

# A Critical Review on the Concept of Avapeedaka Snehapana, a Special Mode of Lipid Administration

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## Abstract

*Avapeedaka Snehapana* is a unique and special method of internal administration of *Sneha dravya* (unctuous medicine) mentioned in the classical ayurveda texts. It is mainly indicated in *mutravegarodha janya vikara* (diseases due to the suppression of urge of micturition). Because of the lack of adequate review and analysis, this method of administration of *snehapana* (internal administration of lipid) is losing its significance from the practices and the concept remains unexplored. The reasons for not being practiced like other *snehana* (oleation therapy) procedures are because of the less understanding of the concept of administration, scattered and minimal textual references. Through this review, we intend to have a detailed analysis on the concept of *avapeedaka snehapana* mentioned in the *Brihatrayees* (Caraka Samhita, Sushruta Samhita, and Ashtanga Hridaya—the 3 main texts of ayurveda) with its possible practical methods of administration. The role of *ghrita* (ghee) in inducing the ketogenesis is also analyzed. Being a ketogenic diet, the benefits of *ghrita* are interpreted. These efforts may help bring down *avapeedaka snehapana* into the mainstream of practice.

## Keywords

*avapeedaka snehapana*, *abhyantara snehana*, ketogenic diet, ayurveda, panchakarma

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*Sneha* (lipid) is the essence of an individual and his or her life.<sup>1</sup> *Snehana* (oleation) has a vital role in ayurveda treatments in both preventive and curative aspect. It can be broadly divided into *bahya snehana* (external oleation) and *abhyantara snehana* (internal oleation). *Snehapana* (internal administration of lipid) comes under *abhyantara snehana* and is the internal administration of *sneha dravya* (lipid). *Sneha dravya*<sup>2</sup> can be *taila* (oil), *ghrita* (ghee), *majja* (bone marrow), and *vasa* (muscle fat) individually or in combination. *Snehapana* is the foremost treatment to be done prior to *sodhana* (purificatory procedure) and is one among *purvakarma* (prepurificatory procedure). On the basis of therapeutics, *snehapana*<sup>3</sup> can be classified based on their action as *brhmana* (nourishing), *samana* (pacifying), and *sodhana* (purifying).

## Avapeedaka Snehapana

*Avapeedaka snehapana* is a special pattern of oral administration of *sneha*. Here *Sneha* is administered in 2 *kala* (period) at a stretch, that is, *pragbhakta* (before food) and in *jeernantha avastha* (after the digestion of food) in *hrusva matra* (minimal

dose) and *uttama matra* (maximal dose) respectively.<sup>4</sup> *Uttama matra* and *Hrusva matra* are the quantities of *sneha* that digest in a period of 24 hours and 6 hours, respectively.<sup>5</sup> The word *Avapeedaka* implies the meaning of either *peedana* (pushing down) of *dosha* (bodily humor) or the *peedana* of *ahara* (food).<sup>6</sup>

*Avapeedaka snehapana* is considered as *pittanilamayagna* (pacifies *pitta* humor and *vata* humor). It has a special affinity toward bladder, thighs, and low back. It is also *vrishya* (aphrodisiac in action).<sup>7</sup> In the context of *Avapeedaka snehapana*, Ayurveda texts mention *ghrita* as the better choice to reduce

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*vatakopa* (aggravation of *vata*) rather than *taila* even though *taila* (sesame oil) is the best *vata shamaka* (pacifies *vata*) *Sneha dravya*. *Taila* is not advisable in this condition because of its *baddhavitt* and *alpamutra swabava*<sup>8</sup> (property to obstruct feces and scanty urination). Hence, *ghrita* is the drug/*sneha* of choice used in this pattern of *snehapana* even though various types of *sneha dravya* are mentioned for internal administration.

## Indications

*Avapeedaka snehapana* is indicated in specific conditions like

- *mutra vegavarodha janyavikara chikitsa* (management of diseases due to the suppression of micturition reflex)
- *mutra udavarta chikitsa* (management of the obstruction of urine)
- *adhonabhogatavata chikitsa* (neurological conditions below the umbilicus)
- *arshachikitsa* (management of hemorrhoids).

In *mutra vegavarodha janyavikara and mutravaha srotodushti* (vitiation of channels of urine), we can find the *apana vayu* (1 among the 5 types of *vata* humor) *vaigunya* (abnormality). *Avapeedaka snehapana* brings *kledana* (to bring of lubrication) to the *mutravahasrotas* (channels of urine) and *anulomana* (appropriate direction, generally downwards) of *apana vata*.

In *adhonabhogata vata*,<sup>9</sup> *avapeedaka snehapana* is administered as *pragbhakta*, that is, the food has to be taken after consuming the *ghrita*.

In *arshachikitsa*,<sup>10</sup> *avapeedaka snehapana* is administered as a last resort. In *raktaja arsha*, (bleeding hemorrhoids), when the bleeding does not stop even after conservative management, ghee with *mamsa rasa* (meat soup) is advised, which is a type of *bhrumhana snehapana* and is a *santarpanachikitsa* (nourishing treatment).

## The Possible Methods of Administration of Avapeedaka Snehapana

The detailed study of the concept has drawn the following ways of administration

### Method 1

By early evening, *sneha* is given in *hrusva matra* and the food is administered after a while. Let the patient sip hot water till he or she sleeps. The next morning, after ascertaining the *jeernahara lakshana* (status of digestion of the food), *uttama matra* is calculated. During *sooryodayakala* (sunrise) and before the feeling of hunger *uttama matra, sneha* is administered. *Snehapana acharika vidhi* (the diets and regimens to be followed during and after the *snehana*) is advised to follow during the period of *snehapana*. Rice gruel can be consumed whenever the patient feels hunger till the procedure ends.

The dose is calculated based on the time taken for digestion of ghee.

### Method 2

During sunrise, *Snehapana* is administered in *hrusva matra* and *satmya ahara* (compatible food, preferably rice gruel) is given after 30 to 45 minutes. The time of administration is significant as it is the ideal time for *uthkleshana* (secretory). After attaining the *jeernahara lakshana* and when hunger is felt, *uttama matra* is calculated and administered. *Snehapana acharika vidhi* is advised to follow during this period. Rice gruel can be consumed when the patient feels hunger.

### Method 3

*Hrusva matra*: If the condition is not severe, in *avarasatwa* (minimal mental capacity) or *alpabala* (minimal physical strength) patients, we can go for *hrusva matra* in *pragbhakta*, that is, after *sooryodaya kala, snehapana* is administered. Rice gruel is advised as food when the patient feels hunger. This *prayoga* (method) can be continued every day till *vyadhi samana* (pacification of disease).

### Method 4

*Uttama matra*: If you know the *agnibala* (digestive strength) of the patient, directly *uttama matra* can be administered, that is, during sunrise *snehapana* is administered and the patient is advised to sip hot water frequently. When the person is hungry, rice gruel is given as food. This is repeated till he or she attains *samyak snigdha lakshana* (symptoms of adequate unctuousness).

## Discussion

*Pragbhakta* is 1 among the 10 *ausadhakala* (ideal time for the administration of medicine).<sup>11</sup> It is also named as *annadou*, which means the medicines administered before food. Generally, indicated in the *apana vata vigunatha jeernathika prayoga* is also called as *annannaprayoga* (without consuming food).<sup>12</sup>

Even though there is an opinion of administering *avapeedaka snehapana* in 2 ways, either in *uttama matra* or *hrusva matra*, the *peedana* of *dosha* and *ahara* takes place in both. In method 3, the quantity of *sneha* administered is *hrusva matra* and looks similar to *samana snehapana*, whereas in method 4, *uttama matra* is administered and it behaves as *sodhana snehapana*.

The term *yojanadwayam*<sup>13</sup> is mentioned in the context of *avapeedaka snehapana* and commentators gives an explanation to this term as 2 patterns of *snehapana* either administering the *hrusva matra* and *uttama matra* together or separately. But *avapeedaka* is called so only when both *uttama matra* and *hrusva matra* are administered together as in methods 1 and 2.

In all the indications mentioned above, *vilomagati* (movement in wrong directions) of *apana vata* (a type of *vata*) takes place and acts as a causative factor. Correcting the path of

*apana vata* is done by the administration of *sneha*, that is, *peedana* (compression) of *dosha* by *sneha*. This may be the reason behind a specific name been coined as *Avapeedaka*.

*Mutravegarodha janyavikara*<sup>14</sup> includes *angabhanga* (body pain), *asmari* (urinary calculi), *vastivedana* (pain in urinary bladder), *medravedana* (pain in penis), *vankshanavedana* (pain in the inguinal region). In all these conditions, diuresis is the line of treatment and frequent micturition is important as it pacifies the condition.

Lipids are hydrophobic in nature. Almost all the lipids are digested in the small intestine because of the availability of bile salts, pancreatic lipolytic enzymes, and intestinal lipase. After absorption from intestines, lipids are transported to the liver where they are converted into triglycerides. From the liver, it is then hydrolyzed and converted into glycerol and fatty acids, which moves to the target tissues. Glycerol enters the glycolytic pathway for glucose breakdown and it is then used in the form of energy. Whereas the fatty acid is degraded ( $\beta$  oxidation) into acetyl CoA in the mitochondria, which enters the Krebs cycle to form  $\text{CO}_2 + \text{H}_2\text{O} + \text{ATP}$  (adenosine triphosphate). The acetyl CoA at the liver condenses to form aceto-acetyl CoA, which produces aceto-acetic acid. The Aceto-acetic acid is reduced to form  $\beta$ -hydroxybutyric acid, which after decarboxylation forms acetones. Aceto-acetic acid, acetone, and  $\beta$ -hydroxybutyric acid are together called ketone bodies. The processes of formation of ketone bodies are called as ketogenesis.<sup>15</sup> The end-products of the ketogenesis process are the ATP molecules and the  $\text{H}^+$  ions. Thus, as the ketogenesis increases, the water excretion also increases, which will help in the treatment of the diseases.

### Ketogenic Diet

The ketogenic diet is a high-fat, adequate protein, low carbohydrate diet that in medicine is used primarily to treat disease.<sup>16</sup> The diet forces the body to burn fats rather than carbohydrates and increases ketogenesis in the body.<sup>17</sup> Ghee induces ketogenesis in the body by breaking down of the fatty acid.

The ghee is administered as *avapeedaka snehapana* and *rakta shali* (brown rice) is used as diet in the form of *yavagu* (rice gruel). *Ghee* contains almost 99.5 g of fat with minimal amount of protein and zero carbohydrate per 100 g while the gruel of brown rice contains 0.9 g of fat, 2.6 g of protein, and 23 g of carbohydrate. Thus, *avapeedaka snehapana* shows similar combination as a ketogenic diet.

Normally, ketone bodies are used without being accumulated in the body by many tissues with the production of carbon dioxide and water. The human brain can use an appreciable amount of ketones bodies during prolonged starvation. Diabetic mellitus, starvation, high-fat or low-carbohydrate diet, and muscular exercises are the few conditions leading to ketosis.

On low-carbohydrate diet, the energy requirement should be supplied from the oxidation of fat. For this reason, fats are mobilized from the depots and brought to the liver, whose glycogen content is low and gets loaded with fats. Consequently, fat oxidation takes place at a heightened rate and

more ketones are formed. They come out of the cell and enter the bloodstream and finally eliminated through urine.

In ketosis, the ketones are formed at a faster rate than can be used. When blood level of ketone bodies rises above the renal threshold, they are excreted in the urine, which is known as ketonuria. During ketosis, there is a high amount of acids and acidity in the urine, so it is associated with acidosis in the body. During the maintenance of the acid-base balance,  $\text{Na}^+$  ions are lost from the plasma and body fluids and consequently, there is a loss of body fluids resulting in the dehydration. Several hormonal changes take place to promote rapid fatty acid mobilization in the adipose tissue. Pancreatic secretion of insulin is decreased because of the absence of the carbohydrate; this not only reduces the rate of glucose utilization by the tissue but also decreases the fat storage, which favors the fat metabolism. Epinephrine and norepinephrine, glucocorticoids growth hormones, and thyroid hormones also have an influence on the fat metabolism.<sup>18</sup>

So, it may be understood that *avapeedaka snehapana* can also mobilize the fat in the body. Almost 50% fat depositions in the body are found in the perirenal tissues, mesenteries, and omentum. These areas are present in the *adhonabhi pradesha* (below the umbilicus), which is one among the indications of *avapeedaka snehapana*.

The ketogenic diet, as the name implies, also provides increased blood ketones to support the energy needs of normal tissues.

*Apana vata* is responsible for the proper functioning of micturition, defecation, semen ejaculation, menstrual blood, and childbirth.<sup>19</sup> As *apana vayu* is hampered in the conditions like *ashmari* (urinary calculi), *udavarta* (upward movement of *vata*), and *mutrakrichra* (dysuria), *Avapeedaka snehapana* can be clinically administered. Ketogenic food can increase the urine output and thereby may have an influence on *mutra vegarodha janya vikara* and *mutravaha srotodushti*.

Ketogenic diet shows neuroprotective effects and studies show its efficacy for a number of neurological disorders, including epilepsy, Alzheimer's disease, Parkinson's disease, sleep disorders, headache, traumatic brain injury, amyotrophic lateral sclerosis, pain, and autism.<sup>20</sup> Thus it is understood that *avapeedaka snehapana* is an advisable method of treatment for neurological disorders.

As we do not find any references regarding the number of days of *snehapana* to be administered, it is practically administered till the attainment of *samyak snigdha lakshana*.

During *snehapana*, the diets and regimens mentioned for *snehavidhi*<sup>21</sup> should be followed. Before initiating the treatment, the physician should assess the *kostha* (bowel) of the patient to fix the dose. Depending on the condition of the patient, *sneha dravya* is selected. The patient should drink lukewarm water frequently, but in less quantity, and take *kanji* (porridge) only when he or she feel hungry. It is advisable to prepare porridge with brown rice, which has adequate amount of protein. Brown rice cooked in the green gram broth can also be consumed. Those who are incompatible to rice, cooked plain oats can be taken. Patient must avoid day sleep, exercises, watching television, using computers, mobile phones, exposure

to an air conditioner, coolers, journey/rides, reading for a long duration, and other purificatory procedures. Treatment has to be continued till the *samyak snigdha lakshana*<sup>22</sup> is observed.

## Conclusion

*Avapeedaka snehapana*, a popular therapy practically adopted in *mutra vegavarodha janya vikara*, is also indicated in *arsha*, *adhonabhogata vata vikara*, and *mutra udavartachikitsa*. Most of the individuals around us have one or other issue related to *apana vayu* due to the suppression of natural urges as a part of their unhealthy life styles. *Avapeedaka snehapana* can be practiced in conditions where *apana vayu vigunatha* is seen considering the *agni bala* of the patient.

Till date, there are no studies conducted on the dose fixation of *avapeedaka snehapana*; hence it is a big challenge to determine an optimum dosage. *Avapeedaka snehapana* is relatively untouched and requires further clinical trials and discussions to understand its wide range of utility.

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## Ethical Approval

As this is a review article, ethical approval is not required.

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