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

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DOI: https://doi.org/10.47071/pijar.2021.v06i06.01

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, tridoshahara 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 branches among that shalya tantra has wide scope in the management of vrana, so Acharya Sushruta has mentioned Vrana vinischayartham 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 important 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 function'.

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

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 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 vaikrutapahā (which can be correlated with initiation of plastic surgery).
Management of wound mainly divided into \textit{Shodhana} (purification therapy) and \textit{Ropana} (local application) which helps to heal the wound faster without any complication. Topical application of \textit{Ghrita, Taila, Lepa} drugs in other form of \textit{malahara}, is a unique preparation of our science which is very comfortable for the patient to apply, one such \textit{Tankanaamruta malahara} has manly highlighted by \textit{Rasa Tarangini}. Hence the clinical study on 40 patients of \textit{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 dushta vrana, out of 20 patients were treated by \textit{tankanaamruta malahara} as trial group, and where as 20 patients were treated with povidine iodine as control group are employed.

\textbf{MATERIALS AND METHODS}

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

\textbf{SELECTION CRITERIA.}

\textbf{Inclusion criteria:}

1. Specific signs and symptoms of \textit{dushta vrana} (durgandha yukta puti puya, vedana, daha, paka, raga, kandu, dushta 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.

\textbf{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.

\textbf{SAMPLING TECHNIQUE}

A Total number of 40 patients were diagnosed signs and symptoms of \textit{Dushta vrana} were registered and randomly divided into two groups.

\textbf{GROUP -1 : TRIAL GROUP :-}

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

\textbf{GROUP-2 : CONTROL GROUP :-}
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 clen 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 *Aswattha twak kshara* was added and the mixture was stirred vigorously for about 15-20 min.
6. After sufficient stirring a homogeneous mixture of Tankanaamruta 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 :**
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 (++++) : inttolerable foul smell

D. *Mamsankura* ( Granulation tissue )
- Grade – 0(-) : Healthy granulation
- Grade – 1 ( +) : Moderate granulation
- Grade – 2(++) : Unhealthy granulation
- Grade – 3 ( ++++) : Granulation tissue abent

E. *Pariman* ( Size of Wound )
- Grade – ( -) : Healed
- Grade – (+) : Within 1-3 cm
- Grade – ( ++) : within 3-6 cm
- Grade – ( ++++) : Within 6-10 cm

**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 2.2 before 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 trial 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(<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 *mamsanakura* 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 povidone 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 vranaropana 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

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 snigdhaguna. 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 Tankanaamrutamalahara has varnya and raktavardhaka properties , it may be help in removing the vrana vastu (scar). Ashwattha contains tannins, flavonoids, saponins, sterols and proteins thus it acts as anti-inflammatory, provides a protective membrane and gives nutrition to the granulation tissue by this Tankanaamrutamalahara 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 Tankanaamruta 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.
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- 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 debridementing phytogenic agent, but also effective VranaRopana and Vrana shodhana property.

REFERENCES

1. Shastr iAmbikadutta Kaviraj, Sushruta Samhita-Poorvardha, Sutra Sthana, 1/7,Varanasi: Chaukhamba Sanskrit; 2014.p5
2. Shastri Ambikadutta Kaviraj, Sushruta Samhita-Poorvardha, Sutra Sthana, 1/9,Varanasi: Chaukhamba Sanskrit; 2014.p5
6. Shastri Ambikadutta Kaviraj, Sushruta Samhita-Poorvardha,
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Published BY:
Shri Prasanna Vitthala Education
and Charitable Trust (Reg)

Source of Support: NIL
Conflict of Interest : None declared