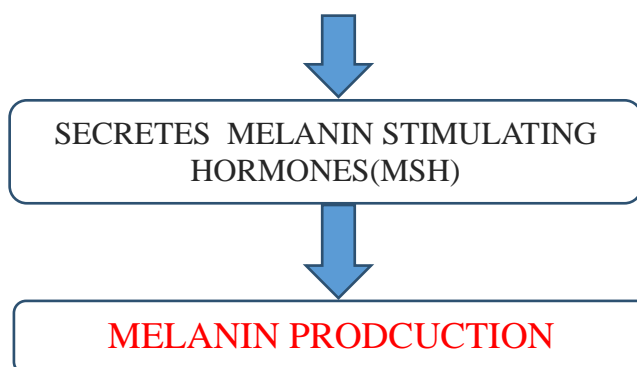
### Probable Mode of Action

- *Prachanna* expelles localized vitiated *rakta* and also it stimulates the accumulation of Mast cells at the site & helps in improvement of circulation.
- *Prachanna* causes damage of superficial layers of skin thus helps in rapid penetration of drugs.
- *Avalgujadi lepa* contains *tikta pradhana* dravyas these causes *Ama pachana* and pacify *pitta dosha*.
- All these drugs present in this *lepa* has *Vata-kapha nashaka* property, as these drugs has anti-inflammatory and immune modulating property application of this lepa stimulates melanocyte formation.
- *Arkaksheeradi lepa* contains *Arka* & *Saindhava*. *Katu* & *Tikta rasa* of *Arka* and *Lavana rasa* of *Saindhava* removes the *Srotoavarodha* caused by dominant *Kapha dosha*.
- *Arka* is specially being the *Lekhana dravya* helps in Scraping the superficial layer of the epidermis leading to production of new skin layer, further *ushna veerya* of the drug.
- *Snigdha guna* of *Saindhava lavana* helps in stimulation of localized *Bhrajaka Pitta*.

Exposure to Sun light accelerates the pigmentation process.







## CONCLUSION

- Acharya Charaka described *Shwitra* after explaining the *Kushta* with *chikitsa* in detail. *Chikitsa* of *Shwitra* consists both *Antha parimarjana* and *bahi parimarjana*. *Bakuchi* is the main ingredient of almost all the *yogas* in *Shwitra chikitsa* as per the classics. As it causes some discomfort during treatment, it is necessary to try with yoga devoid of *Bakuchi*.
- The parameters of assessment i.e *Kandu* (Group A 100%, Group B 100%), *Mandala* (Group A 55.31%, group B 55.31%) & Size of the lesion (Group A 26.56%, Group B 31.14%) showed statistically significant improvement during the observation period.
- Over all relief in group A is 60.62% & in Group B is 62.15%.
- Drugs of *Arkaksheeradi lepa* are easily available throughout the country.
- The method of preparation of *Arkaksheeradi lepa* is simple compared to *Avalgujadi Lepa*.
- None of the patients were complained about the blister formation, ulcer formation after the application of *Arkaksheeradi lepa* as it is the main drawback of the *Avalgujadi lepa*.
- Instead of complete repigmentation, multiple small blackish dots are observed in the patients which is increasing in its size and number in every sitting.
- Both the *lepas* are more effective in the management of *Kandu*.
- ✓ *Arkaksheeradi lepa* after *Prachanna* is more effective than the *Avalgujadi lepa* after *prachanna* in the management of *Shwitra* w.s.r *Vitiligo*.

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