

Review of *Lakshadi Gana* with special reference to *Dushta Vrana*

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ABSTRACT

Introduction: Natural process of *Vrana Ropana* is achieved in a *Shuddha Vrana* (clean or non contaminated wound) which can sustain in the body for lifetime in the form of *Vrana Vastu* (scar). But in case of *Dushta Vrana* (contaminated wounds), if it is healed spontaneously, anyhow will recur. *Vrana Shodhana & ropana* of such type of chronic or infected wounds is still a major challenge for the medical fraternity. **Objective:** The purpose of this review is to provide an ancient and latest scientific knowledge regarding *Lakshadi gana* especially in context to *dushta vrana*. **Data Source & Review Method:** *Lakshadi Gana* is mentioned in *Sushruta Samhita* as *krimihara & dushtavranavishodhana* in chapter *dravyasangrahaniya* in which he mentioned group of drugs in brief. Detailed properties of all the 11 drugs of *Lakshadi gana* with special reference to *dushta vrana* from *ayurvedic* literature as well as latest researches available from multiple databases has been gathered & reviewed. **Result:** Predominant *Rasapanchaka* of *Lakshadi gana* has *Tikta, Kashaya* and *Madhur rasa, Lagu* and *Ruksha guna, Ushna virya* and *Katu vipaka*. Most of the drugs contains active chemical constituents which has antimicrobial, antidiabetic & antioxidant properties. **Conclusion:** These drugs can be helpful in treating the problems related to *vrana chikitsa*, especially in case of *dushta vrana* which is in fact major concern in practice of *shalya chikitsa*.

Key Words *Suddha vrana, Dushta vrana, Lakshadi gana*

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INTRODUCTION

Vrana (wound) is an injury or destruction of the body tissues which may be due to trauma or surgery which typically involves breaking of continuity of skin or tissue lining and usually damage to underlying tissues of the body. It is called *vrana* as it causes destruction or damage of tissue or body part. The *vrana ropana* is a natural

phenomenon of the body which is initiated within hours after the *vrana* is created or developed. But when there is infection or delayed healing, then it is known as “*Dushta vrana*”. The *vrana* may be narrow or widened, mouth too hard or too soft, raised from their surface or depressed, too cold or too hot to touch and the colour may be black red-

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yellow or white and is characterized by extreme temperature.

The signs and symptoms of *dushtavrana* include redness, warmth, swelling, pain and loss of function with or without pus discharge & foul odour coming from it. If these *vrana* not timely treated or intervened then it may progress to septicemic shock and occasionally may prove fatal. Dealing with *vrana* is to achieve perfect *vrana ropana* but sometimes many factors lead to unsatisfactory results and *vrana ropana* is achieved with results which are not accepted for many reasons. *Acharya Sushruta* advocated

numerous herbal drugs as *Vrana Shodhana* and when the *vrana* transforms into *shuddha vrana*, then *Vrana Ropana* drugs used.

Vrana Shodhana means to make a *vrana* free from *dosha* involvement & it is the important step before *ropana karma* is initiated. *Ropana karma* will finally achieve *vrana rohana*. According to *Acharya Sushruta*, group of drugs in the *Gana* having *krimikushtahar* as well as *dushtavrana vishodhana* property are used for the purpose of *vrana shodhana* in various forms. Also they have potency to get rid of pain originated due to vitiated *kapha* & *pitta dosha*.

Table 1 Description of *Lakshadi gana* drugs with botanical name, family, english name & their useful parts²

Name of Drug	Botanical Name	Family	English Name	Useful Part
<i>Laksha</i>	Laccifer lacca	Lacciferadae	Lac	Resin
<i>Amaltas</i>	Cassia fistula Linn	Caesalpinioideae	Purging cassia	Leaves
<i>Kutaj</i>	Holarrhena antidysenterica Linn	Apocynaceae	Kurchi	Bark
<i>Ashwamar</i>	Nerium indicum Mill	Apocynaceae	Indian oleander	Roots
<i>Katfal</i>	Myrica esculenta Buch-Ham.	Myricaceae	Box myrtle	Bark
<i>Haridra</i>	Curcuma longa Linn	Zingiberaceae	Turmeric	Rhizome
<i>Daruharidra</i>	Berberis aristata DC	Berberidaceae	Indian barberry	Roots/ Stemwood
<i>Nimba</i>	Azadirachta indica A.Juss	Meliaceae	Margosa Tree	Bark
<i>Saptaparna</i>	Alstonia scholaris R.Br.	Apocynaceae	Dita	Bark
<i>Jati</i>	Jasminum officinale Linn	Oleaceae	Spanish or common jasmine	Leaves
<i>Traymana</i>	Gentiana kurroa Royle	Gentianaceae	Indian Gentian	Roots

Lakshadi Gana (Table 1) is described in *Sushruta-samhita*¹ as *kushthakrimihar* & *dushtavranavishodhana* in *dravyasangrahaniya adhyaayain* which he mentioned 37 group of drugs as *Gana* in brief & further he explains these drugs in *chikitsa sthana* as per use.

While describing the various drugs in the *gana* it is advocated to use those drugs in various forms like *taila*, *lepa*, *panaka*, *Kashaya* or *ghrita* as per requirement and decided by the *chikitsaka*.

MATERIALS & METHODS

In *Sushruta-samhita*, all the drugs mentioned in *lakshadi gana* are described as *dushtavranavishodhani* & *krimikushtahara*. In this paper, the information gathered from different classical text of *dravyaguna*, studies published in different journals related to all the drugs of *lakshadi gana*. Also, with the review of properties of these drugs, probable mode of action on *vrana* has been described.

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The table 1 is showing name, botanical name, family, common name and part mostly used in preparation of medications like *taila*, *lepa*, *panaka*, *kashaya* or *ghrita*. Parts commonly used in the preparation of various formulations or used

in isolation are probably described to indicate that these parts of might be most potent when used, moreover these parts are easily available commercially as well for use.

Table 2 Details of *Rasa*, *Guna*, *Virya*, *Vipaka*, *Dosha karma* & main *karma* of individual drugs³

Name of Drug	<i>Rasa</i>	<i>Guna</i>	<i>Virya</i>	<i>Vipaka</i>	<i>Dosha karma</i>	Main <i>karma</i>
Laksha	<i>Kashaya, Tikta, Madhur</i>	<i>Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kaphapittashamak</i>	<i>Vranaropaka Churna, Vednashaman, Daha-Prashaman, Shothahara & Krimihara Properties</i>
Amaltas	<i>Madhur</i>	<i>Guru, Mridu, Snigdha</i>	<i>Sheeta</i>	<i>Madhur</i>	<i>Vatapittashamak</i>	<i>Kushtagna, Shothahara</i>
Kutaj	<i>Tikta, Kashaya</i>	<i>Lagu, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kaphapittashamak</i>	<i>Amahar</i>
Ashwamar	<i>Tikta, Katu</i>	<i>Lagu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatashamak</i>	<i>Vrana laghavkrit, vranopaham</i>
Katfal	<i>Tikta, Kashaya</i>	<i>Lagu, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatashamak</i>	<i>Pramehagna, kandugna,</i>
Haridra	<i>Tikta, Katu</i>	<i>Lagu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridoshashamak</i>	<i>Varnya, Vranopaham</i>
Daruharidra	<i>Tikta, Kashaya</i>	<i>Lagu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphapittashamak</i>	<i>Vrananut, Mehanut</i>
Nimba	<i>Tikta, Kashaya</i>	<i>Lagu</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kaphapittashamak</i>	<i>Vrananut, Mehanut</i>
Saptaparna	<i>Tikta, Kashaya</i>	<i>Lagu, Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosha shamak</i>	<i>Vranajit, Kramigna</i>
Jati	<i>Tikta, Kashaya</i>	<i>Lagu, Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosha shamak</i>	<i>Vranajit</i>
Traymana	<i>Tikta</i>	<i>Lagu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosha shamak</i>	<i>Vranajit</i>

Details of *Rasa*, *Guna*, *Virya*, *Vipaka*, *Dosha karma* & main *karma* of these plants are mentioned in table 2. Most of the these plants have the *tikta*, *kashaya* & *madhura rasa*, *lagu* & *ruksha guna*, *ushna virya*, *katu vipaka* & *tridhosshamaka* properties as *dosha karma*. Also, most of them have properties of *vranahar*, *krimigna* and *pramehagna* as mentioned as main *karma* in table. With these properties, they may be helpful to remove infections as well as

promote the healing process in *dushta vrana*, which are difficult to heal in a way a *shuddha vrana* heals. Chemical constituents of all these plants are mentioned with their pharmacological actions. Most of these pants have antimicrobial, antibacterial & antioxidant action. Also in *Laksha*, *Katphal*, *Saptaprana*, *Nimba*, *Haridra* & *Jati* have anti-ulcer and wound healing properties.

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Table 3 Chemical Constituents & Pharmacological Actions

Name of Drug	Chemical constituents	Pharmacological action
<i>Laksha</i>	---	Mild abrasive action- which aids in eliminating plaque through cleaning & polishing wound surface ^[4]
<i>Amaltas</i>	Anthoquinone, tennin	Antifungal, antibacterial, antioxidant, antitussive, analgesic
<i>Kutaj</i>	Conessin	Antidiabetic, antihyperglycemic, antibacterial (s.aureus, vibrio cholerae, e.coli, s.pseudomonas, antioxidant activity)
<i>Ashwamar</i>	Neriodorin, karabin, scopolin	Hypoglycemic, antimicrobial, antioxidant, anti-inflammatory & anti-cancerous
<i>Katfal</i>	Myricitrin	Analgesic, antihistaminic, antidiabetic, antiulcer, antimicrobial mostly gram + & antioxidant
<i>Haridra</i>	Curcumin	Anti-inflammatory, antioxidant, anticoagulation, anti-cancerous and anti-infective effect, antidiabetic ^[5]
<i>Daruharidra</i>	Berberine	Antimicrobial (nocardia s., S.pneumonia, E.coli) , hypoglycemic
<i>Nimba</i>	Nimbin, nimbidin	Antibacterial (S.aureus, staphylococcus pyogen, E.coli, pseudomonas aeruginosa), hypoglycemic ^[6] activity, ethanol abstract so antibacterial activity, anti-inflammatory, antioxidant, anti-cancerous, wound healing ⁷
<i>Saptaparna</i>	Ditamine,echitamine, echicerine, echitin	Anti-diarrheal, hepatoprotective, antiulcer, wound healing, analgesic immunomodulator & chemo-sensitization action
<i>Jati</i>	Jasminine, salicylic acid	Antibacterial, antimicrobial, antioxidant, wound healing, anti ulcer ⁸
<i>Traymana</i>	Gentiopicrin, pectin	Antibacterial, antiinflammatory, immunomodulator

Chemical constituents of all these plants are mentioned with their pharmacological actions in table 3. Most of these plants have antimicrobial, antibacterial (S.aureus, E.coli, S.pneumonia etc.) & antioxidant action. Also in *Laksha*, *Katphal*, *Saptaprana*, *Nimba*, *Haridra* & *Jati* have anti-ulcer and wound healing properties.

In *dushta vrana*, there is lodgement of several microbes & collection of pus or debris occurs which is difficult to remove. This microbial growth can be restricted & removed by formulations of these drugs having potent chemical constituents as mentioned. So, these drugs of *lakshadi gana* may have potential to act as *sodhaka* as well as *ropaka* & ultimately helps in treatment of *dushta vrana*.

DISCUSSION

Amongst *Shashthi upkrama kashaya*, *varti*, *kalka,ghrita*, *taila*, *raskriya* & *avchurnana* etc. are different modalities which are specifically

mentioned for the treatment of *vrana to achieve vrana shodhana*. Drugs described in the *lakshadi gana* can also be useful for treatment of *dushta vrana* in the form of *kashaya*, *taila*, lotion, ointments etc because of their antimicrobial properties as mentioned as per textual references. Other forms of use of these medications can be thought of after scientific research keeping in mind various factors related to wound healing which should not be difficult in the present time.

Mode of action

Predominant *Rasapanchaka* of *Lakshadi gana* is *Tikta*, *Kashaya* and *Madhur rasa*; *Lagu* and *Ruksha guna*; *Ushna virya* and *Katu vipaka*. These drugs are also having antimicrobial, antibacterial, antioxidant, anti-ulcer and wound Healing (*Laksha*, *Katphal*, *Saptaprana*, *Nimba* and *Haridra*, *Jati*) properties. Mode of action of these drugs of *lakshadi gana* is found mentioned in *ayurvedic* literature as well as in the modern literature regarding their efficacy in *vrana*

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shodhana as well as *ropana*. We have scientific evidence regarding anti-infective potential of these drugs which might be responsible for the *vrana shodhana* property. Other properties are like ulcer protecting, promotion of wound healing and antiinflammatory properties, antioxidant property can have role in the management of *dushta vrana*. Predominant *rasapanchaka* of *Lakshadi gana* has been mentioned to be useful in the *dushta vrana*.

Vishodhan of *dushta varna* is said to be achieved by -

Kleda upshoshana → *Katu, Tikta & Kashaya rasa* and *Katu vipaka & Ruksha guna*

➤ *Kriminash, kandu vinash* → *Katu* and *Tikta rasa*

➤ *Dushta mamsa-vilekhan, Varna avsadanau* → *Katu rasa*⁹

➤ *Ropana, Sandhanand Sthambhana* → *Kashaya rasa*¹⁰

➤ *Vata-Pitta-Kaphahar* properties

➤ *Vranahar, krimigna, pramehahar*

So it can be concluded that *Lakshadi Gana* has been mentioned for the treatment of *dushta vrana* in *ayurveda* literature as well as evidences can be found which indicate that these drugs are having the properties which can be helpful in the treatment of *dushta vrana* in various way.

CONCLUSION

It can be concluded that drugs of *lakshadi gana* mentioned in the *sushruta-samhita* can be used in various forms in the treatment of the *dushta vrana*. Based on textual reference as well as

modern scientific methodology drugs of this group can be evaluated and validated in the management of *dushta vrana*.

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