

## A ROLE OF AGNIKARMA IN NETRA ROGA AND ITS CLINICAL APPLICATION

Sushma<sup>1</sup>, Dr. K.V. Subhadra Antherjanam<sup>2</sup>

<sup>1</sup>P.G.Scholar, <sup>2</sup>HOD Professor,

Dept of Shalakyta Tantra, Amrita School Of Ayurveda, Vallikavu, Kollam, Kerala, India

### ABSTRACT

*Ayurveda* is one of the most ancient medical sciences of the world. It conceives and describes the basis & applied aspect of life process, health, disease & its management in terms of its own principles & approaches. Though, modern science has been developing advance technology & therapeutics for the diagnosis & management of different disorders, still ancient system of medicine fulfill the health care needs of the vast majority of a population. Nowadays large section of humanity globally, is shifted towards natural way of life & they have lot of expectations from *Ayurveda* which is not only a system of medicine rather the way of life, as it is available, toxicity free & eco- friendly due to its holistic approach. *Shalakyatantra* is one of the eminent branches of *Ayurveda* deals with the study of functioning and diseases related to the sense organs. Amongst the senses, eye is given the most importance as once the vision is lost the, one will not be able to differentiate day night and enjoy the beauty of nature. Around 76 diseases are being explained dealing with eye diseases. Based on 4 major methods of management such as *Bhesajkarma*, *Ksarakarma*, *Agnikarma*, *Raktamoksana*. *Agnikarma* is superior among them and boon for local *Vata* & *Kaphaja Vyadhi* and diseases treated by *Agnikarma* do not recur. It gives instant relief to the patients. An effective superior among all Para surgical procedure is *Agnikarma*, in which heat is transferred to the body by various *dravyas*. Now this *Agnikarma* procedure modified scientifically in the branch of ophthalmology as cauterisation, laser and radiation. The concept of *agnikarma* will be discussed further.

**Keywords:** *agnikarma*, *agni*, *dahana*, *netraroga*, *laser*, Cautery

### INTRODUCTION

In *Atharva veda*, *Agni* has been mentioned as *Bhesaja* in the reference of *Krimi*<sup>1</sup> (same way our Acharyas also mentioned this *karma (procedures)* in many places as the main tool to subside the *netragata rogas (eye diseases)* if it is not subsiding by the *beshaja* and *shastra karma*.

*Agnikarma*, the two words *Agni* and *Karma* combined forms term or i.e. *Agnikarma* which means “the action / *karma* performed with the help of *Agni*.”

**Synonyms of Agnikarma<sup>2</sup>:**

<i>Agni Chikitsa</i>	<i>Agnikarma Tapana Karma</i>	<i>Daha Karma</i>
<i>Agni Dagdha</i>	<i>Dagdhakarma</i>	<i>Dahan Karma</i>

Types: *Dalhana*, the commentator of “*Sushrut Samhita*”, has given the following description regarding the *Agnikarma*. “*Agni Krita Karma*” the action done / carried out with the help of *Agni*. “*Agni Sambandhi Karma*” the *Karma* or action related to *Agni*. In the first concept i.e. *Agni Krita Karma*” the *Agni* is used directly i.e. direct manner of application of *Agni* to the affected part of the body. Second concept i.e. “*Agni Sambandhi Karma*”, the *Agni* related things / media are used i.e. indirect application of “*Agni*”.

So the identical character in both the statements is the presence of *Agni*, whether it is used directly or indirectly through media. Mainly *vata* and *kaphaja rogas* are best managed by this procedure.

**Effects of Agni Karma as follows:**

- *Sthanik Karma*: Local action
  - *Saarvadaihihik Karma*: Action takes place all over the body
  - *Vishishta Karma*: Special kind of actions
- Agni karma in Netra roga<sup>3</sup>:**

**a. Pathology in lid :**

Sl no	Site	Disease	Condition
1.	<i>Vartma roga</i> (lid pathology)	<i>Lagana</i>	In <i>mahalagana</i> – after <i>bedana</i> line of treatment <i>agnikarma</i> is indicated.
2.		<i>Shonitarshas</i>	After <i>Cedana</i>
3		<i>Shushkarshas</i>	
4		<i>Arbuda</i>	
5		<i>Pakshmakopa</i>	After <i>shastra karma</i>
6		<i>Alaji</i>	With <i>suchi agra bhaga</i>

In all above condition mainly to prevent the re occurrence of the *vartma roga agnikarma* is mentioned. It is compare with mode of action similar to cauterization<sup>4</sup>.

(much like a soldering iron). The procedure is used to stop bleeding from small vessels (larger vessels being ligated) or for cutting through soft tissue. Electrocauterization is preferable to chemical cauterization because chemicals can leach into neighboring flesh and cauterize outside of the intended boundaries Use of this electric cautery to cut the tissue or to coagulate the bleeding points, so this application of electro cautery is ideal for removing small skin tags, papiloma and also to control the bleeding during surgical procedures.

The medical practice of cauterization is defined as the burning of a part of the body to remove an unwanted part of it, to destroy some tissue in an attempt to mitigate bleeding, remove an undesired growth, or minimize other potential medical harm, such as infections when antibiotics are unavailable. Cautery can also mean the branding of a human, either recreational or forced.

**Electrocautery:**

**Diathermy:**

Electrocauterization is the process of destroying tissue using heat conduction from a metal probe heated by electric current

The basic principle is to deliver high frequency current to the human body by means of active electrode and this after passing

through the tissue to be diathermized returns via a return electrode. The intense heat produced by the passage of current destroys it in different ways depending on the type of current used. Cutting current is undamped and produce cutting effect secondary to intense heat generation within the tissue. It is haemostatic also and no bleeding can occur. Coagulating current is highly damped and

coagulates by tissue dehydration and its effect is mainly haemostatic. Blended current is a combination of two types of waves introducing both cutting and coagulating effects. Most new surgical units deliver low voltage cutting or blended current from a solid state generating unit through an isolated bipolar system which is considered the safest.

**b. Pathology related to the Dristigata roga and Sarvakshiroga<sup>5</sup>:**

1	<i>Dristigata roga</i>	<i>Kaphaja linganasha</i>	If pain is not subsiding after vyadhana karma
2	<i>Sarvakshigata roga</i>	<i>Adhimantha</i>	If pain is not subsiding

Here mainly procedure is mentioned to overcome the pain which is not subsiding in nature.

Site of *agnikarma* in *Siro Roga* and *Adhimantha* : *Bhrupradesa Lalata pradesa Sankha pradesa.*

Mainly done with the help of *Panchadhathu shalaka* (five metals), they are Copper (40%), Iron (30%), Zinc (10%), Silver (10%), Tin (10%). Having 100gm weight possessing a pointed tip and heated up to the *shalaka* becomes red hot is more beneficial to create *samyak dagda vrana* which gives constant temperature and cool after specific time. As per the Innovation of Prof. P D Guptha., the average heating/boiling point 236-240 degree centigrade. Immediate heat dissipation after removing from the fire is 18-20 degree centigrade, subsequent heat dissipation 4-6 degree centigrade. Superficial tissue destruction is less. Compare to *snigdha dravya.*

Mechanism of action:

- Induction of pro-inflammation theory

- Application of thermodynamic principle to biological system
- Gate control theory of pain
- Superficial nerve endings response theory
- Contact inhibition theory
- Pain threshold theory
- Pizo- electric current theory
- Reflex theory

**Effect:**

**Local effects of heat application**

- It increases the Vasodilatation, rate of metabolism, capillary permeability, delivery of leukocyte, elasticity of ligaments capsules, muscle and nerve conduction.
- Removal of metabolic waste.
- It causes the analgesia and sedation of nerves
- It decreases the edema formation, muscle tone, muscle spasm and perspiration

These effects will depend upon

- Size of area heated
- Duration of heating
- Method of application
- Depth of absorption of specific radiation

**Tissue effects of heating temperature (centigrade)**

		34-44	44-50	50-80	80-100	100-200	>200
Effect	visible	None	None	Blanching	shrinkage	steam	Carboniza-

							tion cratering
	De-layed	Edema	Necrosis	Sloughing	Sloughing	Ulceration	Larger crater
Mechanism		Vasodilatation, inflammation	Disruption of cell metabolism	Collagen denaturation	Desiccation	Vaporization	Combustion of tissue hydrocarbons

**c. Now this principle of Agnikarma procedure modified scientifically in the branch of ophthalmology as Lasers <sup>6</sup>: Photocoagulation:**

The word LASER is an acronym for light amplification by stimulated emission of radiation. Laser light is characterized by monochromaticity, coherence and collimation. These properties make it the brightest existing light. These laser light will be absorbed by tissue pigments, converted into heat, thus raising the temperature of the target tissue high enough to coagulate and denature cellular elements.

Photocoagulation uses light to coagulate tissue. When energy from a strong light source is absorbed by tissue and is converted into thermal energy, coagulation necrosis occurs with denaturation of cellular proteins as temperature rises above 65 degrees, which is used for various therapeutic purposes starting from minor surgical procedure to major surgical procedure.

While explaining photocoagulation techniques different varieties of laser techniques are adapted. Like in <sup>8</sup>

1. Macular photocoagulation 2 techniques are described
  - a. Focal treatment: it is used to seal specific leaking blood vessels in a small area of the retina, usually near the macula, with argon laser is carried out for all lesions (micro aneurysms, IRMA, or short

capillary segments) 500-3000 microns from the centre of the macula, believed to be leaking and causing CSME, spot size of 100-200microm of 0.1 second duration is used.

- b. Grid treatment: Grid pattern laser burns are applied in the macular area for diffuse diabetic macular edema.
2. Pan retinal photocoagulation: or scatter laser consists of 1200-1600 spots. It is used to slow the growth of new abnormal blood vessels that have developed over a wider area of the retina. Each 500micro meter in size and 0.1sec duration. Laser burns are applied 2-3disc areas from the centre of the macula extending peripherally to the equator.

**Therapeutic applications based on photocoagulation are as follows<sup>7</sup>:**

1. Eyelid lesions such as Haemangioma
2. Corneal conditions – reduction of post-operative astigmatism from cataract surgeries
3. Laser for glaucoma.
4. Lesions of iris. These include laser coreoplasty for undrawn pupil, photomydriasis for pathologic miotic pupil, and laser sphincterectomy and laser shrinkage of iris cyst.
5. Lesions of retina and choroid. These form the most indications in diabetic retinopathy, peripheral retinal vascular abnormalities like eales disease, coats dis-

eases and retinopathy of prematurity, intra ocular tumors, macular diseases such as central serous retinopathy and age related macular degeneration.

### Character of *Samyak dhagda Vrana* according to *Dhatu* <sup>8</sup>:-

- *Twak Dhatu* – *Sabda pradurbhava* (Production of sound) *Durgandhata* (Bad odor) *Twak sankoca* (Contraction of skin)
- *Sira, Snayu* – *Krsna varnata* (Black dicolouration), *Unnata vranata* (Elevated) *Srava sannirodha* (Stoppage of discharge)

Laser treatment may cause tissue scar, occlusion of vessels, tissue atrophy and tissue contraction. As a complication Laser treatment causes transient visual loss, macular edema, haemorrhage, color vision alteration, visual field defect and night vision problems.

It is hypothetically stated that after *samyak dhagda* some local antibiotics or non specific immune globins may act as a disease modifying activity.

### Principles of *Agnikarma* <sup>9</sup>:

Disease which is not curable by *Bhesaja, Sastra, Ksarakarma* in that place *Agnikarma* plays major role to cure those disease. *Agnikarma* is one of the methods to control Haemorrhage when other procedure is failed and also *agni* has prime role for sterilization. *Dalhana* has mentioned *Agnitapta sastra* prevent sepsis in surgical procedure. *Agnikarma* is also useful after *Sastra karma* to avoid recurrence. *Vata kapahaja vyadhis*<sup>10</sup> are best managed by this as *vata* and *kapha* possess *sheeta guna*, for this to neutralize the *vata* and *kapha dosha* require opposite *guna* treatment that is *ushna chikitsa*, *ushna guna* and *agni* having *anyonyasritabhava*, hence *agnikarma* virtue of its *ushna, tiksh-*

*na, sukshma* and *laghu* property breaks *srotovarodha*, which produced by *vata* and *kapha dosha*. Thus *nirama kapha* and *vata dosha* are neutralized. it also acts like a *dosha dushya vighatana karaka* because *ushna guna* performs two functions. Firstly by stimulating i.e *utkleshana* of *dhatva agni* and due to this action *sama dhatu* (localized *ama*) is digested and secondly *ushna guna* dilated the channels of *srotas*. Due to this *srotovarodha* removed (clearing the respective *srota* channel), which was formed by *dosha – dushya samurchana* in *khavaigunya* at *dhatu* (tissue).

### CONCLUSION

Its applications are widely practiced in modern surgical practice-viz cauterization, laser, radiation etc. *Acharya Sushruta* has advocated five *Upakarma* for the management of *Sira*, out of them *Agnikarma* is the best one. It is an ambulatory treatment modality and affordable to the common man. It deals with the action of thermal energy in the human body. It is a potent and minimally invasive para surgical procedure which has wide application in pain, recurrent occurrence and in unwanted growth conditions. Even today we can practice safely with all precaution in case of recurrent Trichiasis, and for same management in chronic glaucoma. It is hypothetically stated that it is probably capable to break down various cycles of painful adhesions. For this final conclusion more clinical research will be necessary (such as animal experiment).

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### **CORRESPONDING AUTHOR**

**Sushma**

P.G.Scholar,

Department of Shalakyta tantra, A  
mrita School of Ayurveda, vallikavu,  
Kollam, Kerala, India

**Email:** drsushmaayu@gmail.com

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