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A Comparative Clinical Study To Evaluate The Efficacy Of *Kasisa Churna* And *Puga Churna Avachurnana* In *Vrana*

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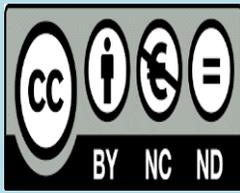
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ABSTRACT: -

Healthy healing of *Vrana* is most important part of surgery it can be *Nija* (endogenous) and *Agantu* – (exogenous) or *Shastrakrit*; it's not merely deals with good closure of wound but also maintain its anatomical and functional integrity with minimal scar formation without complications. *Avachurnana* used in superficial/ Deep and foul-smelling ulcers covered with layers of deranged fat. *Shodhana* (purification) and *Ropana* (healing) being safer, easy, potent and economic procedure useful to establish even *Vaikrutapaham* (to restore normalcy to scar). *Kasisa* is *Shothahara* (anti inflammatory), *Rujahara*, (analgesic) *Krumihara* (wormicidal), *Sankochakaraka* etc, ingredient in *Vrana Chikitsa kalpa's* - *vrana Ropana churna*, *Vrana Shodhana Sutra/Varti*, *Roma Sanjana yoga* etc. Patient belongs to whichever geographical area, the medicine grown in same region is hita; *Puga*, locally cultivated, available worldwide, economic, ingredient in various *vrana yoga's* - *Ghontaphaladi Varti*; *Pugadi yoga*, *Pugadi lepa*, *mocha-Pugadi ksheera* etc; it possesses *Kashaya rasa* which aids *vrana Ropana*; *Kledahara*, *Malahara*, *Rusha* – *Sankochakaraka*, *Shotahara*, *raktasthambana* etc. *Brinraja Bhavita Kasisa Churna and Puga Churna avachurnana* (Topical Medicated Dusting) in Randomized comparative clinical study with Group A overall result is 94.21% and Group B overall result is 91.10% which shows statically significant results in both groups. Comparative analysis of the overall effect of the treatments in both the groups with unpaired t-test shows that the treatment is not significant in Group A. No Incidences of complications like infection, aggravation of *Lakshana*, recurrence or any other adverse effects were found during the study

Keywords : *Vrana*; *Wound*; *Avachurnana*; *Kasisa*; *Puga*; *Brinraja*; *Churna*; *Shodhana*; *Ropana*; *Upakrama*;



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INTRODUCTION

Life starts with healing of Umbilical cord cut wound. *Vrana* (wound) is discontinuity of body surface, causes damage and discoloration of tissue with pain ^[1]. Ayurveda - Science of Life, being a *Upaveda* helps human to achieve *Chaturvidha Purusharthas* ^[2]; obstacle is *Ruja/Vyadhi* (Pain/ Disease). Ayurveda aims to prevent and cure the disease & maintain healthy state ^[3]; understanding of this is made simpler under *Ashtangas* of Ayurveda and *Shalyatantra* (Medical Branch dealing with Surgery) is one among them ^[4] - *Vrana Vinishcayartham* being one major subject ^[5], its etiopathology - treatment is elaborately described ^[6]. All types of *Shalya and Shastra - Anushastra Karma* (Major Surgical and Para-surgical Procedures) ultimately result into *Vrana* formation; thus, its thorough knowledge is essential for the *Shalya Kovida* (*Surgeon*). Wound Healing is natural process, but many times requires support. *Sandhana karma* by *Deva Vaidyas* Ashwini Kumaras in head of *Yajna (Daksha)* ^[7] is reference from *veda*; Puranas mention about Surgical wounds; Great Indian Epics *Ramayana* and *Mahabharata* also mention about wound healing and saving of life. Brihat trio, Laghu trio, *Bhela Samhita*, *Kashyapa Samhita*, *Yogaratanakar*, *Bhaishajya Ratnaavali* etc treatises describe different aspects of *Vrana*. Also, the references about wound can be found in the history of different civilizations across the world ^[8].

Shasthi Upakrama ^[9](aids/ medications/ procedures) aids good approximation without complication with early healing and acceptable scar. Topical applications like *Vrana Prakshalana* (irrigation), *Pichu*, *Lepa*, *Ghrita*, *Taila*, *Rasakriya*, *Avachurnana* are adopted depending on *Vrana Avastha* (condition), *Dosha*, for *Shodhana* (cleansing/ debridement) and *Ropana* (accelerate early healing) ^[10]]to avoid dead tissue, infection and foreign body etc affecting normal healing process and promote tissue healing. Going further, *Acharya Sushruta* has given much emphasis on *Vaikruthapaham* (to restore normalcy to scar). ^[11] - bringing back the normal color, surface and even hair ^[12]; but presently wound is healed when epithelialization is complete/replacement of dead tissue with living tissue ^[13].

Need and significance for the study: 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 ^[14]. A search for more effective and safe method of *Vrana Shodhana* (purification) and *Vrana Ropana* (wound healing) is a demand for management of *Vrana*. For full application of principles told by our Acharyas there is need of extensive applied and evidence-based study. This Clinical Comparative study aims at the evaluation of the efficacy of Dusting of Medicated Powder (*Avachurnana*) using selected drugs (*Bringaraja bhavita Kasisa Churna* and *Puga Churna*) in the

management of Wound (*Vrana*).

Avachurnana means sprinkling of Medicated Powder over the wound as *Bahya Chikitsa* (Topical application/ External local therapy); finest modalities in superficial/deep foul-smelling ulcers covered with deranged fat^[15] for *Shodhana* and *Ropana*; it's safer, easy, potent and economic; also, helpful to establish *Vaikrutapaham*^[16]. *Kasisa*, *Kimshuka*, *Triphala*, *Lodhra* etc are *Avachurnana Dravya* by *Teeka Kaaras*^[17]. *Kasisa* is used in *Vrana*^[18] for its properties like *Shothahara*, *Rujahara*, *Krumihara*, *Sankochakaraka*, *Lekhana*, *Rakta Vardhaka*, *Ropaka*, *Shodhaka* and so on^{[19]-[20]}; ingredient in *Vrana Chikitsa kalpa's - vrana Ropana churna*, *Vrana Shodhana Sutra/Varti*, *Roma Sanjana yoga* etc. Patient belongs to whichever geographical area, the medicine grown in same region is *Hita*; *Puga* is locally cultivated, available worldwide, economic, possess *Kashaya Rasa*^[21] which aids *Vrana Ropana*; it is *Kleda - Malahara*^[22], *Rusha - Sankochakaraka*^[23], *Shodhaka*,^[24] *Ropaka*^[25] and so on *Rakta sthambaka*; ingredient of *Ghontaphaladi Varti*^[26], *Pugadi Yoga*, *Pugadi Lepa*, *Mocha-Pugadi Ksheera*^[27] etc formulations in *Vrana Chikitsa*.

MATERIAL AND METHODS:

A Randomized Comparative Clinical Study with Sample size of 40 Patients divided into two equal groups (Group A & Group B). Group A with *Kasisa churna Avachurnana* and Group B *Puga churna Avachurnana*.

After Written Consent; positioning of patient comfortably (sitting / lying down) in MOT with *Asvasana* and explanation of the procedure, *Vrana* was exposed properly. If necessary Normal saline/Distilled water wash and dried with sterile swab, then debridement followed by

Avachurnana of quantity sufficient medicine - *Kasisa/ Puga Churna* was applied on affected part with sterile gloved hand and covered with sterile gauge Sprinkled with *Kasisa/Puga Churna with banding*. Same procedure was repeated daily 7 days or till the wound heals up and 1 follow up on 14th day. Subjective parameters and objective parameters like *Vrana Vedana* (Pain), *Daha* (Burning Sensation), *Kandu* (Itching), *Vrana Srava* (Discharge), *Vrana Ayama Visthara* (Size), *Sparsha Asahatva* (Tenderness), *Gandha* (Smell), *Varna* (Colour) and *Sotha* (Inflammation) were assessed with grading before and after treatment. And the Results were derived statistically

Preparation of medicine:

- i. ***Kasisa churna***: *Kasisa shodhana* was done with *Bringaraja Swarasa* as it is *Uttama*. Two methods were followed as mentioned in *Samhitas*.

Method 1: The *Kasisa* lumps were tied in *Pottali* and *Swedhana* was done in *Dola Yantra* with *Bringaraja Swarasa* for 1 *Yama*. But *Kasisa* was totally dissolved in *Swarasa* leaving the *Pottali* empty. The obtained *Swarasa* was boiled in earthen pot to evaporate the liquid content and obtain *Kasisa*. However very little quantity of *Kasisa* was procured which was not in the form of *Avachurnana Dravya*. Thus Method 2 was followed.

Method 2: The *Kasisa* lumps were pounded in *Khalva Yantra* to form powder. The required quantity of *Bringharaja Swarasa* was added so that the powder is totally soaked in the *Swarasa*. Continuous *Bhavana* was given in the *Khalva Yantra* in unidirectional circular movement for 1 Day. It was dried in a shade to remove moisture totally and ground in *Khalva* to obtain powder, which was sieved to obtained Fine Powder. To remove moisture, it was kept in hot air oven/

dryer for 1 day. It was stored in a clean and dry air tight container.

- ii. **Puga churna:** Locally grown Ripe Puga (Orangish) was collected, cleaned and dried in sun till it hardens. The external husk was removed and the brownish hard nut was extracted. In few geographical parts to reduce the strong nature of Areca it is boiled with *Gomutra* or *Kashaya*. But for this study no such procedure was adopted as this region Areca nuts are used as it is. The Areca nut was pound in *Khalva Yantra* to cut into small pieces/ coarse powder and fine powdered using Electrical Pulverizer. After sieving a super fine powder was obtained. To remove moisture, it was kept in hot air oven/ dryer for 1 day. It was stored in a clean and dry air tight container.

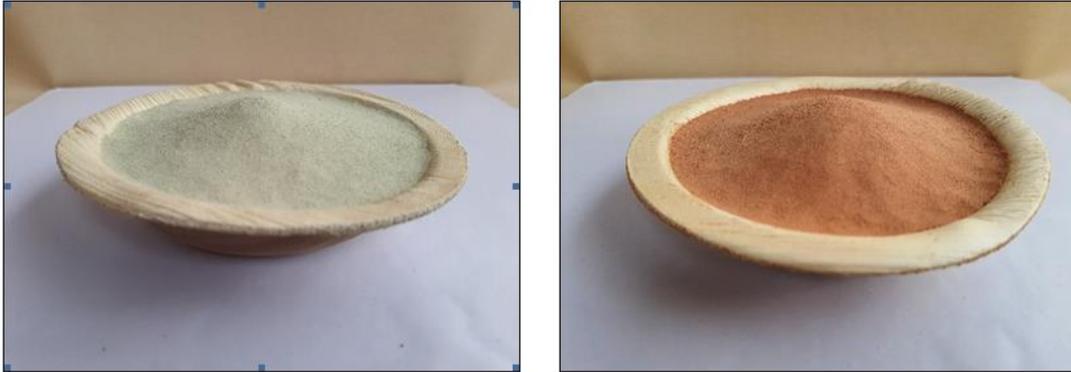
Statistical test: Data was collected using Case Report Form (CRF); Collected data was tabulated and analyzed using SPSS (Statistical

Package for Social Science) and MS - Excel by using appropriate statistical test. Demographic Data and other relevant information were analyzed with descriptive statistics. Continuous data was expressed in Mean +/- Standard Deviation. Nominal and Ordinal Data was expressed in Percentage and analyzed using non-Parametric tests like Repeated measures of ANOVA and Parametric Test like t-test. The changes with p-value < 0.05 was considered as Statistically Significant.

Investigations: The study was conducted clinically; No animal experimentation was carried out. Laboratory Investigation prescribed only upon necessity - Blood Routine (Hemoglobin %, Total Leucocyte Count, Differential Count, Erythrocyte Sedimentation Rate); FBS-PPBS/ FUS-RUS; Culture and Sensitivity Test of Wound Discharge; Histopathological Examination

Materials and Instruments:





Prepared Medicine – *Kasisa and Puga Churna*

Preparation of medicine:

1. *Kasisa churna*:

Raw drug



Shodhana: Obtaining *Bringaraja Swarasa*





i. *Dola yantra swedhana with bringaraja Swarasa:*

ii. *Bhavana with bringaraja swarasa:*



Puga churna:

Raw drug:



Preparation of *Puga Churna*:



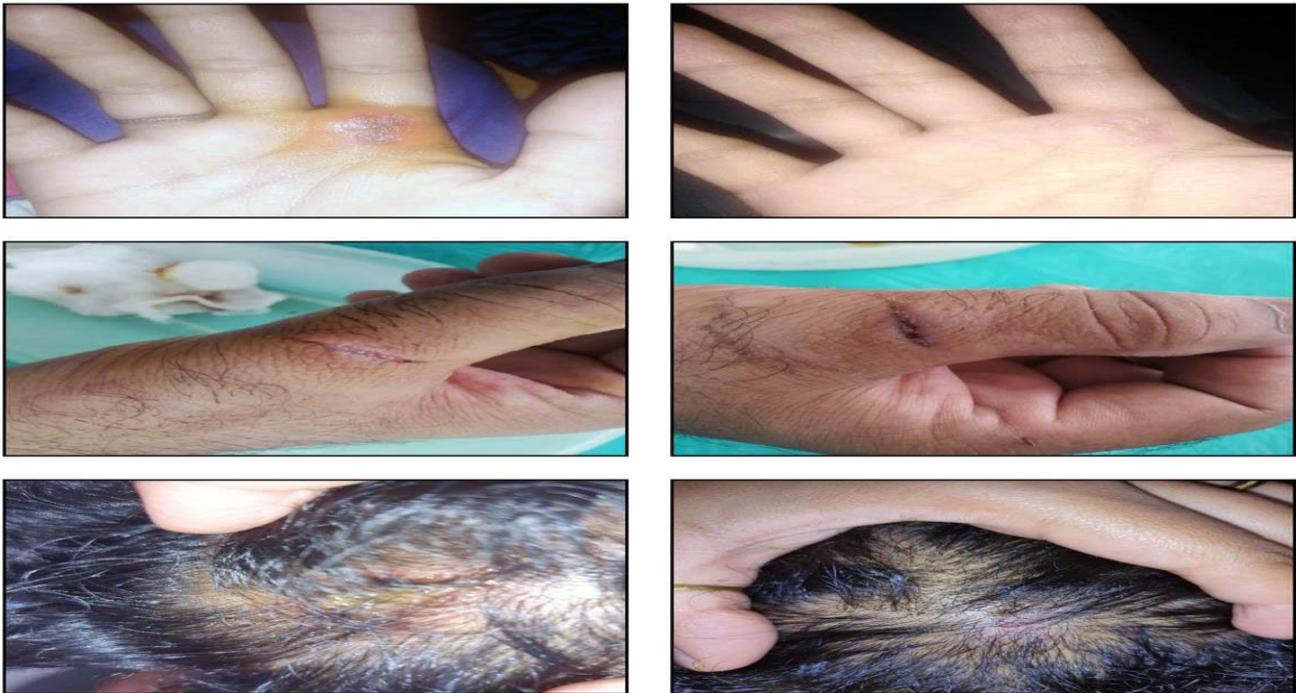
Treatment with *kasisa churna* – Procedure



Treatment with *puga churna* – Procedure



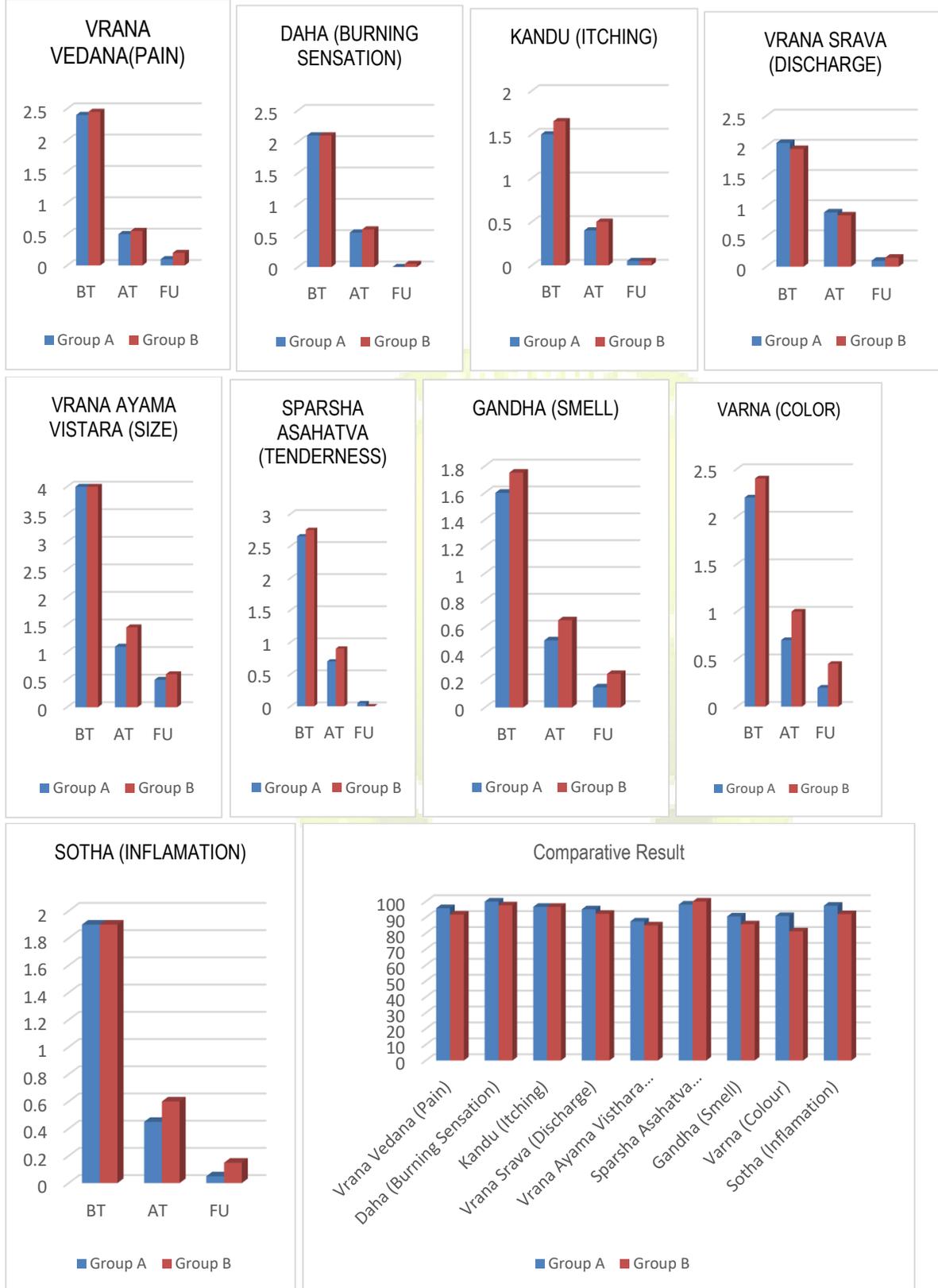
Overall Effect of Treatment Before and After Treatment – *Kasisa Churna Avachurnana*:

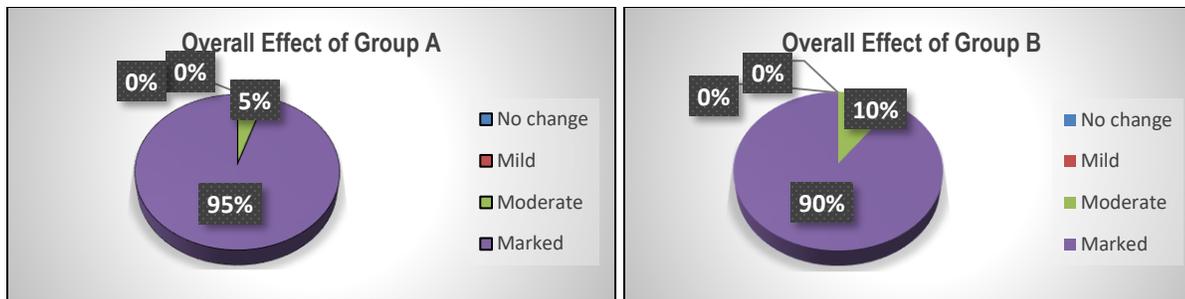


Overall Effect of Treatment Before and After Treatment – *Puga Churna Avachurnana*



RESULTS :





DISCUSSION

As mentioned in classics, the ‘*Vimarsha*’ i.e, discussion before coming to ‘*Nigamana*’ (Conclusion) is part of approving the knowledge as authentic (Con). Discussion being the important part of any research work provides a platform for re-examining the whole work, which is a key part of any scientific and methodical research work. Acharya Sushruta has made it clear that without the proper knowledge of wound and its management the success of surgery cannot be anticipated. When the wounds are not treated in proper time even the curable (*Sadhya*) ulcer may turn into *Yaapya*, *Yaapya* to *Asadhya* and *Asadhya* in to fatal. The *Vrana Ropaka Kriya* is still challenging aspect even till today since ancient times. Though a variety of medications have been evaluated and patented as wound healing agents, their inability to become successful drugs is due to the fact that these are able to act only at a particular step of the healing cascade. It is therefore, necessary that these agents of optimum biological activity have to be based on a border mechanism of the healing process. It is likely that more effective wound debridement and wound healing agent would be developed from natural products. Different regions employed different modalities and interventions for wound healing. Present work is also a further step in this path. The aim of wound cleansing should be complete removal of all non-

viable tissues, enhancing wound hygiene and resolve the local pathology, as it is vital for proper wound bed preparation allowing the wound to heal faster. The above said form of treatment and pharmacodynamic properties of the drug might have corrected the local pathology and stimulated the healing process leading to *Vrana shodhana* and *Ropana* with glimpse of *Vaikrutapaha*. *Kasisa Churna* and *Puga Churna Avachoorana*; which are having *Vrana Shodhana*, *Ropana*(healer) , *Vedana-Sthapana* (analgesic) properties are selected for the study.

Puga: Geographically grown locally and easily available; Helps remove slough and dead tissues; If used for long term, observed to corrode normal tissue; Was not soluble and extra quantity remained on wound as it is. As per locals no *shodhana* is required for *puga* though in some place they use *Gomutra* or the rind *Kashaya* etc to boil.

Kaseesa: *Kaseesa* for external use, *shodhana* not required as per *Samhitas*; in the later treaties *Bhasma* is used for internal purpose. *Bringaraja Shodhita Kasisa churna* was used. Helps *Rakta Utpatti*, soluble and absorbed,

Bandhana is an important as a *Paschat Karma* which provides a needy environment with rest to the part, keeping he medicament in situ and protecting the part for microbes as well as external climatic effect.

Avachurnana also can cause *Gharshana* by the

minutest movements occurred which also helps debridement, healing and can facilitate blood flow. The presence of this medicated powder on the wound creates unsuitable condition for the microbes, also due to the thin filmy layers avoids the broken tissue direct exposure which in turn protects the wound from infection. *Twak Savarnikarana, Roma Sanjanana* etc properties of the selected drugs also helps *Vaikruthapaham*. Observation and Probability of Incidence: Equally male and female – Anyone can get injured, most from age group 40-50 (age factor-tissue capability of rapid healing might be curbed delaying wound healing), maximum occupation was labour- nature of work prone to wound; mostly number were single and in lower limb - region being more prone to different forms of wounds; most were chronic and *Dusta Vrana* - negligence to avail treatment until aggravation; site movement altered - local destruction and alteration of functionality

Discussion on Results and Probable Mode of Action:

Overall Efficacy of the Drugs: Amongst 20 patients in Group-A, 95 % patients showed marked results (*Uttama Upashaya*) and 5 % patients showed moderate results (*Madhyama Upashaya*). There were 0% patients with mild (*Alpa Upashaya*) and no changed results-*Anupashaya* (no relief). Amongst 20 patients in Group-B, 90 % patients showed marked results and 10 % patients showed moderate results. There were 0% patients with mild and no changed results. Healing of any tissue can't occur without remission of the cardinal clinical features of *Vrana*; *Rasa, Guna & Karma* of the trial drugs helped to check out the clinical features of the *Vrana*. After respective drug treatment, Group-A showed 94.21 % overall results and Group-B showed 91.10% overall results which are

statistically significant. Comparative analysis of the overall effect of the treatments in both the groups was done by statistically with unpaired t test which showed treatment is not significant in Group A when compared to Group B

CONCLUSION

Sthanika Avachurnana Karma was the procedure adopted to administer the research drugs over *Vrana* which served both *Shodhana* (purification) and *Ropana* (healing) purpose as mentioned in the classics. It was also a safe, simple and cost-effective procedure. No Incidences of complications like infection, aggravation of *Lakshanas* (symptoms), recurrence or any other adverse effects were found during the study. Noticeable quality of healing with minimum scar formation and discoloration giving reasonably appreciable cosmetic results was observed. By the virtue of easy absorption medicines, *Shodhana, Sthambhana, Sravahara, Soshana, Krimihara, Lekhana and Chedhana* properties of *Kasisa* helped *Varana Shodhana and Ropana*. *Puga* showed considerable goodness in treatment which is Attributable to antiseptic, anti-inflammatory, analgesic properties; *Kledahara, Ropana, Krimihara*.

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