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Review Article

JATYADI GHRITA IN POST-OPERATIVE PAIN MANAGEMENT: A REVIEW

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ABSTRACT

Post-operative pain is an anticipated, unavoidable physiological pain which is caused due to tissue trauma. Uncontrolled pain may cause restlessness and thereby delay in wound healing. There are many modes of treating the local pain by lignocaine jelly 2%, glycerine packing, diclofenac suppository which may reduce the pain but they are associated with their own drawbacks. Lack of use of effective analgesics in Ayurvedic medicines is the greatest disadvantage. This is one amongst the various causes of downfall of ayurvedic surgery. Hence there is constant quest for an ideal Ayurvedic analgesic therapy. *Jatyadi ghrita* is one of the well-known and highly effective classical Ayurvedic formulation indicated in the treatment of various ulcers. Along with it has *vrana shodana* and *ropana* properties it also contains drugs which are having *shoolahara* and *vatashamana* properties. Hence an attempt is made to explore the utility and scope of *Jatyadi ghrita* in pain management.

KEY WORDS*: Jatyadi ghrita,* post-operative pain management.

INTRODUCTION

The most common reason for which a person approaches to doctor is pain. According to international for the study of pain "pain is an unpleasant sensory and emotional experience associated with acute or potential tissue damage[1].

The post-operative pain is not avoidable in surgery. Results from a national survey suggest nearly 80% of patients experienced pain after surgery which was inadequately treated[2]. Hence post-operative pain management is very important.

In contemporary science local application of lignocaine gel 2%, glycerine packing, diclofenac suppositories are used to relive the pain. But they have adverse effects like headache, dizziness, light headedness, drowsiness, loss of appetite, or local rectal irritation may occur[3].

Jatyadi ghrita contains drugs having *shulahara, vatanashaka, angamarda prashamana,daha prashamana, shotshara,vrana shodana,* and *ropana* properties. And it is indicated in *marmashrita vran, gambira vrana, nadi vrana,and vedanayukta vrana*[4].

In this article, an effort is taken to highlight the importance of *Jatyadi ghrita* local application in postoperative pain management.

REVIEW OF LITERATURE

Pain is one of the most common terms used in medical science. It is subjective, unpleasant, or uncomfortable sensation which individual learns in his gradual course of development. Pain is an extraordinary complex sensation which difficult to define and equally difficult to measure in an accurate objective manner.

An essential component of the care of the surgical patient is effective postoperative pain control. Good analgesia can reduce this deleterious effect.

Clinically pain is defined as "what the patient states it is"; it is then up to the clinician to determine exactly what the patient means.

Receptors and Stimulus of Pain:

Receptors: Pain can be elicited by multiple types of stimuli. They are classified as mechanical, thermal, and chemical pain stimuli. In general, fast pain is elicited by the mechanical and thermal types of stimuli, whereas slow pain can be elicited by all three types[5].

Stimulus: When acute injury is received, the pain is produced but long after injury pain may be continued to felt. It is difficult to say what exactly cause the pain immediately but late pain is due to release of chemicals from damaged tissue. In damaged tissue, particularly in the skin some algo genic (pain producing) substances are released. The algo genic substances come in contact with the pain receptors and pain is produced.

Mechanism of Pain

The tissue injury that leads to the complaint of pain results in a process called nociception, which has four major steps:

Transduction: The noxious stimulus is converted in to electrical signal at free nerve endings, which are known as nociceptors. These nociceptors are widely distributed throughout the body in both somatic and visceral tissue.

Transmission: The electrical signal is sent in nerve pathway towards CNS. Nerve pathway includes primary sensory afferent fibres that project to the spinal cord to brain stem, thalamus, and thalamocortical pathway.

Modulation: The process that either enhances or suppress the pain signal, it occurs primarily in dorsal horn of spinal cord, in particular the substantia gelatinosa.

Perception: It is the final step in nociceptive process, it occurs when the pain signals reach cerebral cortex. the first three steps in nociception are important for sensory and discriminative aspects of the pain[6].

Peripheral Pain Pathways

All tissues other than CNS itself contain nociceptors, especially the skin which is heavily innervated. The sensation of pain usually occurs when the peripheral nervous systems sensory neurons are activated by noxious stimulation to the free nerve endings of primary afferent neurons. They may be stimulated by mechanical, thermal, or chemical stimuli. The peripheral nerves contain sensory, motor, and autonomic fibres. They are classified by their size, conduction velocity, and absence or presence of a myelin sheath. The initial stimulation of the peripheral afferents feeds the peripheral nerves information that can change the perception of painful stimulation. In other words, the "addictive" nature of continuous stimulation, if it occurs, indicates that the sensory stimulus was intense enough to cause pain. When the nociceptors are stimulated repeatedly, typically after tissue damage, pain threshold is decreased, so that less stimulus can induce pain. These changes in perception of peripheral painful stimulation occur in spinal cord. Clinical manifestation includes hypergesia, an increased subjective perception of pain, hyperpathia, a very exaggerated response to noxious stimuli, and allodynia, the perception of pain from simple, non-noxious stimuli[7].

Neurotransmitter and Path of Pain

The Transmitter
The A delta fibres and C fibres terminates on dorsal horn of the spinal cord. The first neuron ends here. The synaptic termitter is the substance 'P' secreted by terminals of 'C' as well as A delta fibres.

The Path
The tip of dorsal horn is called 'Substantia Gelatinosa Rolandi (S.G.R) A delta and C fibres terminate at the SGR. From SGR next order neuron arises and cross to opposite side and forms the spinothalamic tract (STT, also called as anterolateral system). the STT reaches ultimately the thalamus. From thalamus the next order neuron arises to end in sensory cortex of parietal lobe. Some descending fibres from the brain terminate on SGR. They constitute the tract that cause inhibition of pain. In the above description of path of pain, it is assumed that pain arouse from a somatic structure. Under some condition pain can also arise from the viscera. Abdominal visceral pain carried by afferent sympathetic fibres which enters the spinal cord then travel up via the anterolateral system (or STT) and reach the thalamus and finally to parietal lobe of the cortex[8].

Pain can be depicted as a *Vedana* in *Ayurveda. Vedana* means pain, agony. It has synonyms like Ruja, Shula. Shula is a symptom complex in which there is a pain produced similar to that of produced by piercing of sharp pointed weapon[9].

In Ayurvedic literature jatyadi ghrita has been explained, which is indicated in Rujayukta vrana.

JATYADI GHRITA

Jatyadi ghrita has been explained *Astanga hridaya uttarastana, vrana pratisheda adyaya* 25/67 (the ingredients and its Indications explained in Table 1).

Medicated ghee prepared with leaves of *Jati, Nimba, Patola, Katuka, Darvi, Nisha, Sariva, Manjista, Abhaya, Siktha, Tuttha, Madhuka* and seeds of *Nakthahva*, cleanses and heals the ulcer which have small openings, situated on vital spots, which have exudation, deep seated, painful and having sinuses.

Jatyadi ghrita has also explained in *Sahasrayogam ghrita prakarana as 47th ghrita yoga*[10]. (the ingredients and its Indications explained in Table 2).

During operative procedures there will be tissue damage, which releases some pain producing substances, as *Jatyadi ghrita* is indicated in *Vedanayukta vrana* so it can be used as local application in Post-operative pain management.

DISCUSSION

As *Jatyadi ghrita* includes ingredients like *Nimba, Haridra, Daru haridra, Karanja* has Anti-inflammatory and anti-microbial action. *Madhuka* and *Ushira* mentioned under *angamarda prashamana (*Anti-malaise*)* and *daha prashamana(*coolants*)* by *charaka. Manjista,sariva ,karanja* possesses *Vranashodana* property(Wound cleansing). *Jati, Patola, Siktha* Having *vrana ropana* (Wound healing) action.

Tuttha has indicated in *shoola, gudashoola, vrana, vibanda* and *arshas. Madhuka* has soothing and healing action on skin lesions.

Most of the ingredients of *jatyadi ghrita* are acts as *vatanashaka (Alleviates vata)* and *vrana shodana* and *ropana* properties help in reducing the inflammation, discharge, and pain. The *Goghrita* used as content of *jatyadi ghrita* has "*Sanskar Anuvartana*" (Property to assimilate the properties of other substances when added to it) property, the *Yogavahi guna* of it carries the active principle of the drugs at the level of body tissues. Hence *Jatyadi ghrita* can be used for local analgesic effect.

CONCLUSION

Since *jatyadi ghrita* contains drugs having properties of *shoolahara, vatashamana, shotahara, angamarda prashamana, daha prashamana, vrana shodana* and ropana properties and it mainly indicated in *nadi vrana, marmashrita vrana, vedanayukta vrana*, it can be used in post-operative pain management.

Table 1*: Jatyadi Ghrita* Ingredients According to *Astanga Hridaya Uttarastana* 25/67

INGREDIENTS ACCORDING TO *ASTANGA HRIDAYA*	*DOSHAGNATHA*	INDICATIONS
Jati patra (Jasminum officinale)	*Tridoshahara*	*Vrana shodana and ropana*
Nimba patra (Azadirachta indica)	*Kapha-pittahara*	*Vrana, kandu, Arsha, Krimi*
Patola patra (trichosanthes dioica)	*Kapha-pittahara*	*Daha, varnya, kandu*
Katuka (picrorhiza kurroa)	*Kapha- pittahara*	*Daha, Rakta vikara, Krimi, Prameha*
Daru haridra (Berberis aristata)	*Kapha-pittahara*	*Vrana, Arshas, visarpa, prameha*
Haridra (Curcuma longa)	*Kapha-vatahara*	*Vrana, kandu, krimi, prameha*
Sariva (Hemidesmus indicus)	*Tridoshahara*	*Daha, grahi ,atisara, jwara, kandu,*
Manjista (Rubia cordifolia)	*Kapha-pittahara*	*Vrana, shotha, raktatisara*
Abhaya(Usira) (vetiveria zizanioides)	*Tridoshahara*	*Daha, Shotha,vrana, anulomana, arshas, Angamarda prashamana.*
Siktha (bee wax)		*Sandanakara,vrana ropaka, bhutagna, kandu, vatarakta*
Tuttha (copper sulphate)	*Tridoshahara*	*Shoola, Gudashoola, Vibanda, Vrana, Arsha, Kandu, Krimi*
Madhuka (Glycyrrhiza glabra)	*Tridoshahara*	*Vranashotha, Daha, Raktapitta, Vrana, Angamarda prashamana.*
Karanja (Pongamia pinnata)	*Kapha-vatahara*	*Shotahara, Arshas, Krimi, Udavarta*
Sarpi (Ghee)	*Vata-pittahara*	*Daha-Shastra-Visha-Agni hata rogi*
Jala (Water)		

Table 2: *Jatyadi Ghrita* Ingredients According to *Sahasrayogam Ghrita Prakarana As 47th Ghrita Yoga*

INGREDIENTS	*DOSHAGNATHA*	INDICATIONS
Jati patra (Jasminum officinale)	*Tridoshahara*	*Vrana shodana and ropana*
Kimshuka (Butea monosperma)	*Vata-kaphahara*	*Krimi, Arshas, Grahani*
Parpataka (Fumaria indica)	*Pitta-kaphahara*	*Daha, Raktapitta, Trishna*
Sushavi (Momordica charantia)	*Kapha-pittahara*	*Krimi, Jwara, Prameha*
Mayurika (Achyranthes aspera)	*Kapha-vatahara*	*Sadyovrana, Shoola, Krimi*
Badrika (Aerva lanata)		
Nirgundi (Vitex nigundo)	*Vata-kaphahara*	*Krimi, Vrana ropana, Shula, Shotha,*
Mridu kunchika (Physalis minima)		
Katuki (Picorhiza kurroa)	*Kapha-pittahara*	*Daha, Rakta vikara, Krimi, Prameha*
Durva (Cynodon dactylon)	*Kapha-pittahara*	*Daha, Twak roga, Trishna,*
Nisha (Curcuma longa)	*Kapha-vatahara*	*Vrana, Kandu, Krimi, Prameha*
Sarpi (Ghee)	*Vata-pittahara*	*Daha-Shastra-Visha-Agni hata rogi*

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