

A CONCEPTUAL REVIEW ON *DAHANOPAKARANA* (MATERIALS USED FOR *AGNIKARMA*)

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ABSTRACT

In Ayurveda, treatment by *Agnikarma* was well known tool as early as the 1500-1000 years BC. Pain is an uncomfortable feeling that tells you something may be wrong .It can be throbbing, stabbing, aching, pinching, or described in many other ways. Parasurgical procedures might be the hope of effective management of pain. *Agnikarma*(thermal cauterization) is one among prime parasurgical procedure .It produces instantaneous relief by instant reduction in pain, release of muscle spasm and stiffness. *Agnikarma* has been given special place in surgery by Sushruta and it is also believed that diseases treated by *Agnikarma* never reoccur. In this study a brief focus has been laid upon various materials used in Agni karma. *Dahanopakarana* are various accessories like drugs, articles and substances used to produce therapeutic burns during *Agnikarma chikitsa* .

This review article helps to understand various materials and its melting points used in *Agnikarma*.

**Keywords:** *Agnikarma*,Melting point,*Panchadhatu shalaka*.

**INTRODUCTION:** *Shalyatantra* is the surgical discipline of Ayurveda and have dual treatment procedures *shastrakarma* (surgical procedure)and *Anushastra karma*(para surgical procedure).The later includes *kshara karma*(caustic action) ,*agnikarma* and *jaloukacharana*. Sushruta mentioned in his text that *Agnikarma* is superior than *ksharakarma* as it prevents reoccurrence or chances of lesser reoccurrence of diseases and which are not curable by *bhesaja*,*Shastra*,*ksharakarma* may be treated with *Agnikarma*<sup>1</sup>.In ancient period the plant (*audbidh*),animal (*jangama* )and soil (*paarthriva*)origin substances were used frequently. In Sushruta Samhitha use of soil origin substances are more in comparison to Charaka samhitha where herbal drugs are cited<sup>1</sup> .There is a range of type of materials mentioned in Ayurveda

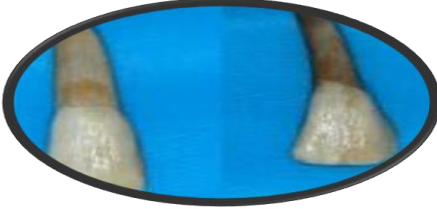
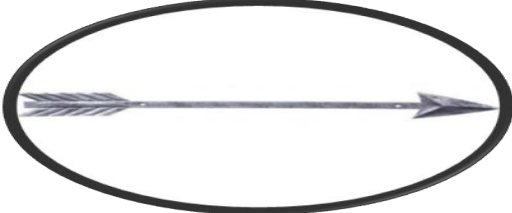



for *Agnikarma* and the selection of particular material depend on its use. The important tool for *Agnikarma* is its *Dahanopakarana* that means the material used for the act. On inspection of described material it has been found that among them few are much hard ,few are less hard and few are liquids in nature .The animal origin, Plant origin and Soil origin substances are programmed for use in *Agnikarma* .They have different level of heat holding capacity ,may become early or late cooling power etc and they are used in special conditions or sites in particular diseases .The particular choice of material depends upon wisdom and capability of physician *Charaka*<sup>2</sup>,*Sushruta*<sup>3</sup> and *Vagbhata*<sup>4</sup> mentioned a list of *dahanopakarana* in references to *Agnikarma*.






**Table 1. Comparative list of various Dahanopakarana mentioned by different Acharya's :**

Dahanopakarana	Sushruta Samhitha <sup>2</sup>	Charaka samhitha	Astanga Sangraha	Astanga Hridaya
<i>Pippali(Piper Longum)</i>	Yes	No	Yes	No
<i>Ajasakrita</i> (faeces of Goat)	Yes	No	Yes	No
<i>Godanta(Cow Tooth)</i>	Yes	No	Yes	Yes
<i>Sara(Arrow)</i>	Yes	Yes	Yes	Yes
<i>Shalaka(Rods)</i>	Yes	No	Yes	No
<i>Jambavaushta</i>	Yes	No	Yes	No
<i>Dhatu(Other Metals)</i>	Yes	No	No	No
<i>Madhu(Honey)</i>	Yes	Yes	Yes	Yes
<i>Madhuchista(Wax)</i>	Yes	Yes	Yes	No
<i>Guda(Jaggery)</i>	Yes	No	Yes	Yes
<i>Vasa</i>	Yes	No	Yes	Yes
<i>Ghritha</i>	Yes	Yes	Yes	Yes
<i>Tailam(Oil)</i>	Yes	Yes	Yes	Yes
<i>Yasthimadhu(Glycyrrhiza glaabra)</i>	No	No	Yes	No
<i>Suchi(Needle)</i>	No	No	Yes	No
<i>Varti(Suppository)</i>	No	No	No	Yes
<i>Suryakanta(a type of minor gems,sunstone)</i>	No	No	Yes	No

**IMAGES OF DAHANOPKARANA.**

Figure -1 <i>Pippali(Piper Longum)</i>	
Figure -2 <i>Ajasakrita</i> (faeces of Goat)	

<p>Figure -3 <i>Godanta</i>(Cow Tooth)</p>	
<p>Figure -4 <i>Sara</i>(Arrow)</p>	
<p>Figure -5 <i>Shalaka</i>(Rods)</p>	
<p>Figure -6 <i>Jambavaushta</i></p>	
<p>Figure -7 <i>Dhatu</i>(Other Metals)</p>	

<p>Figure -8 <i>Madhu</i>(Honey)</p>	
<p>Figure -9 <i>Madhuchista</i>(Wax)</p>	
<p>Figure -10 <i>Guda</i>(Jaggery)</p>	
<p>Figure -11 <i>Ghritha</i></p>	
<p>Figure -12 <i>Tailam</i>(Oil)</p>	



**Table -2 Thermal behavior of Dahanopakaranas (Latent Heat Capacity)**

S. no	Material	Average heating/melting point	Immediate heat dissipation after removing from the fire	Subsequent dissipation /min	Superficial tissue destruction.
1	<i>Pippali</i>	55-600C	10-120C	200C	Less
2	<i>Aja Shakrt</i>	65-700C	10-150C	150C	Less
3	<i>Godanta</i>	70-800C	10-150C	150C	Less
4	<i>Shara</i>	140-1500C	18-200C	250C	Less
5	<i>Jambavoushta</i>	215-2200C	20-220C	8-100C	Moderate
6	<i>Panchaloha Shalaka</i>	250-2550C	18-200C	6-80C	Moderate
7	<i>Madhu</i>	120-1300C	00C	2-30C	More
8	<i>Guda</i>	155-1650C	00C	2-30C	More
9	<i>Taila</i>	140-1600C	00C	1-20C	More
10	<i>Ghrita</i>	180-1900C	00C	1-20C	More

1.*Pippali* – It is a piper *longum* Linn Fruit which are used to *Agnikarma* purpose.The *pippali* fruit is elongated ,*shundaakaar*(*calcariformis*),reddish colour(when ripe) and blackish brown colour ( when dried).<sup>5</sup>

2.*Ajasakrita* – *Ajasakrita* is a faecal material of goat and known as “ meengini”.It is hard in consistency when dried ,rounded or oval in shape.It is having

pointed tip,blackish or brownish in colour with particular smell.After heating in fire and when it is in red hot burn condition then it is applied particularly in *twakgata rogas*.

3. *Godanta*(Cow’s tooth)- It is tooth of cow ,hard in nature and vagbhatta mentioned it for *twakdagha*<sup>6</sup>. In *Dravyaguna vigyana* of P.V. Sharma(reprint edi.2000,volume III,P.39)it



has been mentioned that teeth have property of *lekhan* and especially when locally used. At present no any evidence found for its use as a *dahnopkarana* in context to *Agnikarma*.

4. *Shara*(vaan.arrow) – Astanga hridaya tell it to apply for *twakdagdha* ,Charaka in *granthi visharpa* etc.<sup>6</sup>

5. *Shalaka* – The *shalaka* are compared with rod like instrument and is made up of metals

6. *Jambavaustha- Jambavaustha* is specific in shape and used for *Agnikarma* in ancient period. It is a rod like instrument, made up of black stone<sup>7</sup>, its functional end is lip shaped resembling the nut of *jambu* fruit(*Syzygiam Cumini Linn*).

7. Other *Lauha, Dhatu*-In ancient period the term *Dhatu* and *Loha* were used in different meaning. The derivation of term *dhatu* is "*dadhati lohaan*" that means which hold the *loha* i.e. which contain *loha* (gold, silver etc) and presently called as "ORE" The term *loha* derived as "*luhyate aakrisyate dhatubhyaha*" and consider that gold,<sup>8</sup> silver etc supposed to be obtained from earlier said *dhatu*. As the time passed the gold, silver, copper, etc are directly assumed as *dhatu* due to frequent use in therapy and in common people. These are known as metal element and the term *loha* limited only for *Lauha* (iron).

On the basis of these properties all elements can be divided into three groups metals, non-metals and metalloids. The common example of metals is Iron, Zinc, Silver, Aluminium, Copper, Gold, Platinum, Chromium, Magnesium, Nickel, Cobalt, Tin etc. All the metal are solid at room temperature (except mercury) and having property of malleability, ductile, conduct heat and electricity, lustrous, hard (except sodium and potassium), strong, high tensile strength, generally have high melting point and boiling point, high density etc<sup>9</sup>. Metals are generally good conductors of heat or thermal conductivity (e.g silver, copper aluminium) and electricity (e.g. Silver, copper, aluminium). These metal have particular property as also described in Ayurveda and these are use as *dahanopakarana* in *Agnikarma*.

Astanga Samgraha mention that for *Dahana* hot iron rod, silver, gold etc. metals red hot coal can be used.

In present scenario the *panchdhatu shalaka* are designed by eminent scholars having excellent result in clinical practice. The *Panchdhatu shalaka* is generally made up of *Tamra* -40%(copper), *Loha* 30%(iron), *Yasada*10% (Zinc), *Rajat*10% (silver), *Vanga* 10%(tin). The *panchdhatu shalakas* have different forms, as per their use

Table-3 Melting point of various metals<sup>10</sup>

METAL	MELTING POINT
1.Cast Iron	2200 C
2.Cuppor	1981 C
3.Gold	1945 C
4.Zinc	787 C
5.Silver	1761 C
6.Aluminium	1218 C
7.Brass	1700 C
8.Bronze	1675 C

8. *Kshaudra* or *Madhu* or Honey-It is liquid in nature and used for *Agnikarma* at vessels, ligaments, joints and bones.

9. *Guda*-Jaggary

10. *Sneha*-It include *vasa*,*Tailam* (oil), *ghrita*

11. *Madhuschista*-The waxes are organic compounds or lipids. The lipids are a class of chemical compound. When wax is heated it melts (at 45°C) & converted into low viscosity solution which are insoluble in water. The source of wax may be animal waxes, vegetable waxes, mineral waxes, petroleum waxes & may be synthetic or natural."

12. *Yastimadhu*-(*Glycyrrhiza glabra* Linn.) Its root are used for *Agnikarma* purpose as a *dahanopkarana*.

13. *Suchi*-The *Suchi* is needle which can be used as a *Dahanopakarana* in case of minor lesion.

14. *Varti*-The *varti* is made up of cotton in specific shape by drugs like *Guggulu* (*Commiphora mukul*) and other in form of suppository etc. The *varti* are thinner at both end and thick at middle site. This is considered as *Dahanopakarana* by Astanga Hridaya and advised to apply for *twakdagdha*

15. *Suryakanta*-The *Suryakant*, *Suryamani*, *Vahnigarbha*, *Deeptopal* are synonyms. It is a type of minor gems or semi precious stones and is known as sun stone. It is whitish similar like glass and fire is originated in presence of sun rays. Its chemical composition contains sodium or potassium, aluminium, *sikta* (sand). *Suryakant* has *ushnaveerya*, *medhya*, *rasayana* and *kaphavatashamak* property<sup>11</sup>. Its hardness is measured as 5.5. It is mentioned in Astanga Hridaya as a *dahanopkarana* for *twakdagdha*..

## DISCUSSION

*Agnikarma* is elective and employed for such cases where medicines, surgery and *kshara karma* fail to bring about desired results.

‘Hippocrates’ says: “Those diseases which medicine do not cure, the knife cures, those which iron cannot cure, fire cures ,and those which fire cannot cure ,are to be reckoned wholly incurable”.

*Dahaopakrana* are the instrument and material with the help of which therapeutic burns are made. The wound created by *agnikarma* is infection free as the heat destroys infection causing micro organisms. Various *dahanopkarana* are mentioned above for *Agnikarma* but on real ground few limited material are frequently practiced by clinician as per their need, availability and on the basis of experience. The commonly used *dahanopkarana* are *Tamrashalaka*, *Lauhashalaka*, *Rajatshalaka*, *Swarnashalaka*, oil, *Guda* (jaggary) etc. At present the most popular *Agnikarma shalaka* is *Panchadhatu shalaka*, which are designed and investigated at scholars. Probable mode of action according to *Ayurveda*:<sup>12</sup>

various centres by eminent

Properties of *Agni*:

*Sukshma*- *kapha* decreases

*Laghu* – *kapha* decreases

*Theekshna*-*vata* decreases, *kapha* decreases.

*Ushna*-*vata* decreases,*kapha* decreases

Action of *agnikarma* may be accessed by the properties of *agni*. it removes *srotavarodha* , *avarana* and increase in *rasarakta samvahana* to the affected site. It works deep in tissue because of its power of penetration to deep tissue by *laghu*,*sukshma*and *theekshna guna*.*Dahana karma* is having the property

of *sirasankochana* by that quality even it helps for *rakta sthambana*(haemostasis). *Agnikarma* is practiced in present scenario as cauterisation, lithotripsy, prostatectomy, removal of warts, moles, hairs, precancerous lesion, dry eczema, cyst, keloids, lumbar spondylitis etc. It plays a major role in controlling internal tissue haemorrhage, avoid recurrence in various surgeries. Acharya *Dalhana* quote that *agnitapt shastra* prevent sepsis. Actual cauterisation or cautery (therapeutic burn of diseased tissues), chemical cautery, electrocautry (or galvanocautry), diathermy cautery, cold cautery, laser in medical use, laser photocoagulation, correcting vision, lithotripsy are the advancement and derivatives of concept of *Agnikarma*.

In ancient literature a lot of conditions are listed in which *Agnikarma* are indicated and practiced. Although all of them are not exactly practiced in present era but it can be said that in present scenario the application of *Agnikarma* is practicable and has a lot of possibility in treatment of variety of *vataja* and *kaphaja* diseases. The *shalya karma*, *ksharakarma* & *Agnikarma* are not pain-free procedure in comparison to intake of medicines

#### CONCLUSION:

The Thermal behaviour of particular material or instrument or drug is important to understand the concept of *Agnikarma* and the *Dahanopakaranas* to be used. Acharya's knew this concept of latent heat capacity, heat retention capacity, heat dissipation etc and hence they used *pippali*, *aja sakrat*, *godanta*, *sara*, *shalaka* were used for cauterization of the skin lesion i.e. for superficial use. *Jambavaustha* and other metallic instruments are used for *mamsagata vikaras*(muscular lesion)and shows deeper

cauterization. *Kshaudra.guda,sneha* are used for the lesion of *sira-snayu-sandhi-asthi*. Thus the choice of *dahanopakarana* are very logical and scientific. They are designed in such a way to transfer heat properly, perform cutting, coagulation etc and to cure disease.

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