



## Review Article

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### A REVIEW ON WOUND HEALING POTENTIAL OF CHANDANADI TAILA

Netam Tripti <sup>1\*</sup>, Singh Balendra <sup>2</sup>, Nirmalkar Uttam <sup>3</sup>, Nirmal Satrupa <sup>3</sup>

<sup>1</sup> PG Scholar, Department of Shalya Tantra, Government Ayurved College, Raipur, Chhattisgarh, India

<sup>2</sup> HOD and Reader, PG Department of Shalya Tantra, Government Ayurved College, Raipur, Chhattisgarh, India

<sup>3</sup> Lecturer, PG Department of Shalya Tantra, Government Ayurved College, Raipur, Chhattisgarh, India

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**\*Corresponding author**

E-mail: triptinetam92@gmail.com

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**ABSTRACT**

Injuries are inescapable events of life. It affects human beings physically and economically. Major population of the world suffering from road traffic accident or pathological ulcers like vascular ulcer, pressure ulcer etc. In ancient time, many wound healing formulation and therapies were used for the management of Vrana (Wound). Now-a-days, ulcers are treated with steroid or other antimicrobial topical ointment but they are not very much effective to manage the ulcer. Many wound healing formulations are described in Sushruta Samhita, Chandanadi taila is one among them. Topical application of Chandanadi taila helps to act as anti-inflammatory, antibacterial, analgesic, antioxidant. It has great potential to debride the ulcer, enhance blood circulation results in reduction of healing time. Chandanadi tail is very effective to alleviate impaired skin integrity.

**Keywords:** Wound, Vrana, Ulcer, Chandanadi taila.

**INTRODUCTION**

The frequency of injury is more common than any other pathology. Wound is that which compel one to pray to lord till his life exists. Vrana means “Gatravichurnane” destruction of body part or tissue and “Gatravaivarnya karoti” discoloration of skin or scar formation<sup>1,2</sup>. Scar of wound never cease to be visible even after proper healing and scar persist till death. Vrinoti word is mentioned in Sushruta Samhita for wound that meaning is covering (Achhadana) in that manner wound is called Vrana<sup>3</sup>. Vrana is classified into 2 category Nija Vrana and Agantuja Vrana. Nija Vrana is caused due to aggravation of Tridosha and Shonita. It appears in various combination of one Dosha or in combination of two or more Doshas. Agantuja Vrana is caused due to transfer of any form of energy into the body which can be either to an externally visible structure like the skin or deeper structure like muscle, tendon etc<sup>4</sup>. Human body is made up of Tridhatu. There is no any pathology without Doshas. In condition of Vrana, there is no pain without aggravated Vata neither there is any suppuration without Pitta nor there is any pus without aggravated Kapha and hence at the period of suppuration all three Doshas takes part<sup>5</sup>. Wound healing is a complex mechanism where by body attempts to restore the integrity of

injured part. Acharya Sushruta had been broadly explained the Vrana and their management. Healing of wound is a challenging work to surgeon in immemorial time and even in modern era. In modern science many antibacterial medicines are available with their limitation. Wound and their management are basic to the practice of surgery. The surgeon deed is to reduce the adverse effect of wound, remove or repair damaged structure. Ayurveda is a science of medicine where there are so many pieces of gems available to dealt wound without any complication. Acharya Sushruta had knowledge of importance of wound management and had described Shashtiupakrama / 60 measures for wound healing. Application of taila was one among the 60 treatment modalities described by Acharya Sushruta<sup>6</sup>. Taila is used as an external application in Vrana. Acharya Sushruta had been mentioned Chandanadi taila as a potent wound healing drug.

**Drug description**

There is no any substance in the world which is not medicinal, substance endowed fully with effective<sup>7</sup>. Chandanadi taila is consist of the following drugs mentioned in Table 1 and physical properties of drugs are describe in Table 2 and pharmacological activities are explain in Table 3.

**Table 1: Contents of Chandanadi taila**

S. No.	Classical name	Botanical name	Family	Useful part	Quantity
1.	Chandan	<i>Santalum album</i>	Santalaceae	Heartwood	1part
2.	Padmak	<i>Prunus cerasoides</i>	Rosaceae	Stembark	1part
3.	Lodhra	<i>Symplocos racemose</i>	Symplocaceae	Stembark	1part
4.	Utpal	<i>Nelumbo nucifera</i>	Nymphaeaceae	Flower	1part
5.	Priyangu	<i>Callicarpa macrophylla</i>	Verbenaceae	Flower	1part
6.	Haridra	<i>Curcuma longa</i>	Zingiberaceae	Root	1part
7.	Yashtimadhu	<i>Glycyrrhiza glabra</i>	Leguminosae	Root	1part
8.	Tila taila	<i>Sesamum indicum</i>	Pedaliaceae	Seed oil	4 times from total amount of kalka dravya
9.	Cowmilk	.....	.....	.....	4 times of tila taila <sup>8</sup>

### Preparation of Chandanadi taila

All herbal ingredients taken in equal amount except milk. Kalka is prepared by mixing all herbal ingredients. Tila taila is taken 4 times from total amount of given drugs. Milk is taken 4 times of tila taila after that the taila paka is done<sup>9</sup>.

**Table 2: Physical properties of Chandanadi taila ingredients**

S. No.	Drug name	Rasa	Guna	Veerya	Vipaka	Doshagnata
1.	Chandan <sup>10</sup>	Tikta Madhura	Laghu, Ruksha	Sheeta	Katu	Kaphapitta shamaka
2.	Padmak <sup>11</sup>	Kashaya, Tikta	Laghu	Sheeta	Katu	Kaphapitta shamaka
3.	Lodhra <sup>12</sup>	Kashaya	Laghu	Sheeta	Katu	Kaphapitta nut
4.	Utpal <sup>13</sup>	Madhura Kashaya	Picchila, Snigdha	Sheeta	Katu	Tridosahara especially vatapitta shamaka
5.	Priyangu <sup>14</sup>	Madhura, Tikta, Kashaya	Ruksha, Sheetal, Guru	Sheeta	Katu	Pittahara, Kaphahara
6.	Haridra <sup>15</sup>	Tikta, Katu	Ruksha	Ushna	Katu	Kaphapitta nut
7.	Yastimadhu <sup>16</sup>	Madhura	Guru Snigdha	Sheeta	Madhura	Vatapittahara
8.	Tila taila <sup>17</sup>	Madhura	Snigdha, Guru Sukshma, Vyavayi, Visada, Sara, Vikasi	Ushna	Madhura	Vata shamaka
9.	Cowmilk <sup>18</sup>	Madhura	Mridu, Snigdha, Shlakshna, Picchila, Guru,	Sheeta	Madhura	Vatapittahara, Raktapittahara

**Table 3: Therapeutic uses and pharmacological activity of Chandanadi taila ingredient**

S. No.	Drug name	Karma	Therapeutic uses	Pharmacological activity
1.	Chandan <sup>10</sup>	Ashrut, Dahaprashaman, Durghandhhara, Varnya, Rakta shodhaka,	Rakta vikara, Vrana vikara	Antibacterial, Antifungal, Antioxidant
2.	Padmak <sup>11</sup>	Ashrajit, Visphot- Vranapaham, Kandughna, Dahaprashaman, Vedanasthapana, Raktastambhan	Shotha, Vrana	Antioxidant, Analgesic, Antibacterial activity
3.	Lodhra <sup>12</sup>	Shothahara, Vrana Ropana, Shonitsthapana, Rakta shodhaka, Dahashamak <sup>19</sup>	Shothapi	Antimicrobial Anti-inflammatory
4.	Utpal <sup>13</sup>	Dahaprashaman, Raktaprasadaka	Daha	Anti-inflammatory, Analgesic, Antimicrobial
5.	Priyangu <sup>14</sup>	Rakta prasadana, Daurgandhyanashana, Dahaprashaman, Rakta shodhaka, Vedanasthapana, Sandhaneeya <sup>20</sup>	Daha, Rakta dosha Foul ulcers <sup>20</sup>	Anti-inflammatory
6.	Haridra <sup>15</sup>	Varnya, Kusthaghna, Krimighna, Raktaprasadan, Vrana shodhana, Vrana Ropana, Vednasthapan <sup>21</sup> vranahanti, vishodhaniya,	Vrana Shoth <sup>21</sup>	Antibacterial, insecticidal, Antifungal, Anti-inflammatory, Antiprotozoal, Antihistaminic
7.	Yastimadhu <sup>16</sup>	Varnya, Raktaprasadan, Ropaniyanam <sup>22</sup>	Vranashoth Vrana, sadyakshata <sup>23</sup>	Anti-inflammatory, Antimicrobial, Antioxidant, Antiulcer.
8.	Tila taila <sup>17</sup>	Vedanasthapana, Sandhaneeya, Vranashodhana, Vrana Ropana.	Vrananua, All types of Sadyovrana <sup>24</sup> Bhagna, Ksharagni dagdh, Agantuja Vrana <sup>25</sup>	Antioxidant, Antiulcer, Anti- inflammatory, Analgesic
9.	Cowmilk	.....	.....	Antioxidant, Anti-inflammatory

### DISCUSSION

The contents of Chandanadi taila is Tridosahara especially Pittakapha Shamaka. Predictable mode of action of Chandanadi taila can be understand as follows.

#### Rasa

Tikta, Madhura, Kashaya Rasa is predominantly found in its content. Tikta rasa having Dahaprashaman, Kandughna, Krimighna and Dhatushoshan property. Kashaya rasa having Shoshana, Stambhana, Rakta Prashamana, Ropana effect. Madhura rasa having Dhatuvarhdhana, Dahaprashaman, Sandhankar<sup>26</sup>. Tikta, kashaya, madhura rasa act to decrease the level of Pitta Kapha Dosha.

#### Guna

The Chandanadi taila having laghu and ruksha guna predominantly. Laghu Guna helps to reduce Kleda or discharge of wound (Kapha), it reduces the Mala and cleans the channels of Srotas. Ruksha Guna subside the Kleda part of wound and result in Stambhana, Shoshana, Rukshana. Vishada Guna helps to wash away the impurities from Dhatus. It acts as Lekhana, Shoshana and Vranaropana. Sukshma Guna dilate the vessels and improve the circulation of blood or nutrient<sup>27</sup>. Taila having naturally snigdha and guru guna, it nourishes the dhatus and improve the cell regeneration.

#### Vipaka and Veerya

It is Katu, it reduces Kapha Dosha and Sheeta veerya is an active property of medicine. It reduces bleeding and pus discharge.

Pharmacological activities of Chandanadi taila can be understood with the help of active component of each drug.

#### Chandan

Palmitate,  $\beta$ -sitosterol,  $\alpha$  and  $\beta$ -santalol are its major active component<sup>10</sup>. Palmitate is a form of Vitamin A. Vitamin A stimulates the epithelial growth, fibroblast, granulation tissue, angiogenesis, collagen synthesis. Sandalwood has anti-inflammatory, antibacterial, antifungal activities<sup>28</sup>. An anthocyanic pigment cyaniding-3-glucoside from *Santalum album* was shown to be antioxidant and nutritionally important. Sandalwood is potent antioxidant<sup>29</sup>.

#### Padmak

Padmak active component is Flavonoids. Most flavonoids exert antioxidant, anti-inflammatory, antibacterial and astringent activities that helps in infection control. Topical application of flavonoids reduces wound closure time in diabetic ulcer foot<sup>30</sup>.

#### Lodhra

Bark mainly contains Loturine, Isoloturine alkaloids, Palmitate glycosides, Symplocoside component which helps to act as analgesic, anti-inflammatory, antimicrobial activities<sup>31</sup>.

#### Utpal

Its major constituent is Tannin. It also leads to improve wound healing and reduce scar formation by removal of reactive oxygen substances. It has analgesic and antimicrobial effect and it promotes epithelialisation<sup>32</sup>.

#### Priyangu

It contains Tetracyclic diterpenes, Calliterpenone, Oleanolic acids<sup>33</sup>. This content gives antioxidant property to medicine.

#### Haridra

Its major active principle is Curcumin. It has been revealed to possess Anti-inflammatory, Antioxidant, Anticoagulation, Antiseptic effect. Curcumin has also been shown to have significant wound healing properties<sup>34</sup>.

#### Yashtimadhu

The root main sweet component is glycyrrhizin the main triterpene, saponin of licorice and its biologically active metabolite of glycyrrhetic acid are both known for their anti-inflammatory property<sup>35</sup>.

#### Tila taila

Sesame seed contain many phytochemical compounds like Vitamin A, E, C, and Flavonoids, Glycolipids, 9 Essential amino acids. These compounds impart many of the pharmacological activities like antioxidant, antibacterial, anti-inflammatory, antiulcer activities<sup>36</sup>. Topical administration of sesame oil suggested its potent antioxidant activity. Sesame oil increases healthy blood circulation towards ulcer because Arginine derived Nitrous oxide is dilate capillaries. It helps to bring a flood of nutrients saturating the malnourished tissue with new life<sup>37</sup>.

#### Cow milk

Cow milk contains Several antioxidants, Vitamin and calcium etc. Calcium and Vitamin A both can play important role to speed up wound healing mechanism and increment of healing quality. Vitamin C enhance the protective mechanism of the immune system to accelerate the healing process<sup>38</sup>. All these nutrients give the faster healing effect to wound.

Reactive oxygen species are produced at the site of injury, which are known to impair the healing process by causing damage to cellular membrane. Several antioxidants such as curcumin, vitamins specially vitamin E, tannin, flavonoids, oleanolic acid, glycosides, essential amino acids have been proved to give protection against oxidative damage to tissues. The use of antioxidants stimulates bactericidal action and wound healing activity.

#### CONCLUSION

Wounds are the inevitable events; many therapeutic measures are described for the management of wound in classical texts. Chandanadi taila is described as Uttama Vranaropaniya drug. Most of the ingredient having Tridosahara especially Kaphapitta Shamaka property. Chandanadi taila have potentiality to hinder the pathogenesis of Vrana. Aggravated Vata is a cause of pain and there is no pain without aggravated Vata neither there is any suppuration without Pitta nor there is any pus without aggravated Kapha and hence at the time of suppuration all the three Doshas takes place. Chandanadi taila having great potential to balance all the three Doshas. It encourages adequate perfusion and stops suppurative phenomena and cleans the wound. Most of the ingredient having antioxidant, anti-inflammatory, antibacterial, antiulcer, analgesic activity which will provide faster healing effect. Many topical antimicrobials affect the healthy granulation tissue, or toxic to the body and therapies are cost prohibitive but Chandanadi taila is nontoxic, economical and helps to enhance the healing process of wound.

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