

A Comparative Clinical Study of Tanakanaamruta Malahara and Povidine Iodine in the Management of DushtaVrana

¹Dr. Vanita Halli ²Dr. Chandrakanth Halli ³Dr. Ashok Naikar

⁴Dr. Vijaykumar Biradar

¹Final Year PG Scholar¹, Guide, Professor & HOD², Associate Professor^{3&4}, PG Department of Shalya Tantra, N.K.Jabshetty Ayurvedic Medical College and Research Centre, Bidar, Karnataka-585401

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ABSTRACT:

Dushta vrana is a condition that alters a man both physically mentally and disturbs his daily routine to a greater extent. Healing of wound is a natural process of body, but due to the interference of vitiated *doshas*, normal healing gets delayed more than 7 days, such condition is considered as *dushta vrana*. A clean wound in a normal body heals earlier with a minimum scar as compared to infected wound. So that *sushruta* has mentioned detailed description of wound and its management, and also many treatment modalities were explained by different acharyas among those *malahara* is a unique preparation of our science hence present study dealt with management of *dushta vrana* by *Tankanaamruta Malahara*.

OBJECTIVES OF STUDY:

1. To evaluate the effect of *Tankanaamruta malahara* in the management of *Dushta Vrana*
2. To compare the efficacy of *Tankanaamruta malahara* with respect to povidine iodine

Methods :

The results were selected in simple random processes according to inclusion criteria and divided into two groups, 20 each, Group –A trail group were treated by local application of *Tankanaamruta malahara* once daily. Group –B Control group were treated with Povidine iodine .

Results :

The results were assessed by required assessment criteria, which shows effect on *vedana* was 75.61% , effect on *srava* 75% , effect on *gandha* 77.5%, effect on *mamsankura* 74.36%, effect on *varna* 73.81%, effect on *parimana* 74.47%. This shows the effect of *Tankanaamruta malahara* is statistically significant In the processes of wound healing.

Interpretation and conclusion :

As this *Tankanaamruta malahara* has *vrana shodhana, ropana, krimighna, vedana sthapana, lekhana, vishaghna, tridosahara* all these quality of drug might have accelerated the healing process removing all such factor of *dushta vrana*.

KEY WORDS : *Dushta vrana , tankanaamruta malahara, povidine iodine*

INTRODUCTION:

Ayurveda is the most ancient system of Indian medicine in the world, which is divided into 8 branches¹ among that *shalya tantra* has wide scope in the management of *vrana*, so *Acharya sushruta* has mentioned *Vrana vinischayartham*² as a major part of *shalya tantra*.

Wound healing is being a major problem from ages in surgical practice, even though healing of *vrana* is a natural process of the body the *vrana* should be protected from *dosha dushti* and from various micro-organisms, which may afflict the *vrana* and delay the normal healing process so for the early and uncomplicated healing of *vrana*, treatment is necessary.

All types of *shalya* and *shastra karma* ultimately result into *vrana* formation, detail description is available in the *brahatrayees* and *laghutrayees*.

Ayurveda is a science of life than only a medical science gives more importance to preventive measures and complete curing of a disease with a minimum chance of recurrence.

Vrana means discontinuity or break in the part of body or tissue.

Wound and ulcer both are synonymously used. but wound is

defined as ,break in the integrity of skin or tissue ,which may be associated with disruption of the structure and function³.

Where an ulcer is a break in the continuity of covering epithelium either skin or mucus membrane due to molecular death⁴.

Here *dushta vrana* is a condition that alters man both physically and mentally and disturb his daily routine to a greater extent.

As the allied science advanced newer remedies are tried out of speedy recovery, like Dressing, bio debridement, enzymatic debridement, negative pressure therapy ,maggot therapy ,topical application of collagen, insulin , oxygen therapy, stem cell and gene therapy, etc. but the oldest remedies still lead the race.

Wound healing procedures explained by *Acharya sushruta* still holds primary place till today, he explained *shashti upakrama*⁵ elaborately describes the treatment of *vrana* from its early stage of vitiation of *doshas* to total recovery in which he described on bringing back the site of wound to normalcy by the procedure *vaikrutapaha*⁶ (which can be correlated with initiation of plastic surgery)

"A Comparative Clinical Study of Tanakanaamruta Malahara and Povidine Iodine in the Management of DushtaVrana"

Management of wound mainly divided into *Shodhana* (purification therapy) and *Ropana* (local application)which helps to heal the wound faster without any complication, Topical application of *Ghrita, Taila, Lepa* drugs in other form of *malahara*, is a unique preparation of our science which is very comfortable for the patient to apply, one such *Tanakanaamruta malahara* has manly highlighted by *Rasa Tarangini*⁷.

Hence the clinical study on 40 patients of *dushta vrana* attending the opd and ipd of N.K.J Ayurvedic medical college.Bidar, Karnataka attached shri siddharoodha charitable hospital has been undertaken to manage the *dusta vrana*, out of 20patients were treated by *tankanaamruta malahara* as trial group, and where as 20 patients were treated with povidine iodine as control group are employed.

MATERIALS AND METHODS

In this clinical trial 40 diagnosed patients of *Dushta vrana* were selected based on selection criteria randomly from OPD of Sri Siddharudha Charitable Hospital, Bidar, Karnataka.

SELECTION CRITERIA.

Inclusioncriteria :

1. Specific signs and symptoms of *dusta vrana (durgandha yukta puti*

puya, vedana, daha, paka, raga, kandu, dusta shonita shrava, Dirghakalanubandhi)

2. Patients were selected irrespective of sex, age, religion, occupation, economic and education status .
3. Size of ulcer within 10 cm.
4. Post operative infected wound.
5. Traumatic infected wound.
6. Non specific ulcers eg-venous, arterial, infective ulcers.

Exclusion criteria :

1. Ulcer more than 10 cm size.
2. Malignant ulcer, Marjolin's ulcers, bhagandara, nadi vrana.
3. Ulcer associated with chest injury and head injury.
4. Ulcer associated with diseases like diabetes, HIV, HBsAg, Leprosy tuberculosis, syphilis, osteomyelitis.
5. Multiple ulcers.

SAMPLING TECHNIQUE

A Total number of 40 patients were signs and symptoms of *Dushta vrana* were registered and randomly divided into two groups.

GROUP -1 : TRIAL GROUP :-

The patients of this group were applied by *Tankanaamruta malahara* once in a day, and properly bandaged daily for 28 days .

GROUP-2 : CONTROL GROUP :-

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The patients of this group were applied Povidine Iodine once in a day and properly bandaged daily for 28 days .

METHOD OF PREPARATION

Drug- *Tankanaamruta malahara*

Ingredients :

- 1) *Tankana* (2tola) -24gm
- 2) *Sikta taila* (12tola) – 144gm
- 3) *Sarja kshara* (1/2tola)- 6gm
- 4) *Shuddha pushpa ksaseesa* (1/2tola)- 6 gm
- 5) *Aswattha twak kshara* (2masha) – 2gm

Process of formulation

Preparation of *Tankanaamruta malahara* :

1. 144gm of *Sikta Taila* was taken into clean and dry stainless steel vessel.
2. 24gm of *Shuddha Tankana Bhasma* was added to it.
3. It was vigorously stirred by palms, until *Shudha Tankana bhasma* gets mixed properly(10 min)
4. Then after 6gm of each *sarja kshara* and *Shuddha pushpa kaseesa* was added and it was stirred about 10-15min.
5. 2gm of *Ashwattha twak kshara* was added and the mixture was stirred vigorously for about 15-20 min.
6. After sufficient stirring a homogeneous mixture of

Tanakanaamruta malahara was prepared,stored it in appropriate containers.

Precaution :

- Each ingredient should be made fine powder before mixing.
- Each ingredient should mixed one by one in the base.
- Constant and continuous stirring should be done for making homogeneous mixture form.
- Final product obtained should be smooth and fine.

Time of dressing :

Bandaging was done every day once in the morning , if the bandage becomes wet completely in between, than rebandaging was carried out .

Duration of treatment :

Duration of treatment was up to appearance of *Shuddha Vrana Lakshanas* or up to 28 days (Changes were assessed on 7th ,14th ,21th,28th day).

Fallow-up of study :

On completion of the treatment the patients were asked to attend the OPD at the interval of one week for a period of 3 months .

ASSESSMENT CRITERIA

Assessment Parameter :

"A Comparative Clinical Study of Tanakanaamruta Malahara and Povidine Iodine in the Management of DushtaVrana"

The patients were assessed on the basis of subjective and objective parameter before and after treatment .

Subjective parameter :

A. Vedana (Pain)

- Grade – 0 (-) : Absolute No pain
- Grade – 1(+) : mild pain
- Grade – 2(++): Moderate pain (unable to do some activities due to pain

- Grade – 3(+++) : severe pain

Objective parameter :

A. Varna (colour)

- Grade – 0 (-) : -*Twak samavarna*
- Grade – 1(+) : *Kapota varna*
- Grade – 2(++): *Shweta varna*
- Grade – 3(+++) : *Krishna*

B. Sraava (Discharge)

- Grade – 0(-) : No discharge .
- Grade – 1(+) : If *vrana* wets 1 pad of 4X4cm gauze piece (mild)
- Grade – 2(++): if *vrana* wets 2 pads of 4X4 cm gauze piece (moderate)
- Grade – 3(+++) : If *vrana* wets more than 2 pads of 4X4cm gauze piece (profuse) .

C. Gandha : (smell)

- Grade – 0(-) : No smell
- Grade – 1(+) : Minimum bad smell
- Grade – 2(++) : Tolerable foul smell
- Grade – 3(+++) : intolerable foul smell

D. Mamsankura (Granulation tissue)

- Grade – 0(-) : Healthy granulation

- Grade – 1 (+) : Moderate granulation
- Grade – 2(++): Unhealthy granulation
- Grade – 3 (+++) : Granulation tissue absent

E. Pariman (Size of Wound)

- Grade – (-) : Healed
- Grade – (+) : Within 1-3 cm
- Grade – (++) : within 3- 6 cm
- Grade – (+++) : Within 6-10 cm

Size of wound

Healing Index : $\frac{\text{Size of wound}}{\text{Time of Healing (in days)}}$

STATISTICAL ANALYSIS:

Objective parameters- accessed by Paired 't' test.

DISCUSSION:

Sex : The observation made in our study on the incidence of sex, shows maximum number of patients i.e 62.50% were male and 37.50% were female. It suggests that the occurrence of the wound in male is more when compared to female. This is because while compared to females, males are working outside home under stress and tension. Even there will be difference in diet, life style and personal habits which are important in the pathogenesis and progression of disease by causing vitiation of *doshas*, which results on formation of *Nijavranas*. Also the males are more

prone to get wound by external trauma during their routine works.

Age :

The observation was made according to the distribution of age shows that 40% patients were at the age of 21-40 year and 41-60 year, and 18% patients were 61- 80 year of age , and 2.50% patients were at the age of >80 years. It shows that middle age and old age group patients were prone to develop of non healing ulcer because middle age group are more active and busy at their work hence more chance of getting injury, in the other hand at old age the synthesis of collagen is less which delays wound healing.

Religion :

In case of religion we find maximum number of patients were Hindu i.e- 85% and 15% were Muslims. The religion doesn't seems to have any significant relationship with *Dushta vrana*. Geographical proportion of Hindu in this city may be the cause for its higher incidence.

Occupation :

On occupation we find maximum number of patients i.e – 30 % were labor and house wife , next 27.50% were business , 7.50% were officials, and 5% were students. Here

occupation plays an important role, in labor because of continuous work, and abnormal intake of food causes nutritional deficiency leading to *dhatu kshaya* which intern cause *Vata prakopa* and the personal habits are important in causing the *pitta dushti*. and also the incidence of injuries and expose to unhygienic situations are more in this group, and also business class exposes more pressure both physically as well as psychologically which may cause prolonged wound healing.

Socio economic status :

On socio economic status we find maximum number of patients i.e – 53% were lower middle class followed by 25% were upper middle class, 13% were Poor and 10% were Rich. Middle class people have to do more laborious work for their livelihood. So they are very prone to get injury.

Addiction :

We find maximum number of patients i.e- out of 40 patients maximum i.e – 52.5% were having history of smoking, 40% patients do no having any addiction, 12.5% were having history of alcohol intake. It shows that the incidence of non healing ulcer is more in the patient with the history of

smoking because nicotine is a vasoconstrictor that reduces proper blood supply to the skin, resulting in tissue ischemia and impaired healing of injured tissue.

Diet :

On diet we find maximum number of patients i.e- 67.5% were vegetarian and 32.5 % were having mixed type of food. It shows that the incidence of non healing ulcer is more in vegetarian it may be due to protein deficiency which is very much important in wound healing.

Part involved :

Maximum number of patients i.e- 35% having the involvement of right lower limb and 20% were left lower limb involvement followed by 22.50% having other involvement and 17.50% were having right hand , 5% were left hand involvement. The ratio is such as because of limb is the most dependent part and in arterial and venous ulcer pathology patients there will be *Margavarodha* to *Raktaparibramana*.e obstruction to the proper flow of impulse and circulation which results in the formation of ulcers mainly in lower extremities . This is due to Microangiopathy, Vascular deficiency ,

Stasis of blood and gravitation may be the underlying pathologies.

Discussion based on the effect of treatment based on cardinal sign and symptoms

The effect of treatment was assessed on the basis of each sign and symptom of *dushtavrana* .

These sign and symptoms were given scoring pattern in all 40 patients before treatment and after treatment with *Tankanaamrutamalahara* in trial group (Group A) and Povidine iodine (Group B) and were assessed statistically to see the significance. The effect of therapy in both the groups on subjective and objective criteria is below.

1. Vedana:

In trail group initial mean score of *vedana* was 2.05 which reduced upto 0.50 after treatment with 75.61% relief, which was highly significant($P<0.001$). In control group the mean score of *vedana* was 2.2before treatment which was reduced to 0.55 after treatment with 75% relief which was statistically highly significant ($P<0.001$).

The severity of *vedana* or pain is mainly due to vitiated *vata* and *pitta dosha*.As this *malahara* is enriched in *madhura*

rasa and *sitaveerya* it can reduces *vata* and *pitta dosha* both that is why it shows effect on *vedana*.

The pain in the wound is mainly due to inflammatory changes and infection. The ingredients of drug *Tila* is *vatashamana*, pain reliving, sesamol- a chemical present in *tila* has a phenol ring and act as ant inflammatory drug. *Kaseesa* has anti-bacterial, analgesic, anti inflammatory, antiseptic action which helps to stop the formation of pus and subsides pain. By anti-inflammatory, it reduces edema there by relieves the pain.

2. Sraava:

In trail group initial mean score of *sraava* was 2.00 before treatment which reduced up to 0.50 after treatment with 75% relief which was statistically significant ($P < 0.001$). In control group mean score of *sraava* was 2.45 which reduced to 0.65 after treatment with 73.47% relief which was statistically significant ($P < 0.001$).

The severity of *sraava* is depend on *pitta dosa*. *Pitta* is responsible for the formation of *puya* in *dushtavrana* by vitiating the *Rakta*.

The supportive infection in the wound gradually leads to cell death. The toxins of the pyemic organisms kill the

tissue cells and exudates. Liquefaction of the dead tissue caused by proteolytic enzyme released from the dead polymorph nuclear leucocytes. The resulting yellowish fluid is pus.

As this *malahara* has *madhura, kashaya* and *tikta rasa* predominance, *vranasodhaka* property; and *ashwatthatwakkshara, sarjakshara* has *lekhana* effect and antioxidant effect, antimicrobial effect it can reduces *sraava*.

3. Gandha:

In trial group initial mean score of *gandha* was 2.00 which reduced to 0.45 after treatment 77.5% relief which was statistically significant ($P < 0.001$). In control group mean score of *gandha* was 2.25 which reduced to 0.65 after treatment with 71.1% relief which was statistically significant ($P < 0.001$).

Smell of the *vrana* is due to necrotic tissue or gram negative and anaerobic bacteria in the wound bed, can create foul smell due to tissue breakdown.

As this *malahara* has the predominance of *katu tikta rasa* it shows *vrana shodhaka* and *raktaprasadaka* property, of *tankana* and *kaseesa, ashwatthatwakkshara* gives a significant effect on reducing *gandha*.

4. Mamsanakura:

In trial group initial mean score of *mamsanakura* was 1.95 which reduced to 0.50 after treatment 74.36% relief which was statistically significant ($P < 0.001$). In control group mean score of *mamsankura* was 2.25 which reduced to 0.55 after treatment with 75.56% relief which was statically significant ($P < 0.001$).

Mamsanakura i.e granulation tissue is formed when *doshasamyata* and *shodhana* of *vrana* is achieved, as this *malahara* contains *tankana*, *siktataila*, *sarja*, which are *madhura* and *kashaya rasa* predominance, *madhura rasa* gives nutrition to tissue, granulation tissue formation.

Kashayarasa provides *lekhana* that helps in deslough, preparing the wound for healing. *Ashwatt twak kshara tridoshashamaka* which helps in natural wound debridement, and this *malahara* is predominant in *guru guna* which gives stability to the formed *mamsanakura*.

And *tila* has *snehana* action which gives nutritional support to the newly formed tissue; it also helps in collagen tissue formation by inhibiting lipid peroxidation. On the other hand in povidine iodine helps in

epithelialization, angiogenesis and also improves fibroblastic activity.

5. Varna:

In trial group initial mean score of *varna* was 2.10 which reduced to 0.55 after treatment 73.81% relief which was statistically significant ($P < 0.001$). In control group mean score of *vrana* was 2.3 which reduced to 0.5 after treatment with 78.26% relief which was statistically significant ($P < 0.001$).

As this *malahara* has *tikta rasa* predominance and *sarjakshara*, *ashwatthahas raktaprasadaka*, and *tila*, *aswattha*, *sikta taila* are *varnya* in action and also has *vranaropaka* property. *Tila* has the effect on collagen fiber maturation.

kaseesa and *tila* both have the effect on wound contraction these make this *malahara* effective in restoration of skin colour.

6. Parimaan:

In trial group initial mean score of *parimaana* was 2.35 which reduced to 0.60 after treatment 74.47% relief which was statistically significant ($P < 0.001$). In control group mean score of *parimana* was 2.1 which reduced to 0.60 after treatment 71.43% relief which was statistically significant ($P < 0.001$).

Sikta ,tila, tankana ,sarja,kaseesa has *vrana*ropana action. *Tila* stimulates fibroblast which results in wound contraction. *Krimihara* property of *sarjakshara* and *ashwattha* helps in improvement in *akruti* .

DISCUSSION ON DRUG

Probable Mode of Action of Drugs :

Tankanaamruta Malahara

Rasa Panchakas :-

Rasa :Tikta, Katu, Kashaya, Madhura .

Guna: Ruksha, laghu, snigdha.

Veerya :sheeta

Vipaka :Katu

Karma: Tridoshaghna, VranaShodhana,

Vranaropana, Vishaghna, Krimighna,

Lekhana, Shoolahara, Varnya,

kandughna, lekhana ,vata-

kaphashamana.

Samprapti Ghataka of

DushtaVrana:-

Dosha :Tridosha.

Dushya: Twak, mamsa, Meda.

Mala: Puya.

Agni: Mandagni.

Srotas: Raktavahasrotas

,Mamsavahasrotas.

Srotodushti :Vimargagamana .

Probable Mode of Action :

Vrana is a *tridoshajavikara*, *vata* may be pacified by the *madhura rasa* and *snigdhasguna*. As *shoola* is caused by

vata will also get subsided. *Pitta ,Paka* and *Sraava* may be mitigated by the virtue of its *Tikta, Kashaya, Madhura rasa* and *SheetaVeerya*. *Kapha* may be mitigated by *Tikta,Katu,Kashaya rasa, Laghu, Rukshaguna* and *KatuVipaka* and also helpful for reducing *Gandha* by *Tankanaamrut amalahara*. As *Tankanaamrutamalaha* has *varnya* and *raktavardhaka* properties , it may be help in removing the *vrana vastu* (scar). *Ashwattha* contains tannins, flavonoids, saponins, sterols and protiens thus it acts as anti-inflammatory , provides a protective membrane and gives nutrition to the granulation tissue by this *Tankanaamrutamalaha* may help to reduce the *vedana, gandha, srava, mamsankura*. There may leads to *shodhana* and *ropana* of *vrana*.

CONCLUSION

The present study entitled “ A Comparative Clinical Study of *Tanakanaamruta Malahara* and Povidine Iodine in the Management of *DushtaVrana*’ was aimed to evaluate the action of *Tankanaamruta Malahara* on *Dushtavrana*. After Clinical observation and statistical evaluation, the following conclusions were drawn.

"A Comparative Clinical Study of Tanakanaamruta Malahara and Povidine Iodine in the Management of DushtaVrana"

- All *Dushtavrana* with slough, foul smell, discharge etc are considered as chronic or non healing ulcer.
- The ingredients of *TankanaamrutaMalahara* act as *Tridoshashamaka*, *krimighna*, *vishaghna*, *Lekhana*, *Vedanasthapana*, *Vranashodhana*, *Vranapachana* and *Vranaropana* properties.
- As the *Tankanaamruta Malahara* contains Anti-oxidants, Anti-inflammatory, Analgesic and Antimicrobial agent; which helps in debridement of wound as well as promotes wound healing.
- This *malahara* is found to be effective in wound healing without causing any damage to healthy tissue and it accelerate the healing process irrespective of the underlying causative factors responsible for *Dushtavrana*.
- And also it shows Significant Antimicrobial activity it has more Active and potent **Herbo-mineral** ingredients, because it is free from any added preservatives like allopathic drugs.
- This Treatment modality of *dushta vrana* is cost effective, easily

prepared , easily applicable and can be conducted at OPD level.

- Thus it can be concluded that *Tankanaamruta Malahara* is not only safe and simple debriding phyto-genic agent, but also effective *VranaRopana* and *Vrana shodhana* property .

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Corresponding author:

Dr. Vanita Halli

Final Year PG Scholar, PG Department of ShalyaTantra
N.K.Jabshetty Ayurvedic Medical College and Research
Centre, Bidar, Karnataka-585401

Email: vanitahalli29@gmail.com

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