ISSN 2456-3110
Vol 2 · Issue 2
Mar-Apr 2017

Journal of Ayurveda and Integrated Medical Sciences

www.jaims.in

JAIMS

Charaka Publications

Indexed

ISSN: 2456-3110 REVIEW ARTICLE Mar-Apr 2017

The *Karmukata* of *Svedana Karma*: A Critical Analysis

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ABSTRACT

Traditional approach to health care and cure has been the basic concept of *Panchakarma*. The *Panchakarma* is a branch of *Ayurveda* and one of the oldest health systems in the world with wide acceptance among large segments of the population. *Svedana* which is a major procedure of *Panchakarma* acts unanimously as *Purvakarma, Pradhana Karma* and *Pashchat Karma*, fight against diseases and becoming more successful in achieving *Samyavastha*. By its versatility it shows its effectiveness in the diseases of almost all the system by mostly causing vasodilatation and improved general circulation leading to healthy return in the condition. *Svedana* is considered as *Bahirparimarjana Chikitsa* and one among the *Sad-Upakrama*. *Svedana* which is a major procedure of *Panchakarma* and it is subdivided into *Purvakarma, Pradhana Karma* and *Pashchat Karma.* It is an independent *Upakarma*, as a *Purvakarma* measures generally done after *Deepana, Pachana and Snehana*, before administration of *Shodhana* treatment, *Svedana* is a process to induce sweating artificially in a patient who had already undergone *Snehana* may be or may not be. The heat is generated directly *(Saagni)* or indirectly *(Niragni). Svedana* liquefies the *Doshas*, clears the obstruction of channels of circulation and directs the *Doshas* to selective places from where they can be expelled easily. In the *Vedic* era the use of Natural remedies like sun-rays, fire were advocated as remedy in many disorders and mentioned as destroyers of *Rakshas* i.e. microbes. The current status of *Svedana* which indicate fluid perspiration from the body by sun light and exercise or the sweating which brought about in the body by contact of heat.

Key words: *Panchakarma, Shodhana, Svedana, Bahirparimarjana, Shadupakrama.*

INTRODUCTION

Svedana is the procedure which relieves stiffness, heaviness and coldness of body and produces sweating.[1] *Sveda* (sweat) is a *Mala* (excretion) of the *Medo Dhatu* (adipose layer of tissues) produced in consequence to heat exposure.[2] Therapeutic production of *Sveda* via applying the variety of measures is known as *Svedana Karma*. It is one among the *Shada-Upakrama*[3] (six types of treatment modalities). It is foremost procedure of *Panchakarma*. It removes *Stambha* (stiffness), *Gouravata* (heaviness) and *Sheetata* (coldness) from body. *Snehana* produces *Mriduta* (softness), *Klinnata* (semiliquid) of the morbid *Doshas*[4] which are situated in the *Koshtha* (*Amashaya/Pakvashaya* i.e. Stomach/intestine), *Dhatu* (tissue system), *Shakha* (extremities), *Srotas* (channels). Thereafter *Svedana* liquefies these *Doshas*[5] These liquefies *Doshas* easily transforms into movable form and later on removed by *Shodhana Karma* (bio-purification) as oily and moist wood burned by *Agni*. Thus *Svedana* is useful just after *Snehana Karma* (therapy), both procedures helps to cause *Utkleshana* of *Doshas.*[6] *Svedana* should be applied according to the *Doshas* by the support of

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Submission Date : 05/04/2017 Accepted Date: 28/04/2017

Access this article online

Quick Response Code

Website: www.jaims.in

DOI: 10.21760/jaims.v2i2.7723

ISSN: 2456-3110 REVIEW ARTICLE Mar-Apr 2017

proper formulation if drug. The consequences of *Svedana* are determined on the basis of *Vyadhis* (disease), *Ritu* (season). It pacifies the *Vata* and *Kapha Vyadhis,*[7] encourage elimination of *Purisha, Mutra* and *Retas* accumulated in the body.

Karmukata

Karmukata of *Svedana Karma* can be discussed under 2 sub-headings,

1. **Ayurvedic point of view**

   A) Based on *Mahabhuta*

   B) Based on *Karma*

A) Based on *Mahabhuta*[8]

Guna's	***Mahabhuta***	***Pramukha Karma***
Ushna	*Agni*	*Utsahakara / Svedakara*
Teekshna	*Agni*	*Dahapakakara / Shodhana/Srhavana*
Drava	*Jala*	*Kledana / Syandana / Alodana*
Sukshma	*Akash, Vayu, Agni*	*Vivaransheela / Anupraveshita*
Sara	*Vayu, Jala*	*Anulomana / Prerana / Pravartana*
Sthira	*Prithavi*	*Dharana / Stambhaka*
Rooksha	*Vayu, Agni*	*Khara / Kaphahara*
Snigdha	*Jala, Prithavi*	*Mardava / Balakrita / Varnakrita*

B) Based on *Karma*[9]

Sveda Karma has 4 major actions over the body:

- *Stambhaghnata*
- *Gouravaghnata*
- *Sheetaghnata*
- *Svedakarakata.*

1. ***Stambhaghnata:*** *Stambha* means stiffness which is produced as a resultant of excess *Sheeta Guna*.

   Stambha also means obstruction or block. Therefore, *Svedana* not only relieves stiffness, but also clears blocking of passages (*Srotorodha*). Generally *Srotas* as a structural entity is *Kapha Pradhana* and its important function is *Ayana* or transport which is under the control of *Vata*. There by it is evident that there is a predominant influence of *Vata* and *Kapha* over the *Srotas.*[10] Similarly *Svedana* has the opposite qualities to that of *Vata* and *Kapha*, thereby producing a palliative effect on them and thus clears the *Srotodushti or Sanga*.

   In other words, application of heat increases the local circulation which renders contracted Lumina of the body to become smoother and wider. Thus relieves variety of obstructions.

2. ***Gouravaghnata*:** Heaviness of the body is being relieved by *Svedana*. By means of *Svedana,* the fluids in the body are being excreted through the *Sveda* (sweat) and hence the feeling of lightness in the body. *Svedana* stimulates the nerve endings and promotes muscle strength.

3. ***Sheetaghnata*:** *Sheetaghnata* has to be understood as the patient is relieved of the coldness existing prior by the *Ushna Guna Pradhana Sveda Karma*.

4. ***Svedakarakata:*** *Svedana* produces perspiration. This is a *Mala* (excretory product) where the wastes of all the layers of skin, muscles, nerves, *Rasa, Rakta*, and *Meda* etc. are mixed. Therefore, it is a mechanism of excreting the metabolic wastes in the body tissues.

Apart from these major actions, *Svedana* also produces the following effects.

a. ***Doshadraveekarana:*** *Snehana* performed prior to *Svedana* makes the *Dosha Mridu* and eradicates the *Mala Sanga*[11]. The *Svedana* penetrates to each and every channel in the body and liquefies the *Dosha*. These liquefied *Dosha* has to be eliminated from the body means of *Shodhana Karma*.

b. ***Vata Shamana:*** *Sneha poorvaka Sveda* pacifies the *Vata Dosha*, thereby curing the *Purisha-Mutra-Shukra Sanga*. By its properties opposite to that of *Vata*, it pacifies the *Vata*.[12]

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c. ***Gatra Vinamana*:** By application of oil and heat, even dry wood can be bent so similar effects may be expected from *Svedana Karma*.[13] It cures *Harsha, Ruk, Ayama*, *Shopha, Stambha* and *Graha* and produces *Mardavata*, thereby permitting normal flexible body movements.

d. ***Agni Deepana*:** As *Svedana* is *Ushna Guna Pradhana*; it does the *Ama Pachana* there by promoting the *Agni* in the body.[14]

e. ***Tvak Mardavata* and *Prasadana*:** Perspiration is dependent on skin, where in the hair follicles which are the *Moola* of *Svedavahi Srotas* is situated.[15] Due to sweating and excretion of wastes, the skin becomes soft and pleasant.

f. ***Sroto Shuddhi*:** It is evident that there is a predominant influence of *Vata* and *Kapha* over the *Srotas* and *Svedana* has the opposite qualities to that of *Vata* and *Kapha*, thereby producing a palliative effect on them and thus clears the *Srotodushti or Sanga*.[16]

g. ***Nidra-Tandra Nasha*:** *Svedana* pacifies *Vata*. *Vata* is responsible for the functions of *Indriya* wherein *Nidra* and *Tandra* are affecting. *Svedana* also pacifies *Kapha* thereby making the body light, and providing relaxation. Thus it prevents excessive sleep and drowsiness.[17]

h. ***Sandhi Cheshtakara*:** *Svedana* relieves *Stambha* and *Graha* thereby promoting the *Sandhi Cheshta*.[18]

i. ***Dosha Shodhana*:** The *Dosha* situated in the *Dhatu, Koshtha* and *Shakha-Asthi* and those *Leena* in the *Srotas* gets *Kledana* by *Snehana* and gets liquefied by the *Svedana* and comes to the *Koshtha* and get ready for elimination by means of *Shodhana Karma*.[19]

2. Modern point of view

Physiological effect of heat[20]

1. **Increased Metabolism -** More heat in the superficial tissues that increase the metabolism which increased the demand of oxygen and nutrition which leads to increased output of waste products so there will be more removal of waste products from body and Feeling of lightness in body.

2. **Increased Blood Supply -** Removal of waste products is increased so there is more excretion of metabolites from walls of capillaries and arterioles which leads to vasodilatation. Because of vasodilatation there is a more blood supply ultimately which gives relax to the muscles and nerves these end up with lightness of body. Stimulation of superficial nerve endings can also cause a reflex dilatation of the arterioles. As a result of vasodilatation there is an increased flow of blood through the area so that the necessary oxygen and nutritive materials are supplied and waste products are removed.

Physiology of Sweat

There is two main types of sweat glands in our body eccrine and apocrine glands. Perspiration comes from small sweat glands (eccrine). These are small organs located in the skin. The eccrine glands are controlled by the sympathetic and parasympathetic nervous system and pre-optic area in hypothalamus. Due to certain stimuli (nervous or hormonal) they will secrete sweat which helps in thermal regulation.

Physical effect of sudation

Sudation stimulates the sensory nerve ending which produces relaxation and it relieves the muscular fatigue. In the meanwhile again it produces a hyperemic effect which causes arterioles to dilate because of this dilatation it achieves more circulation and relieves the muscular fatigue. Vasodilatation causes movements of the muscles thereby accelerating the blood supply and nutrition which relieves the muscular fatigue.

Nourishment of cells and tissues[21]

Because of heat there is a generation of temperature around the cell. This increased temperature causes diffusion of liquid substances from the cell membrane which leads to formation of lipoid vesicles these lipoid vesicles are expansion in the cell volume This Makes the blabbing of cell membrane inside. Due to temperature blabbing again increased these leads to Detachment of blebs from cell membrane lastly these

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blebs comes out from cell membrane and Provide nourishment to the tissue. Application of heat on that area creates generation of temperature gradient around the cell membrane which leads to the diffusion of liquid substances through the cell membrane this plays a key role in the formation of lipoid vesicles it causes an expansion in the cell volume this makes the blebbing of cell membrane inside. This blebbing is again increased by heat in particular direction. These blebs get detached from the cell membrane and remain there. After sometime these blebs comes out from membrane and spread further, thus providing nourishment to the tissues.

DISCUSSION

Hyperthermia

Local increased in temperature during Svedana Karma has both therapeutic and physiological effect and very much effective in joint degenerative conditions.[22]

a. It stimulates and increases local blood and lymphatic circulation and thereby improving local tissue metabolism.[23]

b. During hyperthermia by modifying secretion of various inflammatory mediators it reduces inflammation.[24],[25]

c. By physical effect of heat Hyperthermia relaxes local musculature and thereby reduces pain.

d. A study has shown that hyperthermia increases the rate of trance dermal drug delivery and there by helpful during *Abhyanga* followed by *Sveda* for better trance dermal drug absorption.[26]

Absorption of Drug

Trance dermal drug delivery is the newly emerged system of drug delivery. This therapeutics is safe, efficacious and may improve patient treatment compliance. Pharmacologic considerations including avoiding first pass effect and biotransformation may also be important advantages of transdermal administration.

The advantages of using transdermal drug delivery include bypassing the gastrointestinal tract and hepatic first pass biotransformation and metabolism, control of absorption and the availability of multiple sites for application. Avoiding the gastrointestinal environment which may significantly affect bioavailability would seem intuitive. The use of transdermal administration may also reduce hospitalization time and be utilized in home care.

Mechanisms of Absorption[27]

The skin has been referred to as the largest organ system accounting for a large proportion of the body's total surface area. Due to easy access and the ability to maintain applied formulations for prolonged periods of time, transdermal drug administration has become a dynamic area of investigation.

Basically, the skin is composed of three layers consisting of the epidermis, dermis and sub dermal tissue. The epidermis in haired skin of the dog and cat is composed of four layers including the stratum corneum, stratum granulosum, stratum spinosum and the stratum basal. The cornified layer of the stratum corneum appears to provide the rate limiting step to transdermal drug absorption. Once thought to be a fairly inert layer, it is now known that this layer actively opposes absorption from outside and loss from within. Penetration of the skin depends on diffusion therefore the hydration of the skin will affect permeability. Absorption via the transdermal route primarily occurs by passive diffusion through the stratum corneum.[28]

The rate of diffusion is dependent on the permeability coefficient of the drug, the applied concentration of the drug, the surface area of the skin exposed to the drug and the thickness of the epidermis (Fick's law of diffusion).

Studies have revealed the fact that lipoidal barrier is very much suitable for penetration of drug molecule through stratum corneum.[29],[30],[31] On this basis we can assume that in the procedure, *Taila* may serve lipoidal barrier for the penetration of drug molecules of *Bala* and exerts immediate effect. Moreover heat applied during *Valuka Svedana* increases the rate of drug absorption.

Modulation of Pain

The precise mechanism of action in massage therapy is not known. It has been proposed that increased

ISSN: 2456-3110 REVIEW ARTICLE Mar-Apr 2017

parasympathetic activity and a slowed-down physiological state may underpin the behavioural and physiological processes associated with massage. As discussed by Wright and Sluka, massage is thought to induce a variety of positive physiological effects that may contribute to tissue repair, pain modulation, relaxation, and improved mood. For example, these authors point to research showing that massage has beneficial effects on arterial and venous blood flow and oedema. In addition, they note that vigorous massage has been shown to increase local blood flow and cardiac stroke volume, as well as improve lymph drainage; massage also appears to have an anticoagulant effect. Finally, Wright and Sluka maintain that massage may activate segmental inhibitory mechanisms to suppress pain and that some techniques may activate descending pain inhibitory systems.

CONCLUSION

Svedana Karma is essential for doing any procedure in *Panchakarma*. Due to *Poorvakarma* like *Snehana and Svedana*, benefits and acceptance of the *Pradhanakarma* is improved. It makes changes in *Vikrita Doshas* to mobilize them without creating harm to the body. *Poorvakarma* helps to achieve best outcome from *Pradhanakarma*, in meantime body develops sensitivity to keep balance throughout the process of *Pradhanakarma*. Negligence of *Poorvakarma* makes complications as an unripe fruit get crushed during juice extraction whereas ripened fruit is best and juice can be easily extracted. It is one of the *Poorvakarma* and *Pradhana Karma* in *Panchakarma*. *Svedana* is very useful in *Vata* and *Kapha, Amaja* Diseases. Effective Clinical result can be obtained in disease conditions where in there is severe stiffness, pain, wasting of muscles, loss of muscle strength. Proper care to taken while administering *Svedana* to prevent *Atisvinna Lakshanas*.

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How to cite this article: Mishra Gaurav, Kumar Ashvini, BA Lohith, Sharma Swati. The *Karmukata* of *Svedana Karma*: A Critical Analysis. J Ayurveda Integr Med Sci 2017;2:174-179.
http://dx.doi.org/10.21760/jaims.v2i2.7723

Source of Support: Nil, **Conflict of Interest:** None declared.

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