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# Dusting Powder Of Shirisha [Albizia Lebbec Linn] Twak In Wound Management

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## ABSTRACT

Any kind of destruction / break / rupture / discontinuity of body tissue/part of the body is called *Vrana. Vrana* which doesn't heal in its natural course of healing time is said to be *Dusta Vrana* along with other pathological manifestations further.

*Acharya Susruta* explains, when a person does not have control over his *indriya's* and follows *Apathyaja ahaar ,vihar* with untimely treated wound leads to severe vitiation of *Doshas* forming *Dushta Vrana*. In classics it's been widely explained about the *chikitsa* of *Vrana*. Considering clinical features of *dusta vrana* and cause here the correlated with non healing ulcer.

The Chronic non healing ulcer are the ulcers that have failed to progress through a time. Sequence of repair, or one that proceeds through the wound healing process without restoring anatomic and functional results.

According to modern science, steroidal management is being practiced to treat the ulcer, but there are very high chances of re occurrence of ulcer again.

To overcome this we can go with Ayurvedic management with *shirisha twak churna* [Albezzia lebbac] which is having the properties like *vishagna ,kandugna ,kushtagna , charmarogahara , varnya karma* and having chemical compositions like *saponins,tannins, d catechin, d- leucocyanidin.*

Hence it's time to apply *Ayurvedic* type of treatment in order to treat the ulcer completely

Key words: Shirisha, Dushta Vruna, Vishagna, Agad

## INTRODUCTION

The life starts with the cutting of umbilical cord. So, treatment for healing of the wound is of prime importance.*Dushta Vrana* is a commonly encountered problem faced in surgical practice. In India, a recent study estimated a prevalence rate of chronic wounds at 4.5 per 1000 population.

The incidence of acute wounds was more than double at 10.5 per 1000 population. Five year mortality rates for new-onset ulcers and after amputation have been reported to be as high as 55% and 74% respectively .The etiology of these wounds included systemic conditions such as diabetes, atherosclerosis, tuberculosis, leprosy, venous ulcers, pressure ulcers and trauma.

*Dushta Vranalakshanas* are *Samruta* (Narrow mouthed), *Kathina*(Hard), *Avasanna*(Depressed),*Vedonarvana*(Severepain),*Vivruta*(Widemouthed),*Ushna*(Hot*),Daha*(Burningsensation),*Paka*(Suppuration),*Raga*(Redness),*Puyasravya*(Dischargingpus),*Manojnadarshana*(Withuglysight),*Kandu*(Itching),*Shopha*(Swelling),*Pidaka*(Withboils),*Mrudu*(Soft),*Bhairava*(Frightful), *Putimamsasirasnayu* (Full of pus, muscles, vessels, ligament).

Chronic ulcers or non-healing ulcers are defined as spontaneous or traumatic lesions, typically in lower extremities that are unresponsive to initial therapy or that persist despite appropriate care and do not proceed towards healing in a defined time period with an underlying etiology that may be related to systemic disease or local disorders.

As wound formation is chronic in nature, *Acharya charaka* said that the chronic wound is to be treated with *agada aushadis*. Hence *shirisha* being best *agada aushadi* for wound healing compared to other drugs is being selected.

Last year study revealed that bark extract of albezzia lebbac i.e *shirisha twak* possess significant antimicrobial activity against staphylococcus aureus, The drug *Shirish twak* extract at 100mg concentration has shown maximum inhibition of 17mm and for 75mg and 50mg concentration 13mm inhibition against Staphylococcus aureus bacteria. Hence this time we are performing clinical trial in which *shirisha* dust is selected.

## AIMS AND OBJECTIVES

1.To study in detail about *shirisha* [Albezzia lebbac]

2.To study in detail about *Dusta vruna*

3.To know the effect of *shirisha* dust against wound

## MATERIALS AND METHOD

**TYPE OF STUDY :** CLINICAL STUDY

**a .Drug source** :

1. Collection of drug *shirisha* from the campus of SNVV'S SGVAMC Bailhongal, and drug authentification is taken from Department of Dravyaguna of SNVV'S SGVAMC Bailhongal.

2. Drying the bark in shadow place

3. Pounding the dried bark in *khalva yantra*

4. Grinding further in pulverizer for fineness of *churna*

5. Shirisha churna is passed through sieving mesh of number 120, in Rasa Shastra and Bhaishajya kalpana department of SNNVV'S Ayurvedic Meidcal College, hospital and Research Centre Bailhongal.

6. The prepared drug is stored in air tight container

7. Sent the sample drug for various quality control tests to MARATA MANDAL'S College of Pharmacy, BELGAUM.

**b.Clinical source** :

1. The patients attending OPD/IPD of SNVVS, SGV Ayurvedic college and hospital research centre, Bailhonga -591102l.

**C. Method of collection of data :**

It's a single blind clinical study, patients of non healing ulcer will be selected are included in a single group, and the results are recorded as per the Performa designed for the study.

Parameters of signs and symptoms were scored on the basis of standard method of grading. The obtained data will be subjected to statistical analysis

**D. selection of patients :**

Sample size -15

Duration of study -30 days

**Inclusion criteria :**

Age group of all ages

Non healing wound more than 7 days are taken for the study

**Exclusion criteria :**

Patient suffering from any other systemic illness like diabetic foot or gangrene etc

**Administration of drug :**

Dose : as required quantity of individuals

Method of application :

1. Wash the wound with Triphala kwatha
2. Dusting the Shirisha Twak Churna on the washed wound.
3. Cover the wound with sterile cotton pads.
4. Bandaging the wound

**Grading for assessing parameters**

**1.Pale granulation**

Grade 0 : absent

Grade 1 : one quarter of wound area

Grade 2 : one half of wound area

Grade 3 :two thirds of wound area

Grade 4 : complete wound area

**2.Serous discharge**

Grade 0: absent

Grade 1: at one point only

Grade 2: along wound

Grade3: large volume

Grade 4: prolonged

**3.Slough present**

Grade 0: absent

Grade 1: at one point

Grade2: around surfaces

Grade3: along wound

Grade4: around wound

**4.Presence of Purulent smell**

Grade0: absent

Grade1: mild

Grade2:moderate

Grade3:severe

Grade4:unbearable.

## RESULTS :

The subjective and objective parameters of patients were noted before and after the treatment, for statistical analysis Wilcoxon matched pairs test was applied to all the parameters.

**Table 1: Comparison of different time points with status of Pale granulation by Wilcoxon matched pairs test**

| Time | Mean | SD | Median | IQR | % of change | Z-value | p-value |
|---|---|---|---|---|---|---|---|
| 1st day | 3.5 | 0.5 | 4.0 | 1.0 | | | |
| 8th day | 2.5 | 0.5 | 3.0 | 1.0 | 28.3 | 3.4078 | 0.0007* |
| 1st day | 3.5 | 0.5 | 4.0 | 1.0 | | | |
| 15th day | 1.4 | 0.5 | 1.0 | 1.0 | 60.4 | 3.4079 | 0.0007* |
| 8th day | 2.5 | 0.5 | 3.0 | 1.0 | | | |
| 15th day | 1.4 | 0.5 | 1.0 | 1.0 | 44.7 | 3.4079 | 0.0007* |

*p<0.05

- A significant difference was observed between 1st day and 8th day with Pale granulation (Z=3.4078, p=0.0007). It means that, there is 28.3% changes in Pale granulation after 8th day
- A significant difference was observed between 1st day and 15th day with Pale granulation (Z=3.4079, p=0.0007). It means that, there is 60.4% changes in Pale granulation after 15th day
- A significant difference was observed between 8th day and 15th day with Pale granulation (Z=3.4079, p=0.0007). It means that, there is 44.7% changes in Pale granulation after 15th day

**Figure 1: Comparison of different time points with status of Pale granulation**

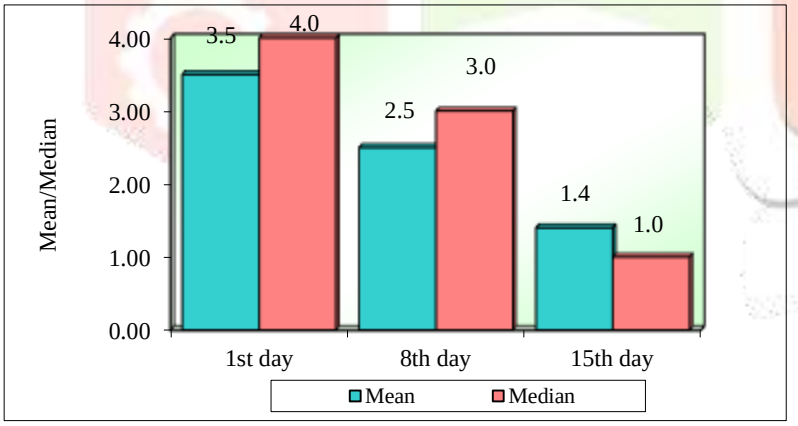


**Table 2: Comparison of different time points with status of serous discharge by Wilcoxon matched pairs test**

| Time | Mean | SD | Median | IQR | % of change | Z-value | p-value |
|---|---|---|---|---|---|---|---|
| 1st day | 3.1 | 0.6 | 3.0 | 0.5 | | | |
| 8th day | 2.1 | 0.6 | 2.0 | 0.5 | 31.9 | 3.4078 | 0.0007* |
| 1st day | 3.1 | 0.6 | 3.0 | 0.5 | | | |
| 15th day | 1.1 | 0.6 | 1.0 | 0.5 | 63.8 | 3.4080 | 0.0007* |
| 8th day | 2.1 | 0.6 | 2.0 | 0.5 | | | |
| 15th day | 1.1 | 0.6 | 1.0 | 0.5 | 46.9 | 3.4079 | 0.0007* |

*p<0.05

A significant difference was observed between 1st day [ with mean =3.1] ,8th day( with mean = 2.1)15$^{th}$ day (with mean = 1.1) serous discharge(Z=3.4078, p=0.0007*). It means that, there are 31.9% changes in serous discharge after 8$^{th}$ day and 63.8% on 15$^{th}$ day.

**Figure 2: Comparison of different time points with status of serous discharge**

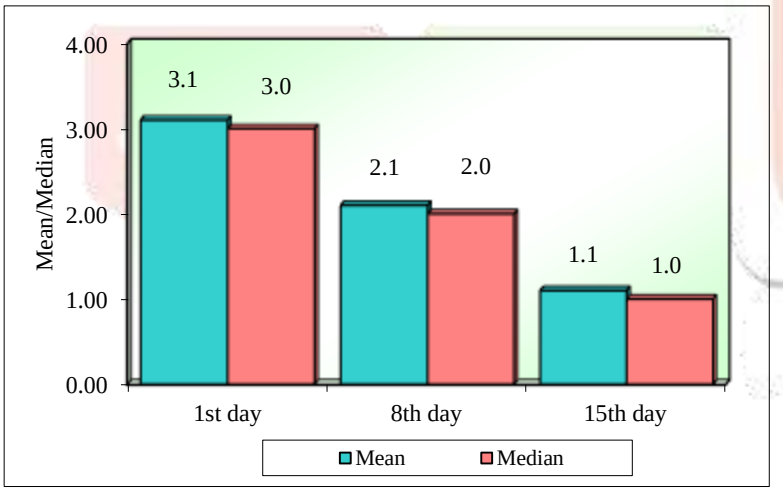


Table 3: Comparison of different time points with status of Slough present by Wilcoxon matched pairs test

| Time | Mean | SD | Median | IQR | % of change | Z-value | p-value |
|---|---|---|---|---|---|---|---|
| 1st day | 3.3 | 0.7 | 3.0 | 1.0 | | | |
| 8th day | 2.2 | 0.7 | 2.0 | 1.0 | 32.7 | 3.4078 | 0.0007* |
| 1st day | 3.3 | 0.7 | 3.0 | 1.0 | | | |
| 15th day | 1.2 | 0.7 | 1.0 | 1.0 | 63.3 | 3.4081 | 0.0007* |
| 8th day | 2.2 | 0.7 | 2.0 | 1.0 | | | |
| 15th day | 1.2 | 0.7 | 1.0 | 1.0 | 45.5 | 3.4079 | 0.0007* |

*p<0.05

A significant difference was observed between 1st day (mean=3.3) , 8th day(mean = 2.2) and 15$^{th}$ day (mean= 1.2)with slough formation (Z=3.4078, p=0.0007$^{*}$). It means that, there are 32.7% changes in slough formation after 8$^{th}$ day and 63.3% on 15$^{th}$ day.

**Figure 3: Comparison of different time points with status of Slough present**

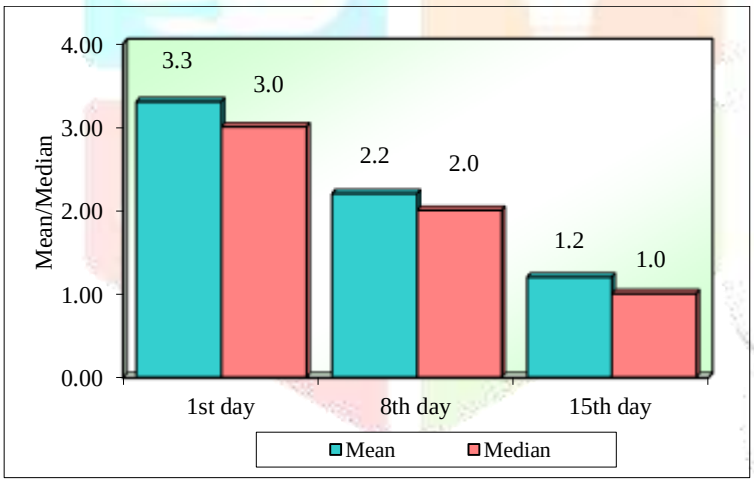



**Table 4: Comparison of different time points with status of Purulent smell by Wilcoxon matched pairs test**

| Time | Mean | SD | Median | IQR | % of change | Z-value | p-value |
|---|---|---|---|---|---|---|---|
| 1st day | 3.0 | 0.8 | 3.0 | 1.0 | | | |
| 8th day | 2.0 | 0.8 | 2.0 | 1.0 | 33.3 | 3.4078 | 0.0007* |
| 1st day | 3.0 | 0.8 | 3.0 | 1.0 | | | |
| 15th day | 1.0 | 0.8 | 1.0 | 1.0 | 66.7 | 3.4081 | 0.0007* |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8th day | 2.0 | 0.8 | 2.0 | 1.0 | 50.0 | 3.4079 | 0.0007* |
| 15th day | 1.0 | 0.8 | 1.0 | 1.0 | | | |

*p<0.05

A significant difference was observed between 1st day (mean= 3.2) , 8th day( mean = 2.2) and 15th day (mean= 1.8) with Purulent smell(Z=3.4078, p=0.0007*). It means that, there is 33.3.3% changes in Purulent smell after 8th day and 66% on 15th day.

**Figure4: Comparison of different time points with status of Purulent smell**

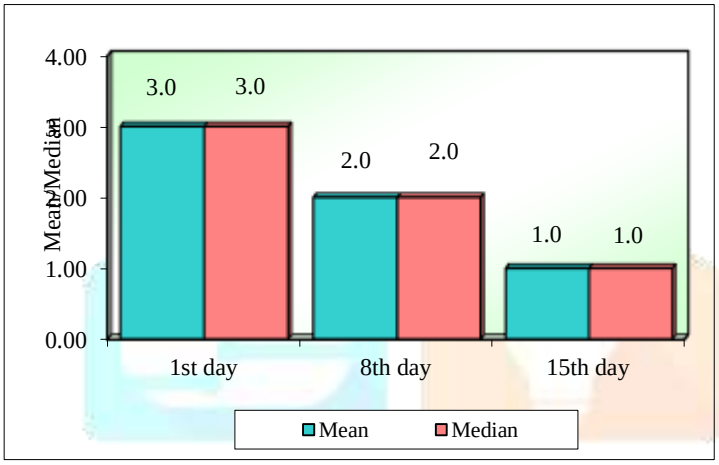
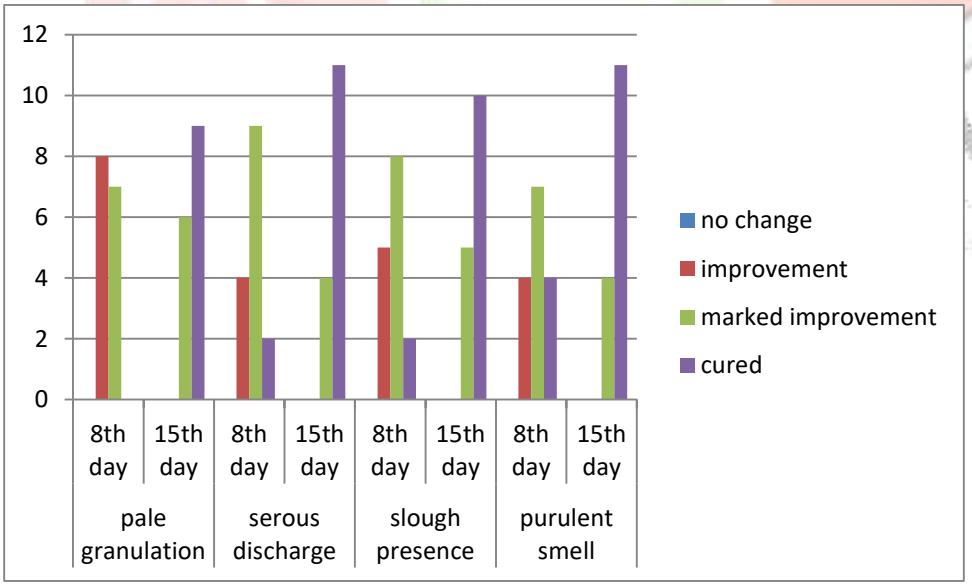



**Figure 5. Overall results of study.**




## DISCUSSION:

The intervention of *shirisha churna* is done on 15 patients and it's found highly significant in grade 1 and 2 patients Since the wilcoxon matched pair test is statistically highly significant, Hence application of shirisha twak churna is found to be highly significant.

## CONCLUSION

The findings of this study conclude that *shirisha churna* can produce significant changes in grade 1and 2 wounds and has shown a significant effect in pain, pus discharge and granulation of wound etc. The drug is easily available, easy to prepare, easy to use, easy to store. Fast acting and cost effective. It is odorless hence doesn't cause any uncomfortableness. Painless in action without any adverse effect.

ACKNOWLEDGEMENT

We extend our special gratitude to CCRAS SPARK for accepting this research proposal and granting the necessary funds for the current study.

## ANNEXURE:

## SHIRISH PLANT

WOUND BEFORE TREATMENT

APPLICATION OF SHIRISHA DUST ON WOUND

RESULTS AFTER APPLICATION OF CHURNA

FIG 2. PICTURE OF WOUND BEFORE TREATMENT

APPLICATION OF SHIRISHA CHURNA

AFTER TREATMENT IMAGE

FIG3: IMAGE OF WOUND BEFORE TREATMENT

APPLICATION OF SHIRISHA DUST

PICTURE SHOWING HEALED WOUND

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