

The Journal of Phytopharmacology

(Pharmacognosy and phytomedicine Research)

Review Article

ISSN 2320-480X

JPHYTO 2017; 6(3): 194-199

Received: 06-06-2017

Accepted: 21-07-2017

© 2017, All rights reserved

Sahu Purnesh

M.S. Scholar, P.G. Dept. of Shalya Tantra, Govt. Ayurved College, Raipur Chattishgharh, India

Chandrakar Smriti

M.S. Scholar, P.G. Dept. of Shalya Tantra, Govt. Ayurved College, Raipur Chattishgharh, India

Singh Balendra

Reader, P.G. Dept. of Shalya Tantra, Govt. Ayurved College, Raipur Chattishgharh, India

Aradhana Toppo

M.S. Scholar, P.G. Dept. of Shalya Tantra, Govt. Ayurved College, Raipur Chattishgharh, India

Correspondence:

Sahu Purnesh

M.S. Scholar, P.G. Dept. of Shalya Tantra, Govt. Ayurved College, Raipur Chattishgharh, India

Email: dr.purneshsahu[at]gmail.com

Role of Dhoopan Karma and Gauradya Ghrita in the management of Dushta Vrana (infected wound)

Sahu Purnesh*, Chandrakar Smriti, Singh Balendra, Aradhana Toppo

ABSTRACT

Ayurveda is that which deals with good, bad, happy and unhappy life, its promoters and non-promoters, measurement and nature. Shalya Tantra is a specialized branch of Ayurveda in which Surgical, Medicinal and Parasurgical (Minimal invasive surgical measures) like Agnikarma, Ksharkarma, Siravedha, Jalokavacharana etc. are described for management of various diseases. Vrana is one of them which have been managed by human being from very beginning of civilization. Under this circumstance the first thing which the man came across was the injury by different sources which caused wound. All the chronic and non healing ulcers remains with slough, foul smell, discharge which are considered as Dushta Vrana. Vrana which has foul smell, continuously flowing putrefied pus along with blood, abnormal colour, intense pain, takes long time to heal etc. Wound healing is a natural process, but factors like slough, infections, and foreign bodies affect the process of normal healing. Dushta Vrana is one of the vranas which needs treatment for healing. Vitiateddoshas cannot be treated with a single drug all times. Therefore number of drugs of different properties is described as Vrana shodhaka (Dhoopana karma) and Vrana ropaka (Gauradyaghrita) in the management of Dushta Vrana.

Keywords: Vrana, Dusta vrana, Dhoopana karma, Vranaropaka.

INTRODUCTION

Acharya Sushruta an eminent surgeon of era who has given the concept of the surgical principle. Vrana is a subject of matter for shalyatantra. The study of Shlyatantra brings out very clearly that vrana is the most significant surgical entity and knowledge of its effective management for a surgeon which is required basic skill on which the outcome of surgery revolves.

The vrana having doshik involvement known as Dushta Vrana. Dushta is one in which there is localization of doshas or getting vitiated by doshas. Vrana which has foul smell, continuously flowing putrefied pus along with blood, abnormal colour, intense pain, takes long time to heal etc. Vrana lakshanas are high in intensity is Dushta Vrana.

Dushta Vrana is one of the vranas which needs treatment for healing, it is necessary to remove maximum Dushti by the virtue of Shodhana, Krimighna, Stravahara, Dahaprashamana and Vrana ropaka drug. Alleviating these inhibitory factors is goal of shodhanachikitsa (by Dhoopana karma). At the end of the shodhanachikitsavrana becomes shuddhavrana and Ropanachikitsa (By Gauradyaghrita) has to followed further.

Definition of Vrana

Vrana is so called as it cover the site, and the scar even after healing does not disappear till the person lives. The scar of vrana remains throughout life^[1].

Vrana implies damage of the part leading to discolouraton^[2].

WOUND – A wound is defined as discontinuity or break in the surface epithelium^[3] or disruption of cellular and anatomic continuity and wound healing is restoration of continuity.

ULCER- An ulcer is a break in continuity of the covering epithelium, skin or mucous membrane. It may either follow molecular death of the surface epithelium or its traumatic removal^[4].

Dushta Vrana

The word Dushta Vrana is composed of two different words and two different meanings. Dushta means degraded, damaged, spoiled, injured, deprived etc. Vrana having doshika involvement known as dushtaVrana. Dushta Vrana is an excessively damaged condition characterized by vitiation of mamsa and medadhatus and doshas (Nija Vrana) and caused by external injury (Agantuja Vrana) with exudation of durgandhayukthaPuya (Pus), pain, temperature,

inflammation, redness, itching and also oozing of durgandhayuktharakta with no intention to heal^[5].

Infected wound

Infected wounds are the wounds In which bacterial or other micro-organism have colonized or prone to infection causing for delay in wound healing and deterioration of the wound typically contaminated by bacteria. It leads to gangrene and even death^[7].

NIDAN (ETIOLOGY)- NIJA⁷-

Table 1

DOSHAS	AHARA	VIHARA
Vata	Laghu, Katu, Tikta, Rukshaahara, Shaaka, Vallura etc.	AtiVyayama, Vyavaya, Ratrijagaran, Langhana etc.
Pitta	Katu, Amla, Lavana, Ushna, Vidahi, Tila, Pinyaka, Kulatha etc.	Krodha, Shoka, Bhaya etc.
Kapha	Madhura, Amla, Lavana, Snigdha, Picchila, Masha, Godhuma etc.	Divaswapna, Aalasya etc.

Agantuja Vrana^[8]-External object is causative factor

- Damshttra-** Animal bites / Trauma due to attacks of wild animals.
- Prapatana-** Falling from height.
- Prahara-** Beating, striking.
- Prapidana-** Due to pressure of heavy materials.
- Vyadha-** Prick, penetrating wounds by sharp instruments.
- Bandha-** Strangulation injuries/ too tight bandaging.

- Chemical injuries-** Due to acids, Alkalis, Visha (poisons)
- Accidental trauma-** Due to sharp cutting instruments like knife, sword etc.

Lakshana (Symptom)

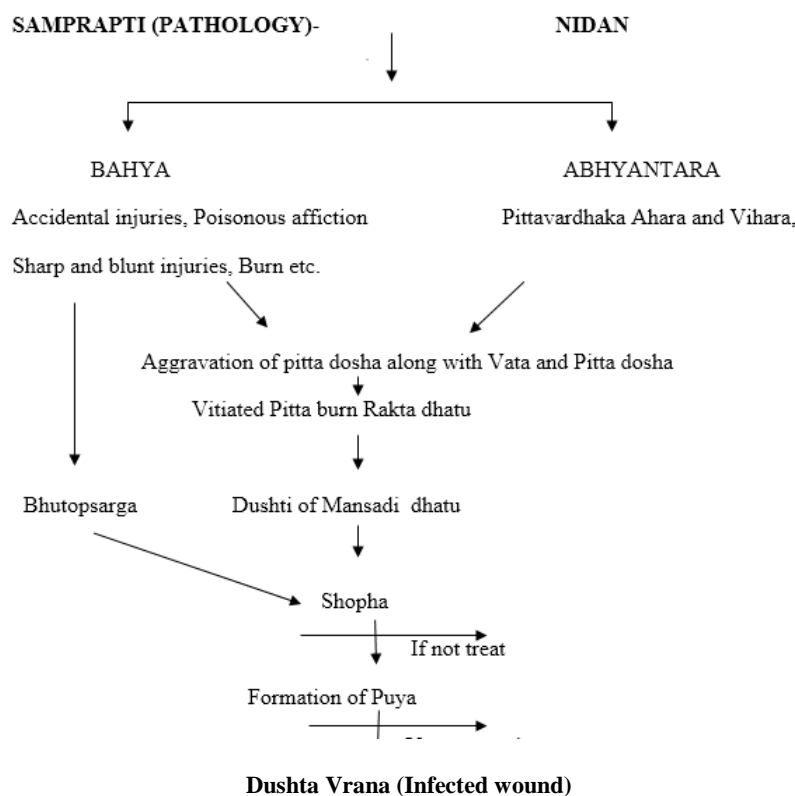
The Dushta Vrana is associated with severe pain, profuse discharge having putrefied smell, having irregular floor and margin. The colour of the vrana is of different variety.

Table 2

Vata ^[9]	Pitta ^[10]	Kapha ^[11]
<ul style="list-style-type: none"> Samvrita(Narrowmouthed) Kathina(Hard) Avasanna (Depressed) Vedanavan (Severe pain) 	<ul style="list-style-type: none"> Putimamsa (Full of foiled pus) Puyastrava (Discharge of pus) ManojanaDarshana(With ugly scar) SiraSnayuPratipurna(Involvement of muscles, and ligaments) Vivruta(Wide mouthed) Ushna (Hot) Daha (Burning sensation at site) Paka(Suppuration) 	<ul style="list-style-type: none"> Kandu (Itching) Shopha (Swelling) Pidika (With boils) Mrudu (Soft) Bhairava (Firghtful)

Symptom- Localized infection is often characterized by the classical signs and symptoms of inflammation^[12]-

Pain,	Heat,
Swelling,	Redness,
Loss of function	Foul smelling,
Pus discharge,	Irregular margin etc



Treatment

Acharya Sushruta has described the 60 measures^[13] & 7 measure^[14] for wound management from its manifestation to the complete healing. & given much importance to shodhana and ropana in the management of Dushta Vrana as well as all types of treatment – as local, general and surgical measures. healing of a wound is a natural process, The defense mechanism of body like phagocytosis& its local enzymatic action on dead tissue help to keep wound clear^[15] but. various type of micro organism like bacteria with their pathogenic action inhibit the healing process by releasing toxin. So since ancient time healing of vrana is serious issue. Our Acharya’s have explained in details about vranashodhana (cleaning of wound) and vranaropana (healing of wound)^[16]. Regarding good healing to take place the drug must possess following two properties.

- **Vrana Shodhana**-For debridement of wound.
- **Vrana Ropana**- Ropana means a factor, which promotes or quickens the healing process)^[17] i.e.For healing of wound.

Dhoopana Karma^[18]– for Vrana Shodhana

- Acharyacharaka&Sushruta has advised to do dhoopana with RakshoghnaDravyas^[19].
- Fumigation to the ulcer should be done by exposing the wound to

the smoke coming out from the box of two earthen sources. By which exposing the ulcer to smoke, there will be relief of pain, cleanliness and mitigation of exudation.

- Fumigation Should be done the powder of Guggulu, Agaru, Sarjarasa, Vacha, Gaurasarshapa added with lavana, Nimbapatra and ghrita.
- Fumigation should be done for ten nights, twice a day with Sarshapa, Nimbapatra Added with Ghrita.
- The process of fumigation to the wound should be done for the exposing the wound through the smoke wick coming out from the box of two earthen sources. Due to this smoke exposing to the wound to reducing the pain, surface cleanliness and mitigation of exudation. Fumigation of the ulcer encouraging granulation tissue formation relieved from pain, discharge and cleans wound

GAURADYA GHRITA^[20] –for Vrana Ropana

Mode of application-Local application at wound after cleaning then proper bandaging should be given.

The GauradyaGhritha which is applied over the skin and get absorbed via hair follicles, sebaceous gland, some through the inter cellular pathway of the Stratum Corneum. This is helpful to regeneration of new cells in chronic wounds.

Table 3

DRUG	BOTANICAL NAME	KARMA	DOSHAGHNATA	ACTION
Haridra ^[21]	<i>Curcuma longa</i>	(improving the complexion)Varnya (improving the complexion), Kushthaghna (reduce skin disorder), Raktaprasadana (blood purifier), Kandughna(reduce itching), Vrana shodhaka(clearing wound)	Kapha-Vatashamaka, pittarechana	^[22] Anti-inflammatory, Antiallergic, Antibacterial, Antimicrobial, Anthelminthic.
Daruharidra ^[23]	<i>Berberisaristeta</i>	Shothahara (reduce inflammation), Vedanasthapana (analgesic),shodhana (purification),Vranaropana (healing)	Kapha-pitta	^[24] Tonic, Astringent, sores

		of wound), Raktashodhaka (blood purifier)		
Manjistha ^[25]	<i>Rubiocardifolia</i>	Shothahara (reduce inflammation), Vranaropana (healing of wound), Kushthghna (reduce skin disorder), Krimighna (destroy worm), Raktashodhaka (blood purifier), Stambhana (astriction)	Kapha-Pitta	^[26] Antibacterial, Anti-inflammatory, Antitumour Antiviral.
Jatamansi ^[27]	<i>Nordostachysjatamansi</i>	Shothahara (reduce inflammation), Shoolahara (analgesic), Dahaprashamana (reduce burning sensation), Vranya (improving the complexion)	Tridosha	^[28] Analgesics, Antibacterial, Antifungal, Antimicrobial
Madhuka ^[29] (mulethi)	<i>Glycirrhzizaglabra</i>	Vranashothara (reduce inflammation), Krimighna (destroy worm), Vranaropana (healing of wound), Dahaprashamana (reduce burning sensation), Vedanasthapana (analgesic), Vedanasthapana (analgesic),	Vata-Pitta	Antimicrobial, Anti-inflammatory Anti-exudative
Prapaundarik ^[30]	<i>Nilumbocifera</i>	Vedanasthapana (analgesic),	Kapha-Pitta	Analgesics
Hiber ^[31]	<i>Juniperuscommunis</i>	Shoolahara (analgesic), Vranaropana (healing of wound), Varnya (improving the complexion), Vedanasthapana (analgesic),	Kapha- Vata	Antimicrobial, Anti-inflammatory, Antipyretic
Tagar ^[32]	<i>Valerianawallich</i>	Vranaropana (healing of wound), Shoolaprashamana (analgesic), Varnya, Kushthaghna (reduce skin disorder)	Kapha-Vata	^[33] Analgesics, Antipyretic, mild CNS depressant Antibacterial
Nagar motha ^[34]	<i>Cyprus rotundus</i>	Danaprashmak (reduce burning sensation), Raktashodhaka (blood purifier), Vranya (improving the complexion), Shoothahra (reduce inflammation)	Kapha-pitta	^[35] Antimicrobial, Anti-inflammatory, Antitumor
Raktachandana ^[36]	<i>Pterocarpussantalinus</i>	Dahaprashamana (reduce burning sensation), Stambhana (astriction), Shothahara (reduce inflammation), Twagdosahara (reduce skin symptom)	Kapha-Pitta	^[37] Antiallergic, Antibacterial, Anti-inflammatory
Jati ^[38]	<i>Jasminumofficinale</i>	Vranaropana (healing of wound), Vranashodhana (purification of wound), Putihara (free from pus), Jantughna (reduce infection), Shoolaghna (analgesic)	Kapha- Pitta	^[39] Antibacterial, Anti-inflammatory
Nimba ^[40]	<i>Azirectaindica</i>	Jantughna (reduce infection), Vranashodhana (purification of wound), Putihara (free from pus), Dahaprashamana (reduce burning sensation), Kandughna (reduce itching)	Kapha-Pitta	^[41] Antibacterial, Insecticidal, Vermifuge, Antimicrobial
Patola ^[42]	<i>Trichosanthesdioca</i>	Vedanasthapana (analgesic), Vranashodhana (purification of wound), Vranaropana (healing of wound), Krimighna (reduce infection), Shothahara (reduce inflammation)	Tridoshashamaka	^[43] Antibacterial, Antifungal, Anti-inflammatory
Karanja ^[44]	<i>Pongamiapinnata</i>	Shothahara (reduce inflammation), Bhedana (puncture), Jantughna (reduce infection), Raktashodhaka (blood purifier)	Kapha-Vata	^[45] Antibacterial, Insecticidal, Anti-inflammatory
Katukrohini ^[46]	<i>Picrorrizakurroa</i>	Raktashodhaka (blood purifier), Shothahara (reduce inflammation), Kushthaghna (reduce skin disorder), Lekhana (scrapping), Dahaprashamana (reduce burning sensation)	Kapha-Pitta	Antibacterial, Antimicrobial, Antiviral, Anti-inflammatory
Madhooka ^[47] (mahuaa)	<i>Madhukalongifolia</i>	Vedanasthapana (analgesic), Kushthaghna (reduce skin disorder), Snehana, Stambhana (astriction), Raktapittashamaka	Vata-Pitta	^[48] Spasmolytic, Antibacterial, Insecticidal, antiviral
Shatavari ^[49]	<i>Asparagus racimosus</i>	Vadanasthapana, Raktapittashamaka, Shoolahara	Vata-pitta	^[50] Antibacterial, Antifungal, Tonic, Astrigent, Vermifuge
Vata ^[51]	<i>Ficusbengalensis</i>	Vranashodhana (clearing of wound), Vedanasthapana (analgesic), Rakastambhana (stop bleeding), Vranya (improving the complexion)	Kapha-Pitta	^[52] Antiulcer, Antihelmenthic, Antitumor, Anti-inflammatory, Antibacterial, Antiallergic
Udumbara ^[53]	<i>Ficusracemosa</i>	Vranashodhana (clearing of wound), Vedanasthapana (analgesic), Rakastambhana (stop bleeding), Vranya (improving the complexion)	Kapha-Pitta	^[54] Antiprotozoal, Anti-inflammatory, Antiulcer, Antihelmenthic.
Plaksha ^[55]	<i>Ficuslacor</i>	Vranashodhana (clearing of wound), Vedanasthapana (analgesic), rakastambhana (stop bleeding), Vranya (improving the complexion)	Kapha-Pitta	^[56] Antiprotozoal, CNS stimulant, Antiviral
Parisha ^[57]	<i>Thespesiapopulinea</i>	Vranashodhana (clearing of wound), Vedanasthapana (analgesic),	Kapha-Pitta	Hypoglycemic, Antidiabetic,
Ashvatha ^[58]	<i>Ficusreligiosa</i>	Vranashodhana (clearing of wound), Vedanasthapana (analgesic), Rakastambhana (stop bleeding), Vranya (improving the complexion)	Kapha-pitta	^[59] Antimicrobial, Anti-inflammatory, Analgesic
Wax	-	Kushthaghna (reduce skin disorder), jantughna (reduce infection), Vranaropana (healing of wound), Sandhaneeya (promoting the union of fractured part)	Pitta shamaka	It has been used to prepare ointment

Ghrita ^[60]	-	Ghrita is used in Gulma, Karshya, Daurbalya, Raktapitta, Vata-PPitta Raktajanitavikara.
------------------------	---	--

DISCUSSION

Management of wound has been a great challenge since antiquity for the surgeons throughout the world. Healing is a natural process but inhibited by many factors. The main goal or achievement of shodhanachikitsa is to alleviate these inhibitory factors. Finally at the end of shodhanachikitsa (purification), Dushta Vrana (infected wound) becomes Shuddha Vrana (healthy wound) and Ropanachikitsa has to be followed thereafter. For Dhoopana karma (fumigation) using drugs have qualities to purify the wound by kills micro-organism when used in the form of smoke and keeps the wound clean and hasten healing process. Gauradya Ghrita is effective in wound healing and specific to skin tissue is because of the above mentioned chemical constituents.

1. Carbohydrates like polysaccharides stimulates the collagen synthesis and formation of ground substance i.e. granulation tissue.
2. Protein helps for both collagen synthesis and formation of granulation tissue.
3. Vitamin A increases the inflammatory responses, stimulate collagen synthesis and epithelialization by topical application.
4. Vitamin C stimulates collagen synthesis and cross linking. It influences the formation of hemoglobin, erythrocyte maturation. Its deficiency cause wound infection.
5. Flavonoids act as a antioxidants. They participate in destroying microbes.
6. Tanins have protective & astringent action upon mucus membrane.

Steroids are anti-inflammatory, vasoconstrictor, immune suppressive and anti-proliferative (for scaling lesions) actions. Vitamin A can reverse the inhibitory effect of corticosteroids on wound healing, thus acting as anti-inflammatory. Dhoopana Karma (fumigation) and Gauradya Ghrita for Dushta Vrana to assess their sodhana actions which facilitate healing.

CONCLUSION

Dushta Vrana is a chronic ailment which causes the individual a long term suffering. Proper wound healing it is very much essential to remove the local dushti i.e. the local derangement of dosha's. The local dushti can be removed by Dhoopana Karma and Gauradya Ghrita by virtue of its shodhana (cleaning) and Ropana (healing) action.

REFERENCES

1. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Sutra sthan 21/40, p- 122.
2. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Chikitsa sthan 1/6, p- 04.
3. Manipal manual of Surgery 2nd edition, chapter 01, page no.1.
4. Bailey & love, Short practice of surgery, Edited by Norman S. Williams Christopher J.K. Bestrode & P. Ronan o Connell, chapter 3, Edition 25, page 28
5. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Sutra sthan 22/7, p-123.
6. An Ayurvedic appraisal on concept of wound healing mechanism, by Monica Guleria, Kuldeep R, Published in International Journal of Research in Ayurveda And Pharmacy, 7(suppl 1), Jan-feb 2016.
7. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Sutra sthan 21/19-23, p-117-118.
8. Charaka samhita of Agnivesa, Elaborated by Caraka & Drdhabala edited with Edited with "caraka-chandrika" hindi commentary, by Dr.Bramhanand Tripathi, edition 2012, Choukhambha Surbharati Prakashana, Varanasi, Chikitsa sthan 25/7-8, P- 837.
9. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Sutra sthan 22/7, p-123.
10. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Sutra sthan 22/7, p-123.
11. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Sutra sthan 22/7, p-123.
12. Text book of Pathology, by Harsh Mohan, sixth Edition, Published in JAPEE Brother publisher, New Delhi, chapter 6, page 130.
13. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Chikitsa sthan 1/8, P-05.
14. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Sutrasthan 17/22-23, P-96.
15. A Clinical study to evaluate efficacy of Nimbadya taila in the management of dusta vrana(chronic ulcer) by Gupta Sudesh, Published in IJRAP 3(6), Nov-Dec 2012.
16. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Chikitsa sthan 1/74, p-12.
17. Ayurvedic perspective of dusta vrana (non healing ulcer) by Prem Chandra, published in IAMJ, ISSN:2320-5091
18. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Sutra sthan 19/28, p-105.
19. Sushruta Samhita of Maharshi Sushruta edited with Ayurveda tattava sandipika by Kaviraj Ambika dutta Shastri, Reprint 2012, Published in Chaukhambha Sanskrit Sansthan, Varanasi, Chikitsa sthan 1/133, p-16
20. Yogaratnakar With Vidyotini hindi commentary By Vaidya Laxmipati Shastri Edited by Bhisgratna Bramhashankara Shastri, Edition: Reprint 2013, Chaukhambha Prakashana, Varanasi, Uttrardha Sadyovrana Chikitsa/1-4, p-183.
21. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 162 Chaukhambha Bharati Academy. Varanasi. 2001.
22. Therapeutic importance of haridra (curcuma longa linn.) In the management of madhumeha w.s.r to diabetes mellitus-type 2 (niddm), by megha, published in World journal of pharmacy and pharmaceutical sciences, Volume 4, issue 09, 355-369
23. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 537 Chaukhambha Bharati Academy. Varanasi. 2001.
24. Phyto-pharmacology of *berberis aristata* dc: a review, By Mazumder papiya mitra, Journal of Drug Delivery & Therapeutics; 2011, 1(2): 46-50.
25. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 800 Chaukhambha Bharati Academy. Varanasi. 2001
26. Manjistha (*rubia cordifolia*) - a helping herb in cure of acne, by Vandana meena, published in journal of Ayurveda & Holistic Medicine, volume 3, Issue 2.
27. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 31 Chaukhambha Bharati Academy. Varanasi. 2001
28. A review article on phytochemistry and Pharmacological profiles of *Nardostachys jatamansi* DC-medicinal herb, by Purnima, Meenakshi Bhatt, published in Journal of pharmacogony and photochemistry 2015; 3(5): 102-106
29. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 253 Chaukhambha Bharati Academy. Varanasi, 2001
30. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 582 Chaukhambha Bharati Academy. Varanasi, 2001
31. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 644 Chaukhambha Bharati Academy. Varanasi. 2001
32. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 64 Chaukhambha Bharati Academy. Varanasi, 2001
33. Sedative and sleep-enhancing properties of linarin, a flavonoid-isolated from *Valeriana officinalis*, By Sebastian Ferna, Pharmacology, Biochemistry and Behavior 77 (2004) 399-404.
34. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 370 Chaukhambha Bharati Academy. Varanasi. 2001

35. A review on *Cyperus rotundus* as a tremendous source of pharmacologically active herbal medicine, By Bhaskar Das. International Journal of Green Pharmacy 2015; 9(4):198.
36. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 718 Chaukhambha Bharati Academy. Varanasi. 2001
37. Antibacterial activity of *pterocarpus centenelinus*, by B.K. Manjunatha, published in Indian journal of pharmaceutical science 2006: 68(1)115-116
38. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 178 Chaukhambha Bharati Academy. Varanasi. 2001
39. Use of flow cytometry to measure the immunostimulatory activity of aqueous extract of *Jasminum auriculatum*, by Amit Gupta, published in International Journal of Current Advanced Research vol 4, issue 5, pp 87-91, May 2015
40. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 149 Chaukhambha Bharati Academy. Varanasi. 2001
41. Biological activities and medicinal properties of neem (*Azadirachta indica*), by Kausik Biswas, published in Current Science, vol. 82, no. 11, 10 June 2002.
42. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 697 Chaukhambha Bharati Academy. Varanasi. 2001
43. Pharmacological potentialities of *Trichosanthes dioica* Roxb. (Cucurbitaceae): an overview by Srijita Duta, published in International Journal of Drug Formulation and Research volume 6 Issue 3 May-June 2015
44. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 144 Chaukhambha Bharati Academy. Varanasi. 2001
45. *Pongamia pinnata* L.: A Comprehensive Review, S.R. Arote, published in International Journal of PharmTech Research, ISSN: 0974-4304, Vol. 2, No. 4, pp 2283-2290, Oct-Dec 2010
46. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 441 Chaukhambha Bharati Academy. Varanasi. 2001
47. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 213 Chaukhambha Bharati Academy. Varanasi. 2001
48. Review on *Glycyrrhiza glabra*, by Kumar Anil, Journal of Pharmaceutical and Scientific Innovation 1 (2), March-April 2012.
49. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 562 Chaukhambha Bharati Academy. Varanasi. 2001
50. The Chemistry, Pharmacological and Therapeutic applications of *Asparagus racemosus*, by Velavan Sivanandham, Pharmacognosy Reviews, Vol 1, Issue 2, Jul-Dec, 2007
51. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 664 Chaukhambha Bharati Academy. Varanasi. 2001
52. Mechanism of action antiatherogenic and related effect of *Ficus bangalensis* Linn. Flavonoids in experimental animals, by Regi Susan Daniel, Published in Indian Journal of Experimental Biology vol 4(1), April 2003, p- 296-303
53. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 666 Chaukhambha Bharati Academy. Varanasi. 2001
54. Anti-amnesic effect of *Ficus religiosa* in scopolamine-induced anterograde and retrograde amnesia, by Harjeet Kaur, published in *Pharmaceutical Biology*, 2010; 48(2): 234-240
55. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 670 Chaukhambha Bharati Academy. Varanasi. 2001
56. Clinical evaluation of panchavalka - a review article, by Gajarmal Amit A, published in Unique Journal of Ayurvedic and Herbal Medicines 2014, 02 (04): page 6-9
57. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 680 Chaukhambha Bharati Academy. Varanasi. 2001
58. Sharma, P.V. Dravya-guna Vijanana. Vol. II. Page 668 Chaukhambha Bharati Academy. Varanasi. 2001
59. Ethnomedicinal, phytochemical and pharmacological profile of *Ficus religiosa* Roxb, by Satish A. Bhalerao, published in *Int. J. Curr. Microbiol. App. Sci* (2014) 3(11) 528-538.
60. Investigation of the wound healing activity of *Tilvadi Ghrita*: a herbal formulation, by M.S. Charde, Published in Indian Journal of Traditional Knowledge, Volume, 3(3), July 2004.

HOW TO CITE THIS ARTICLE

Sahu P, Chandrakar S, Singh B, Aradhana T. Role of Dhoopan Karma and Gauradya Ghrita in the management of Dushta Vrana (infected wound). *J Phytopharmacol* 2017;6(2):194-199.