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Review Article

Role of Ghritapana prior to Shodhana karma: A Critical Review.

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ABSTRACT:
Snehapana is a type of *Snehana* therapy which is an independent *Upakarma* included under the *Shadvidha Upakarmas* as well as *Purva karma* measures. *Snehana* (internal oleation) is a major preparatory procedure to be performed before *Shodhana karma* (purification). The entire procedure of *Shodhana* (purification) depends upon the proper mobilization of humors (*Doshas*) from the periphery (*Sakha*) which is to be achieved with the help of *Snehana* (Oleation) and *Swedana* (Sudation therapy). Most of what is in our body is either water soluble or fat soluble. If the body is exposed to water soluble toxins it easily eliminates them with the kidneys and the sweat glands flushing them from the body in our urine and sweat. Fat soluble toxins are not so easily eliminated. *Shodhana karma* is said to facilitate homeostasis within the body by the expulsion of *Dosha's*. These *Dosha's* to some extent can be considered as water soluble and fat soluble toxins..

KEY WORDS: *Ghritapana*, *shodhana*, toxins, *dosha*.

INTRODUCTION:

Ayurveda the ancient system of medicine is showering its valuable treasures to mankind since ages and even today competing with the modern system of medicine which has incorporated latest biotechnologies and developments of the science and also getting immense global support. *Ayurveda*is a holistic system of medicine; it treats the individual as a whole but not independent system wise.

As part of normal metabolism, the body produces toxins which have to be eliminated, otherwise they poison the system. Therefore, the body has evolved a mechanism for getting rid of these toxins and the methods that it uses are as follows:

- Antioxidant system - for mopping up free radicals.
- The liver - detoxification by oxidation and conjugation for excretion in urine.
- Fat-soluble toxins can be excreted in the bile. The problem here is that many of these are recycled because they are reabsorbed in the gut.
- Sweating - many toxins and heavy metals can be lost through the skin.
- Dumping chemicals in hair, nails and skin, which is then shed.[1]

Here the fat soluble toxins are not so easily eliminated. In the National Health Adipose Tissue Survey (NHATS), samples of fat cells were collected in the US and found over 20 toxic chemicals in a regionally diverse sample of the population. Since the green revolution and better living through chemicals in the 1940's many fat soluble chemicals have been introduced into the environment and thus the food chain. Many of these are foreign to the detoxification pathways of the body and so the body is unsure how to respond and will store them in the fat cells. If the toxins are in the body for a short period of time then it is unlikely that they will do much harm, but when they are stored in the fat cells their effect on the body is not positive. As they continue to accumulate the oxidation and free radical damage that they cause can lead to metabolic

and systemic dysfunctions. The systems that are most strongly affected by these toxins are immune, neurological, and endocrine systems.[2]

As *Ayurveda* has always emphasized the necessity for the elimination of the *doshas* over the conventional treatment followed for various disorders. *Shodhana karma* has evolved as an integral part of the *ayurvedic* therapeutics. Prior to *Shodhana karma Snehapana* needs to be done. *Snehapana* is preparatory step of *Shodhana karma* such as *Vamana*and *Virechana*.

MATERIAL AND METHODS:

This is conceptual type of study. All sorts of references has been collected and relevant material is compiled from various available *Ayurvedic*classics texts like *Charaka Samhita etc.* as well as available commentaries on it. Research articles are also searched from various websites. All Compiled matter is reorganized and critically analyzed for the discussion and attempt has been made to draw some fruitful conclusions.

DISCUSSION:

Ayurvedic view

Snehana is a major preparatory procedure performed before *Shodhana karma*. The entire procedure of *Shodhana* depends upon proper mobilization of humors (*Doshas*) from the periphery (*Shakha*) which is achieved with the help of *Snehana* and *Swedana*. If *Snehana* (internal oleation) is not done properly, it definitely affects the *Shodhana Karma* (purificatory therapy) afterwards and also chances of complications. Hence, it is obligatory to start and increase the dose of *Sneha* (lipids) in appropriate & judicious way considering the Digestive fire (Agni) & nature of bowel habit (*Koshtha*) of the subject.

Substances used for *Snehapana* karma – Internal Oleation treatment:

Cow ghee, sesame oil, animal muscle fat and bone marrow are the four types of fats that are usually administered. Among them, ghee is the best, because Ghee has the power to assimilate effectively the properties of other substances. (*Samskara Anuvartana*) Ghee is congenial to human body since birth and it does not cause any burning sensation.

Ghee is very light to digest. Ghee the most efficient for Pitta balance and *Taila* is the least efficient to balance Pitta. When compared between the four, Oil is heavier (hard to digest) than ghee, muscle-fat is heavier than oil, marrow is heavier than all, to digest.

Sometimes, rather than one ghee or oil etc, a mixture of 2 or more fats is used for oleation. Mixture of two oleating substances is called as *Yamaka*. Mixture of three is called as *Trivrit* and all four combined is called as *Mahasneha.*

Two methods of fat administration:

Sneha Vicharana means – consuming after mixing with food items. –this makes 64 combinations of fat recipes.

Acchapeya means – administering pure oil / ghee / muscle fat / marrow, without mixing or processing it. It is the best way to administer fats as it serves the function of fats and ensures quick lubrication.

Ideal dose of *Snehapana:*

There are three types of doses of *Snehapana*[16] (cha. Su. 13/29-30)

1. *Uttammatra* (maximum dose) – which gets digested in 24 hours.
2. *Madhyamamatra* (medium dose) – which get digested in 12 hours.
3. *Hrasvamatra* (minimum dose) – which gets digested in 06 hours.

As per Acharya Vagbhata,

Hrisayasimatra (very minimum / test dose) – which gets digested in 03 to 04 hours

Indications for maximum dose[16]

As per *Acharya Charaka*, those who are in the habit of taking of taking plenty of *snehadravya* daily, tolerate hunger and thirst, have excellent digestive power and physical strength, are inflicted with gaseous tumour, snake poisoning, erysipelas, insanity, dysuria and hardness of faeces should take principal dose. If we consider these indications it is clear that all these conditions mentioned above need quick elimination of doshas (*shodhana*). Hence Acharya *Charaka* has explained about maximum dose that it spreads all over the body containing *Abhyantara*, *Madhyama* and *Bahyamarga* and thus attracts all the *doshas* to *koshtha* and then expels them out. It means that this dose is itself a *Shodhana* and will not require further *shodhana*.

Indications for medium dose[16]

Here *Acharya Charaka* states about that those who are suffering from eruptions, boils, pimples, itching, eczema, leprosy, urinary disorders and *vatarakta*, who do not take too much food, have soft bowel and average strength should take medium

dose. This dose is hardly liable to complication, does not cause too much weakness and does *snehana* with ease.Thus above quote indicates that this is the dose which should be used as *poorvakarma*.

Indications for minimum dose[16]

AcharyaCharaka further states that the old, the children, the delicate, the ease living, those for which empty bowels are not beneficial, have low digestion and are suffering fromchronic fever, diarrhea, and cough, have poor strength, should take the low dose of sneha

But *Acharya Vagbhata* states that *snehapana* should be done with *uttammatra*. He also suggests medium dose for *Shamana* purpose.[17]

An interesting quotation by *Vangasena* regarding *Snehapana* doses.

According to *Vangasena*[18]

- Maximum dose should be given for one day,
- Medium dose for three days and
- Minimum dose for 7days.

Probable dosage in general practice[15]

1. The example of cloth is spoken in the relevance of **quantity** of sneha-pana to be used and acharya warns not to use more sneha-pana which ends in futile.

2. In the example of mud ball, duration of snehapana is to be determined cautiously. Acharya wants us to know the sthana of dosha dushya sammurchana prior to deciding the **duration** of Shodhananga-Snehapana.

Thus *snehapana* is to be commenced by giving a test dose of about 25 ml approx.of plain ghee (*acchasneha*) to the patient in empty stomach early in the morning. Patient should be advised to have lukewarm water during *snehapana* duration and not to have anything unless he feels hungry. To rule out the digestion of ingested ghee has properly occurred he is advised to observe for pure belching after lukewarm water intake. Then he is advised to have light food in the form of moong khichadi. The same procedure is repeated for a period of 3 days min. to 7days max. or until *samyak snighadha lakshanas* are achieved. The quantity of *snehadravya* is to be increased considering the Digestive fire (Agni) & nature of bowel habit (*Koshtha*) of the subject as well as the time period taken to digest previously administered *snehadravya.*

The below mentioned (Table 1,2,3,4)*Snehapana* dosages are based on the *nidarshana tantrayukti* being implied to get the fruitful result. The below mentioned dose may vary depending upon person to person thus the Vaidya should properly assess the following points before determining the dose.

- Rogamarga
- Vyadhiswaroopa
- Agni bala
- Koshtanirnaya
- Dushtisthana – involved dhatus
- Emergencies – context of casualtiesetc.are to be considered.

Lipid (*Sneha*) is hydrophilic, hence after appropriate oral administration of lipids (*Snehapana*) the cells of body become saturated with fats. Then the fat material thus transported comes out of the cell to extra-cellular fluid by process of osmosis. The levels of fatty acids etc. increases in the blood resulting in the high plasma volume as there is a quantitative increase due to the aqueous properties of lipids (*Sneha*) and liquefied metabolic waste brought from the tissues (*Mala*). The equilibrium of the normal plasma level is maintained and so the extra amount of liquid reaches to the *Koshtha* (Gastro Intestinal Tract) to be expelled out of the body (*AnuPravana Bhava*). When emetics or purgatives are administered, these increased amounts of the body fluids are evacuated by which the vitiated *Dosha* (humors) and metabolic waste (Mala) are also expelled out resulting in the radical cure of the disease.

By the combined effect of oral ingestion of lipids (*Snehapana*) and fomentation (*Svedana*), there is an apparent increase in the *Dosha* (humors) coupled with liquefaction of *Dosha*, metabolism of *Dosha*, opening of tissue channels (*Srotomukha*) and control of neurohormonal mechanism (*Vatanigraha*), the *Doshas* are propelled to the *Koshtha* (GIT) by *Anupravana Bhava*,(diffusion) and then they are expelled out through nearest route by appropriate purificatory therapies (*Shodhana Karma*)[3,4].

Approximation of dose of *Sadyo-snehakrama*.

Table 8

Dose	Dose on 1st day	Dose on 3rd day (with *Saindava*)	Body weight (standard)
a) Alpa	24ml	72ml	≥50kg
b) Madhyama	36ml	108ml	65-70kg
c) Utthama	48ml	144ml	≥ 90kg

Approximation of dose of *Hrasva matra-snehakrama*.

Table 9

Dose	Dose on 1stday	Dose on 2ndday	Dose on 3rdday (without*Saindava)*	Body weight (standard)
a) Alpa	24ml	48ml	72 ml	≥50kg
b)Madhya	36ml	72ml	108 ml	65-70kg
c)Uttama	48ml	96ml	144 ml	≥ 90kg

Approximation of dose of *Madhya mamatra-sneha*.

Table 10

Dose	1stday	2nd day	3rd day	4th day	5th day	Body weight (standard)
a) Alpa	24ml	48ml	72 ml	96ml	120 ml	≥50kg
b)Madhya	36ml	72ml	108ml	144ml	180 ml	65-70kg
c)Uttama	48ml	96ml	144ml	192ml	240 ml	≥90kg

Approximation of dose of Prabhoutha*matra*-Sneha

Table 11

Dose	**1st day**	**2nd day**	**3rd day**	**4th day**	**5th day**	**6th day**	**7th day**	**Body weight**
Alpa	24ml	48ml	72ml	96ml	120 ml	144 ml	168 ml	≥50kg
Madhya	36 ml	72 ml	108 ml	144 ml	180 ml	216 ml	252 ml	65-70kg
Uttama	48 ml	96 ml	144 ml	192 ml	240 ml	288 ml	336 ml	≥90kg

Understanding Mode of action of Snehapana as per Ayurveda

A beautiful quotation by *Acharya Charaka*, he explains as from an oleated utensil water is removed without any effort, in the same way*kapha* etc. *dosha* are detached from theoleated body with the help of drugs. As fire liquidates the damp wood from all sides, sudation liquefies the consolidated impurities in the unctuous person. As the dirt of the cloth is washed with water after deterging in the same manner the impurity of the body is eliminated by evacuative measures after deterging it with *snehana* and *swedana.* In the above verses *Charaka* has emphasized odythe necessity of snehapana and its role within the body.

If we want to understand how our body reacts to the excess of lipid intake then we can get this understanding by decoding a verse of Acharya Charaka, he states that as a cloth absorbs water and releases the excess, the body also assimilates the lipid substance according to its digestive power while the excess is thrown out. But when the oleated substance is taken at once as whole, it is being released out entirely without effecting the body, just like the water poured over an earthen mass escapes quickly without moistening it. Here we have to consider digestive power not only *Jatragni* but also *Dhatavagni*. The *Dhatavagni*of each *Dhatus* assimilates the excess of *snehadravya* and thus after proper metabolism the excess is brought back to the *koshta*and thus released out, it is believed that with excess *sneha* substance *DhatugataMala* is also excreted. Even Acharya *Chakrapani* has supported this fact stating that excess undigested fat is excrete out from the body denoting the "*AdhastadSnehaDrashana*" Statement quoted by *Acharya Charaka*. After the appearance of this lakshana*Snehapana* intake is also stopped and thus evacuative process is thereafter undertaken.

Modern View

Molecular makeup of ghee[5]

- A full spectrum of short (SCFA), medium (MCFA) and long chain fatty acids (LCFA), both unsaturated and saturated.
- Omega 3 and Omega 9 essential fatty acids.
- Vitamins A, D, E and K.
- Ghee made from organic butter of pastured cows is one of the highest natural sources of CLA (Conjugated Linoleic Acid)
- 9 phenolic antioxidants and numerous other minerals.

In alternative therapies in health and medicine 2002, reported the study in Germany that, most of today's environmental toxins are lipophils that accumulate in fatty tissues of the body. These fat soluble toxins are associated with a range of diseases such as hormone disruption, immune system suppression, allergies, diseases of liver, skin, cancer, neurological illness etc. In this study result showed blood level of PCB's (poly chlorinated biphenyl) and several other toxins lowered in detoxification (*Panchakarma*) group than control within days of *Panchakarma* therapy. This clearly indicates the role of *Snehapana* and *gati* of *doshas* from *shakha*to *koshtha*.

Many vitamins are fat soluble, many biochemical reactions occurs in the human body with the help of fat media.

The researchers are of the opinion that many herbal drugs acting on the nervous system can act through medium of fat only. Fat is an excellent medium to drugs so *Sneha* is good medium to accumulate the toxins and act as a vehicle to travel from one part to another part of the body. The large quantity or '*vardhaman' Sneha* interfere with the chain of free radicals and produce the metabolite in the cells. After reaching the threshold, metabolitesenter into the systemic circulation and reach the liver. These metabolites are detoxified within the liver and excreted via bile. So the quality of bile changes and further fat may not digest and appear in the stool i.e. *adhastadsnehadarshana*.

The procedure of *abhyanga, swedana* and diet before *shodhana* facilitates the excretion of metabolites into alimentary canal which are available for *shodhana*[6].

Pharmacodynamic Understanding of Ghritapana prior to Shodhana.

Now let's check the journey of ghee(lipid) intake(*Snehapana*), it travels thru oesophagus to stomach to small intestine were it gets absorbed. Small intestine is lined by specialized epithelial cells, these are special cells that can absorb the nutrients. When the fat globules reaches the small intestine it

comes in contact with the secreted bile juice which acts as a detergent and thus breakdowns the fat globules into minute particles which facilitates further absorption of the minute fat particles thru the lumen of small intestine. The absorbed particles are stored in the form of triacylglycerol (TAG's) and lipoproteins within the body.

Almost all the fats in the diet, with the principal exception of a few short-chain fatty acids, are absorbed from the intestines into the intestinal lymph. During digestion, most triglycerides are split into monoglycerides and fatty acids. Then, while passing through the intestinal epithelial cells, the monoglyceridesand fatty acids are resynthesized into new molecules of triglycerides that enter the lymph as minute, dispersed droplets called chylomicrons, whose diameters are between 0.08 and 0.6 micron. A small amount of apoprotein B is adsorbed to the outer surfaces of the chylomicrons. This leaves the remainder of the proteinmolecules projecting into the surrounding water and thereby increases the suspension stability of the chylomicrons in the lymph fluid and prevents their adherence to the lymphatic vessel walls.

Most of the cholesterol and phospholipids absorbed from the gastrointestinal tract enter the chylomicrons. Thus, although the chylomicrons are composed principally of triglycerides, they also contain about 9 per cent phospholipids, 3 per cent cholesterol, and 1 per cent apoprotein B. The chylomicrons are then transported upward through the thoracic duct and emptied into the circulating venous blood at the juncture of the jugular and subclavian veins[7].

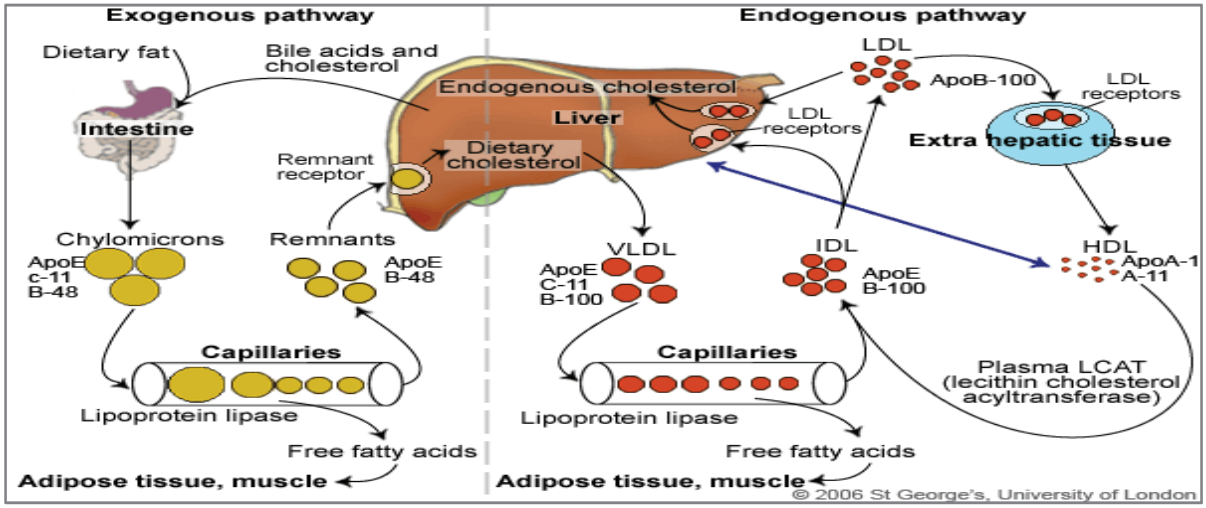

Image 1. Lipid metabolism exogenous and endogenous pathway

The active ingredient in the ghee is also made in the small intestine. The raw material from which ghee is made is basically butter. The primary fatty acid in butter is called Butyric acid, also known as butyrate, is a short chain fatty acid (SCFA) that the intestinal tract thrives on, as it helps to protect the integrity of the gut wall[8]. While the process of making ghee yields an even more concentrated source of butyric acid than butter. But there is another source of butyric acid: the busy beneficial microbes in the small intestine. The healthy fiber is said to directly feed the intricate microbiology in the small intestine. In turn, the small intestine microbes convert this ingested fiber to butyric acid, which is also the primaryingredient in ghee. Thus the microbes in the small intestine are making their own butyric acid[11]. The cells of the colon use butyric acid as their preferred source of energy and their major agent for supporting the health and integrity of the intestinal wall[8]. Research has shown that patients with unhealthy digestive tracts do not produce butyric acid, and have low levels of fatty acids or related oils in the gut[8]. In Ayurveda, taking ghee internally through ingestion and enemas (*Ayurvedic* enemas referred to as *Basti*) has been done successfully for thousands of years to support intestinal health and function[5].

Benefits of ghrutapana[5]

- Flushes old bile from the body.

- Stimulates the liver to make new bile, so 94% of old toxic bile is not re-absorbed[7].
- Supports the primary source of energy and immunity for the cells of the gut[8].
- Supports the health of the beneficial bacteria in the gut who make butyrate[8].
- Lubricates and softens the hardened tissues of the body.
- Pulls stored fat soluble toxins and molecules of emotion out of the body[10].
- Encourages fat metabolism and weight loss[10].

The administered ghee lubricates all the channels of the body, including the lymph, and forces out the toxins from them, into the digestive tract. It also calms down the mind and reduces mental stress. As a result, the body immunity increases, the effects of the ailments subside and frequent recurrence of the disease is prevented. It also increases the person's appetite level and accelerates peristaltic movements of the intestine. Thus by the above concept it can be safely said that *Snehapana*(ghrita) facilitates the passage of the toxins from macro to micro cellular level and thus facilitates the easy passage of toxins after *Shodhana karma* and thus helps to maintain homeostasis within the body.

CONCLUSION:

Here is just another way the ancient wisdom of Ayurveda has been proven by modern science. This not to say that, just because something is ancient, we should all do it. It does, however, encourage us to look deeply into techniques that have lasted thousands of years and find the science behind them. Often times, the research provides fascinating explanation and support.

Since the process of *Snehapana* which is generally practiced now-a-days includes administration of *acchasneha*ie. Only ghee. Other *SnehaVicharna* procedures also needs to be scrutinized for better understanding with respect to respective diseases and thus its scientific understanding needs to studied as well as the following results are to be brought forward.

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