

## ASHWAGANDHA: A SILENT WOUND HEALER

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### ABSTRACT

*Ashwagandha* is one main drug in *Ayurveda* Materia Medica. Widely accepted for therapeutic uses - *Kshaya* (Emaciation) *Shwasa* (Dyspnoea) *Shotha* (inflammation) and *Vrana* (wound). As a folklore medicine, it is used for management of wound as healing promoter medicine in south Haryana. In classics of *Ayurveda* references are found regarding wound healing effect of this drug. Large scale studies are needed to prove its clinical efficacy in wound healing. Wound is defined as Discontinuity in skin or mucous membrane. Wound healing is a complex cellular and biochemical process that leads to restitution of integrity and function.

**Keywords:** *Ashwagandha*, *Withania somnifera*, folk medicine, wound healing

### INTRODUCTION

*Withania somnifera* is commonly known as *Ashwagandha*, Indian ginseng, poison gooseberry, or winter cherry. Chronic wounds have a significant impact on the health and quality of life of patients and their families, causing pain, loss of function and mobility, depression, distress and anxiety, embarrassment and social isolation, financial burden, prolonged hospital stays and chronic morbidity or even death.

People not only from India but from all over the world are looking today safer and effective alternatives for diseased condition with minimum negative offshoots.

People are turning to *Ayurveda* medicine with much hope and expectations. The demand of plant based therapeutics is increasing day by day both in developing and developed country due to growing recognition that they are natural, are non or least toxic, have no or least side effect, are easily available at affordable prices. Medicinal plant in India, have traditionally occupied an important position in the socio cultural, spiritual and medicinal field. Plant based drug research now has become one of the important global trust<sup>1</sup>.

### Botanical Description of *Ashwagandha*:

*Withania somnifera* is a small sized under shrub; grow up to a height of 1.5 meter.

**Table 1:** Showing botanical description of *Ashwagandha*

<b>Leaves</b>	5 to 10 cm long, sub acute, entire, more or less pubescent, petiolate (petioles 6-13mm).
<b>Flower</b>	Flowers are small and pale green as small cluster on axillaries branches, usually 5 together in a sessile umbellate cymes.
<b>Fruit and seed</b>	Berry red, smooth, globose, slightly 5-angled, seeds 2.5 mm yellow somewhat scurfy.
<b>Root</b>	The root is long, tapering light brown in colour <sup>2</sup> .

Withania Somnifera is prone to several pests and diseases. Leaf spot disease caused by *Alternaria alternata* is the most prevalent disease, which occurs

in a severe form in Punjab, Haryana, and Himachal Pradesh. A decline in the concentration of its secondary metabolites occurs by leaf spot disease.<sup>3</sup>

**Table 2:** Showing Synonyms:<sup>1</sup>

<i>Ashwagandha</i>	root having smell, resembling to horse.
<i>Varahakarni</i>	leaves resembling pig's ear
<i>Kamarupani</i>	it promotes complexion.
<i>Marutaghni</i>	useful in Vatika disorders
<i>Balada</i>	promotes strength
<i>Putrada</i>	provide male progeny
<i>Kanchuka</i>	helps to retain semen

**Table 3:** Showing description about *Ashwagandha*

<b>Name</b>	<b>Description<sup>2</sup></b>
<b>Latin Name</b>	<i>Withania somnifera</i> Linn. Dunal ( Withania=Withan (scientist) <sup>3</sup> )
<b>Family</b>	Solanaceae =sleep producing
<b>Kula</b>	Kantakari Kula
<b>Gana</b>	<i>Balya, Brunghaniya, Madhurskanda</i>
<b>Vernacular Name</b>	<i>Hindi : Asgandh</i> <i>Sanskrit : Ashvagandha, Balada, Gandhpatri, Kamrupini, Vajini</i> <i>Gujarati : Asam, Asoda, Ghodasoda</i> <i>Punjabi : Asgand</i> <i>Telugu : Asvagandhi, Pennereu, Vajigandha</i> <i>Tamil : Asuragandhi, Amukkira</i> <i>Bengali : Ashvagandh</i> <i>Urdu : Asgandanagaori</i> <i>Marathi : Asgundh, Kanchuki, Askandha</i> <i>Canarese : Amangura, Hirimaddina-Gadde, Sogada-Bery</i>
<b>Nirukti</b>	अश्वगंधा - अश्वस्य गन्ध इव गन्धो यस्याः सा (नि.आ.) अथवा अश्वस्येव गन्ध उत्साह यस्याः सेवनेन सा
<b>Synonyms</b>	<ul style="list-style-type: none"> <li>• <i>Vaji,</i></li> <li>• <i>Varah Karni,</i></li> <li>• <i>Balda,</i></li> <li>• <i>Kushthagandhini,</i></li> <li>• <i>Kaamrupini,</i></li> <li>• <i>Putrada,</i></li> <li>• <i>Ashwa Avrohak,</i></li> <li>• <i>Kanchuka,</i></li> <li>• <i>Marutaghni</i></li> </ul>

<b>Utapatisthana</b>	Throughout the drier parts of India
<b>Swaroop</b>	<ul style="list-style-type: none"> <li>• An erect branching under shrub about 5 feet in height nearly all parts more or less stellately tomentosed.</li> <li>• A plant, emitting horse smell, mainly the root.</li> <li>• The leaves resemble the era of pigs.</li> </ul>
<b>Bheda</b>	There are two types of <i>Ashwagandha</i> 1) <i>Ashwagandha</i> 2) <i>Nagori Ashwagandha</i>
<b>Upayukta Anga</b>	<i>Moola, Patra</i>
<b>Rasa</b>	<i>Kashaya, Tikta, Madhura,</i>
<b>Guna</b>	<i>Laghu, Snigdha</i>
<b>Veerya</b>	<i>Ushna</i>
<b>Vipaka</b>	<i>Madhura</i>
<b>Dosha Karma</b>	<i>Kapha-Vata Shamak</i>
<b>Rogaghna Karma</b>	<ul style="list-style-type: none"> <li>• <i>Balya</i></li> <li>• <i>Shukravardhak</i></li> <li>• <i>Brughna</i></li> <li>• <i>Rasayan</i></li> <li>• <i>Switraghna</i></li> <li>• <i>Krimighna</i></li> <li>• <i>Shothagna</i></li> <li>• <i>Mutrala</i></li> <li>• <i>Rakta-Shodhaka</i></li> </ul>
<b>Chemical Constituents<sup>4</sup></b>	<ul style="list-style-type: none"> <li>• Alkaloida ,Withaferin A; withanone, withanolide WS-I, withanolide A to Y;somnirol;withasomniferin A, nicotine, preudotropine, tropine, solasodine, withanosomine, sitoindosises VII-X, sominone,</li> <li>• Withaniols,</li> <li>• Somniferne</li> </ul>

**Table 4:** Showing Researches on *Ashwagandha* -

<b>Leaf Extract</b>	The leaf extract has both preventive and curative activity against CCL <sub>4</sub> induced liver damage (Montilla et al., 1990).
<b>Dried Roots</b>	The dried roots are having antibiotic activity
<b>Root Powder</b>	The fine root powder is applied externally on wound/ulcer and inflammation of skin.
<b>Leaves</b>	Leaves are applied on lesion, sore eyes and painful swelling. The unsaturated lactose isolated from the leaves of <i>Withania somnifera</i> inhibits the growth of <i>S.aureus</i> , <i>B.subtilis</i> and <i>M.pyogenes</i> . <i>Ashwagandha</i> is also useful in treating ulcers, scabies when applied locally.
<b>Plant</b>	Anti inflammatory activity of the plant seen in various modules of inflammation namely carrageenin, cotton pellet granuloma and adjuvant induced arthritis <sup>5</sup> . <i>Ashwagandha</i> was found to be useful in the prevention of stress-induced ulcers of the gastrointestinal tract (Singh et al. 1982). It showed significant protection against 18 h immobilization, cold + immobilization (4h) and aspirin induced gastric ulcers and lowered the mean ulcer index in rats. <sup>6</sup>
<b>withaferin A</b>	The alkaloid, <i>withaferin A</i> , is attributed for its curative properties. <sup>7</sup> <i>Withaferin A</i> and <i>withanolides</i> the active phyto chemicals are seen to be useful in suppressing granulation tissue formation, the action which is similar to hydrocortisone.

<b><i>Withania somnifera</i> extract</b>	The mechanism of chemo preventive activity of <i>Withania somnifera</i> extract has been attributed to its antioxidant and detoxifying properties <sup>8</sup> (Jai Prakash et al., 2011)
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### Classical references of Ashwagandha in Vrana

- *Acharya Sushruta* explains *Ashwagandha Kalka* for *Palivardhana*.<sup>12</sup>
- *Ropana* property is explained by *Acharya Sushruta* in *Mishraka Addhayaya*.<sup>13</sup>
- *Utshadana* property is explained when it is applied locally.<sup>14</sup>
- *kakolyadischa kalka syat prashasto vranropane*<sup>15</sup>  
Here *Kakolayadi Gana* is considered as one of the best for *Vrana Ropana*. Even though *Acharya Sushruta* did not explain *Ashwagandha* in *Kakolayadi Gana* but *Acharya Bhaprakash* mentioned *Ashwagandha* as *Partinidhi Dravya* of *Kakoli* and *Ksheerkakoli*. So its healing property can be known by this.
- *Ashwagandha* along with other drugs acts as excellent for *Vrana Ropana* explained in *Vangasena Samhita*.<sup>16</sup>
- *Vedanahar* property is given in *Divya Aushadhi Vijyan*, here local application of *Ashwagandha* leave (as whole) followed by *Sarshapa Taila* over leaves and heating over iron pan are mentioned.<sup>17</sup>
- Leaves are applied for carbuncle, inflammation and swelling. Leaf juice is used in conjunctivitis. Bark decoction is applied locally to bed sores.<sup>18</sup>
- Brushed leaves and ground root, used as a local application to painful swelling, carbuncles and ulcers.<sup>19</sup>
- Indicated in *Nadivikara*.<sup>20</sup>

### Vrana –

Vrana implies the damage of a part of the body leading to discoloration. As the scar of a wound never disappears even after complete healing and its imprint persists long, to lesion is called *Vrana*. A wound which does not heal in six week is called as chronic wounds<sup>21</sup>. The word ‘healing’ means replacement of destroyed tissue by living tissue<sup>22</sup>. Wound healing is the summation of processes which follow injury including coagulation, inflammation, matrix synthesis and deposition, angiogenesis, fibroplasias, epithelisation, contraction, remodeling and scar formation<sup>23</sup>.

*Acharya Sushruta*, a prime surgeon of his era gave an elaborate description about wound and its management. How deeply he know about art of healing? It can be understand by glancing over following beautiful verse. Here it is said that, when we are managing a wound, we should not be in hurry otherwise it will lead to complications; *Shodhana* (purification) of wound should be our prime intension after that we can go for *Ropana* (healing). In the same way modern surgical science advice for proper wound toileting, it makes a healthy environment and base for proper wound healing.<sup>23</sup>

Even though healing is a natural process but it needs favorable environment. Scientific description is available about wound and its healing in classics of *Ayurveda*. The *Prakupita* (Aggravated) *Doshas* attain a state of *Prasara* (Dissemination) during which they circulate in the whole body & where ever the *Kha-Vaigunya* (Disease prone area / space/ seat in the body) is present the circulating *Prakupita Doshas* lodges themselves at the site of *Kha-Vaigunya* (low vitality part of the body) and leads to the state of *Sanga* (Stagnation/Obstruction) which results in *Dushti* (Vitiation) of the related *Dhatu* and/or *Mala*. *Sushruta* has described in detail the provocative or exciting factors for each *Dosha* which include *Ahara*, *Vihara*, *Achara*, and climatic factors. Even though this description is in the context of *Vrana* the causative factors for the vitiation of *Doshas* are common for the other diseases also.

### CASE REPORT

A 30 years old married male patient, having *Pitta-Vata Prakriti*, employee in bank, residing at Aligarh, Uttar Pradesh, presented with the complaints of pricking pain in anal cleft since 2 months and yellowish discharge from postoperative wound since 1 month. There was no history of Diabetes Mellitus, Hypertension, Thyroid, Asthma or any other major disorders. Local Examination: A wound is present over the anal cleft measuring about 4cm (length), 0.5 cm (width) 2cm (depth) in dimension with Seropurulent discharge

and regular margins. The floor of wound was covered by slough and edges were inflamed. Tenderness was present with surrounding indurations and local temperature was raised but lymph nodes of draining area were not involved. Routine hematology and urine investigations were within normal limits.

### Management-

First, cleaning of wound with normal saline was done then; freshly prepared *Ashwagandha Patra Kalka* ((In *Khalva Yantra* 5-6 fresh leaves of *Ashwagandha* were grinded and aqua paste was prepared for daily dressing)) was applied over wound followed by sterile bandaging. Avoid water contact and any injury to the affected site. Restriction of *Puyavardhak Aahar* (pus forming diet).



Figure 1 (0 Day)

Figure 2 (7<sup>th</sup> day)

Figure 3 (14<sup>th</sup> day)

Figure 4 (21<sup>st</sup> day)

**Figure 1-** Post operated wound on 0 day

**Figure 2-** Application of *Ashwagandha Patra Kalka*

**Figure 3-** Wound status at 14<sup>th</sup> day.

**Figure 4-** Completely healed wound on 21<sup>st</sup> day.

**RESULTS** -The relief in wound status was observed weekly. 0 day patient reported severe pain (VAS-8) after 1<sup>st</sup> week of *Ashwagandha Patra Kalka* dressing and bandaging, patient reported relief in pain (VAS-6) without analgesic. On 14<sup>th</sup> day, wound became clean and floor of wound was covered by healthy granulation tissue that indicates *Shodhana* and *Ropana* properties of *Ashwagandha*. On 21<sup>st</sup> day, wound was completely healed and there was no pain (VAS- 0).

## DISCUSSION

Wounds and its management were well known to Indian. *Sushruta* the father of plastic surgery described various aspect of wound management. Apart from wound management he explained plastic surgery, burn, management of fracture in scientific manure. Historical survey of wound and its healing suggest that the gradual development in modern medicine is the mirror of ancient finding. Management of *Vrana* starts from recording proper history i.e. *Darshana*, *Sparshana* and *Prashna Pariksha*. On the basic of that it is easy to find out etiological factor involves and its proper diagnosis, so one can manage in a right way. Proper *Shodhana* of *Vrana* is the first step in the man-

agement of *Vrana Ropana* and for that selection of proper medicament and / or procedure from *Shashti Upakrama* is required to be done according to the stage of *Vrana*. *Ashwagandha*, having *Madhura*, *Tikta*, *Katu* and *Kashaya Rasa* which are having good wound healing properties. *Vrana Ropana* property of *Ashwagandha* may be due to *Sheeta*, *Guru Guna* and *Sheeta Virya*. *Katu Rasa* is known for *Ruksha*, *Ushna* and *Laghu Guna* which help to reduce *Kapha* that causes *Kandu* (itching) in *Vrana*. By virtue of its *Ruksha*, *Ushna* and *Lekhana* properties, it helps to reduce hyper-granulation checking growth of the microorganism, removing sloughs and helps to open the channels also.

## CONCLUSION

Much advancement occurs in the science of wound healing but its management is still a big challenge for surgeons of present era. A remarkable demand of herbal formulation for wound management in last few decades is seen and *Ashwagandha* is the cheap and best for *Vrana-ropana*.

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