

Effect of Snehapana (Internal Oleation) On Lipids : A Critical Review

ABSTRACT

The Snehana (internal oleation) is a major preparatory procedure to be performed before Śodhana (purification). The entire procedure of Śodhana (purification) depends upon the proper mobilization of humors (Doshas) from the periphery (Śākhā) which is to be achieved with the help of Snehana (Oleation) and Svedana (Sudation therapy). Currently physicians practice purificatory internal oleation (Shodhanartha Abhyantara Snehana) by their methods depending upon individual experience and expertise. If Snehana (internal oleation) is not done properly, it definitely affects the Śodhana Karma (purificatory Therapy) afterwards and also chances of complications such as hyperlipidaemia. 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. There is a fear in the medical fraternity and the patients that oral intake of lipids may lead to an increase in the biochemical parameters especially the lipids. So in order to remove this misconception, here an attempt is made to critically review in the light of classical references and modern research findings.

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Introduction:

Internal administration of lipid substance (Snehapana) is a preparatory step of purificatory therapies (Panchakarma) such as emesis (Vamana) and purgation (Virechana). Lipid is given in specific increasing dose pattern for three to seven days determined by the nature of bowels passed and the digestive power of an individual. Estimated quantity of lipid required for oleation ranges from 600 ml. to 1200 ml.¹ Due to this, some modern physicians and patients undergoing oleation therapy think that it might lead to rise in the lipid levels. There is a fear amongst the medical fraternity and the patients that oral intake of lipids used for oleation therapy (Snehapana) may lead to an increase in the biochemical parameters especially the lipids.

Oral ingestion of cholesterol is reflected as a mild increase in the plasma concentration. However, when cholesterol is ingested, the rising concentration of cholesterol inhibits the most essential enzyme for endogenous synthesis of cholesterol, thus providing an intrinsic feedback control system to prevent an excessive increase. As a result, the plasma concentration is usually not altered more than ± 15 percent by altering the amount of cholesterol in the diet, although individual responses differ markedly. A highly saturated fat diet increases blood cholesterol concentration up to 15 to 25 %. Ingestion of diet containing highly unsaturated fatty acids usually

depresses the blood cholesterol concentration to a slight moderate amount.²

Author of classical text Ashtanga Hridayam, Vagbhata cautions that individuals with fleshy (Mamsala) and fatty constitution (Medura) and those with predominance of Kapha Dosha (Bahu Kapha), erratic digestion (Vishamagni) and those accustomed to intake of lipids (Sneha Satmya), are first posted for therapy producing dryness or absorption of fluids in the body (Rukshana), before administering lipids (Snehana) to prevent complications of internal oleation (Sneha Vyapad) including hypercholesterolaemia.³

Varsha B. et.al. (Jamnagar, 2000)⁴

This study carried out on 38 Subjects (healthy volunteers & patients) of 16-60 yrs of age group with skin diseases and devoid of severe impairment of Jatharagni (Digestive fire).

Group I (fixed dose group) - In this group patients were given the test dose of (plain ghee) Ghrita on 1st day. On the basis of the time required for the digestion of test dose, a fixed dose was

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administered to the patient each day till the appearance of symptoms of adequate oleation (Samyak Snehana Lakshanas).

Group II (fixed increase dose group) - This group received test dose of Ghrita (plain ghee) on the first day, then Ghrita (plain ghee) was given in the increasing dose. The increase was equal to the test dose each day which was continued till the appearance of symptoms of adequate oleation (Samyak Snehana Lakshanas). The dose of ghee

schedule in this group was 30 ml, 60 ml, 90 ml, 120 ml, 150 ml, 180 ml and 210 ml (for a maximum of 7 days duration).

Group III (Non-fixed increase dose group)- This group of patients were also given test dose of Ghrita (plain ghee) on the 1st day. Depending on Jatharagnibala (Digestive capacity) & Koshtha (nature of bowel habit), the Ghrita (plain ghee) was given in increasing dose.

Group I (fixed dose group)

Biochemical Parameters	n	MEAN SCORE		% CHANGE	S.D.	S.E.	t	P
		B.S.	A.S.					
S.Cholesterol	9	215.25	216.3	-0.05	25.69	8.56	-0.12	>0.05
Total lipids	9	726.96	688.61	5.77	52.61	17.53	2.18	>0.05

(B S – BEFORE SNEHAPANA, A S – AFTER SNEHAPANA)

Group II (fixed increase dose group)

Biochemical Parameters	n	MEAN SCORE		% CHANGE	S.D.	S.E.	t	P
		B.S.	A.S.					
S.Cholesterol	14	201.37	195.27	3.02	9.68	2.58	2.35	<0.05
Total lipids	14	728.26	689.28	5.35	9.28	26.53	1.46	>0.05

Group III (Non-fixed increase dose group)

Biochemical Parameters	n	MEAN SCORE		% CHANGE	S.D.	S.E.	t	P
		B.S.	A.S.					
S.Cholesterol	15	200.36	200.04	0.15	8.72	2.25	0.13	>0.05
Total lipids	15	721.95	704.62	2.40	36.80	9.50	1.82	>0.05

R B Nair et. al. (2002)⁵

Ten patients of Hemiplegia, Paraplegia, Rheumatoid arthritis, Sciatica, Lumbago and Motor neuron disease were selected from C.R.I.A.

Hospital, Thrissur; Kerala for internal administration of medicated oil/ghee for 5 to 7 days continuously in increasing order and the level of lipids in blood was measured.

Serum lipid profile of patients 3 hour after *Snehapana* (oleation therapy)

Lipid Parameter	Levels mg/Dl						
	Baseline	1st day	2 nd day	3rd day	4th day	5th day	6th Day
Cholesterol	223.9±16.34	225.7± 12.61	218.6± 15.85	211.7± 14.26	205.9± 11.16	187.9± 1.64	186.8± 12.21
HDL	33.78±5.17	39.10± 4.68	31.70± 4.16	38.2± 4.71	32.3± 3.06	32.0± 3.43	31.63± 3.58
LDL	144.78±15.9 5	138.8± 10.43	148.0± 14.66	137.3± 14.74	138.5± 10.87	121.6± 14.16	126.1± 11.82
VLDL	38.33± 3.69	47.80± 4.48	38.9± 3.69	36.2± 3.09	35.0± 3.09	34.3± 3.73	29.13± 3.50
Triglycerides	191.78±18.2 8	239.4± 22.91	197.5± 18.02	181.4± 15.46	175.4± 15.48	171.8± 18.75	145.2± 17.75
Phospholipids	174.2±16.57	210.3± 9.82	225.1± 13.97	220.4± 13.96	217.1± 10.51	198.9± 74.2	179.8± 11.76
Total lipids	608.33±43.8 2	722.8± 53.1	670.1± 41.47	652.3± 37.11	591.8± 35.03	525.4± 16.4	513.2± 28.94

Mean value from 10 patients ±SEM and all values were statistically non-significant

SHILPA G. et. al. (Hassan, 2005)⁶

30 patients were selected Inclusion criteria being patients having impaired fasting glucose (IFG) or impaired glucose tolerance (IGT) having Body Mass Index (B.M.I) > 30, Women with history of gestational diabetes, first degree relative of the

patient with type II Diabetes mellitus and with prodromal symptoms of Diabetes mellitus. Patients with established type 1 or type 2 D.M and those on steroids were excluded from the study.

The selected patients were divided into following 3 groups for the treatment.

Effect of Purgation after Snehana (*Snehana Purvaka Virechana*) on Total Cholesterol

GROUP 'S'	MEAN (MG/DL)	% OF RELIEF	S.D (+)	S.E(+)	T	P
B.T	216.95					
A.T	200.84	7.42	3.01	0.95	16.94	<0.01
1 st follow up	199.4	8.10	2.45	0.77	22.64	<0.001
2 nd follow up	197.9	8.79	1.95	0.61	30.92	<0.001
3 rd follow up	195.5	9.90	1.57	0.49	43.10	<0.001

Effect on High Density Lipoproteins (HDL):

In 'S' group the initial mean (mg/dl) of High Density Lipoproteins was 39.2, which increased to 41.9 after treatment which was

significant showing 6.8% improvement (P<0.001). The improvement continued and became 9.31% at 3rd follow up.

Effect of Purgation after Snehana (*Snehana Purvaka Virechana*) on High Density Lipoproteins

GROUP 'S'	MEAN (MG/DL)	% OF RELIEF	S.D (+)	S.E(+)	T	P
B.T	39.29					
A.T	41.98	6.84	1.40	0.44	6.06	<0.001
1 st follow up	42.25	7.53	1.36	0.43	6.85	<0.001
2 nd follow up	42.53	8.70	1.73	0.54	6.23	<0.001
3 rd follow up	42.77	9.31	1.78	0.56	6.40	<0.001

Effect on Low Density Lipoproteins:

In 'S' group the initial mean (mg/dl) of Low Density Lipoproteins was 143.9 which reduced to 133 after treatment which was significant showing

7.6% improvement (P<0.001). Improvement continued and became 10.86% at 3rd follow up.

Effect of Purgation after Snehana (*Snehana Purvaka Virechana*) on Low Density Lipoproteins

GROUP 'S'	MEAN (MG/DL)	% OF RELIEF	S.D(+)	S.E(+)	t	P
B.T	143.94					
A.T	132.95	7.63	3.31	1.04	10.49	<0.001
1 st follow up	131	8.98	3.27	1.03	12.50	<0.001
2 nd follow up	129.2	10.24	3.13	0.99	14.86	<0.001
3 rd follow up	128.3	10.86	2.91	0.92	16.90	<0.001

Effect on Triglyceride Level:

In 'S' group the initial mean (mg/dl) of Triglyceride Level was 178.6 which reduced to 164.1 after treatment which was significant

showing 8.5% improvement (P<0.001). Improvement continued and became 10.16% at 3rd follow up.

Effect of Purgation after Snehana (*Snehana Purvaka Virechana*) on Triglyceride Level

GROUP 'S'	MEAN (MG/DL)	% OF RELIEF	S.D(+)	S.E(+)	t	P
B.T	178.68					
A.T	164.13	8.59	5.06	1.60	9.57	<0.001
1 st follow up	162.6	8.99	6.37	2.01	7.97	<0.001
2 nd follow up	161.5	9.60	6.76	2.14	8.02	<0.001
3 rd follow up	160.5	10.16	7.50	2.37	7.65	<0.001

Vasant Patil et.al. (Jamnagar, 2006)⁷

Inclusion Criteria: 29 Patients having diseases of external route of diseases (Bahyarogamarga) especially eczema (Vicharchika), leucoderma (Shvitra,) Acne (Mukhadooshika), Psoriasis (Ekakushtha) and healthy volunteers belonging to age group of 16-60yrs were selected for the study.

Exclusion Criteria: Patients having major illness and severe impairment of Jatharagni (Digestive fire) were excluded from the study.

Grouping: The selected Patients and healthy volunteers were randomly divided and studied under two groups.

Group A (Fixed dose group): Subjects in the group received test dose of Pure ghee on the first day & then dose was increased equal to the test dose daily till the appearance of symptoms of adequate oleation (Samyak Snehana Lakshanas) or maximum 7 days, whichever was earlier.

Group B (Non-Fixed dose group): This group of subjects received test dose on the first day & then dose was increased on the basis of analysis of Jatharagni (Digestive fire) by using parameter the Agnibala (digestive power) index and response of Koshtha (nature of bowel habit) to the dose. Pure ghee was given till the appearance of symptoms of

adequate oleation (Samyak Snehana Lakshanas) or maximum 7 days, whichever was earlier. So the

increase was not fixed and the dose schedule in this group varied in each individual patient.

Effect of oral administration of lipid (*Snehapana*) on Biochemical parameters in group A

Biochemical parameters	n	Mean		%	SD	SE	t	P
		BS	AS					
Cholesterol	13	193.5	202.7	24.8	20.43	5.67	-1.629	>0.05
Triglycerides	12	145.7	134.8	27.47	109.3	31.57	0.345	>0.05
HDL	13	39.98	41.82	24.63	11.29	3.13	-0.59	>0.05
LDL	12	122.9	135.0	29.87	52.66	15.2	-0.799	>0.05
VLDL	12	29.10	28.62	21.65	23.55	6.79	0.071	>0.05

(BS – BEFORE *SNEHAPANA*, AS – AFTER *SNEHAPANA*)

Effect of oral administration of lipids (*Snehapana*) on Biochemical parameters in group B

Biochemical parameters	n	Mean		%	SD	SE	t	P
		BS	AS					
Cholesterol	13	170.62	195.0	24.95	40.63	11.27	-2.164	>0.05
Triglycerides	13	114.62	143.07	24.82	41.64	11.55	-2.47	<0.05
HDL	13	35.55	35.84	20.82	16.26	4.51	-0.064	>0.05
LDL	13	109.12	127.78	27.10	41.59	11.53	-1.62	>0.05
VLDL	13	20.95	26.70	27.44	8.98	2.49	-2.31	<0.05

Abdullah Y. A. Rawashdeh report in the paper entitled “Influences of Olive Oil and Ghee (samen Balady) on Serum” that the effects of olive oil (OO) and ghee types (samen Balady) on the serum lipid profile was studied in healthy volunteers (11 males, aged 36-44 year; 13 females aged 27-35 year). The 24 volunteers ate their habitual diet with OO or ghee of cow milk fat (CMF), ghee of goat milk fat (GMF) or ghee of sheep milk fat (SMF) for 4 week with 4 week interval between the four

diets. Compared with initial values, OO diet significantly ($P < 0.05$) reduced concentrations of serum total cholesterol (TC, -3.42%) and low density lipoprotein cholesterol (LDL-c, -4.31%). OO caused slight reduction in concentration of high density lipoprotein cholesterol (HDL-c, -2.86%), and ratios of TC/HDL-c and LDL-c/HDL-c. Whereas ghee types significantly ($P < 0.05$) increased these parameters and the SMF resulted in the highest rise of TC (+11.93%) and

LDL-c (+16.16%). The highest rise in concentration of HDL-c (+8.81%) was shown with GMF. Ghee types slightly increased the ratios of TC/HDL-c and LDL-c/HDL-c compared with the initial values. SMF resulted in the highest rise of TC/HDL-c (+0.26) and LDL-c/HDL-c (+0.31). Serum triglycerides level increased (+3.38 %) after OO diet, whereas reduced (about -2.15%) after periods of ghee types. In general, the responses in serum lipids were greater in males than in females in all the four diets. Finally, ghee types showed raising effects of blood cholesterol. These effects may be due to their low p:s and m+p/s ratios. The difference between effects of different types of ghee on blood cholesterol level is mainly attributed to these differences in their fatty acid compositions. However, the cholesterol content of ghee types had no effect on these differences. OO, which is high oleic acid, may be a good alternative of dietary fat for reducing blood cholesterol level.⁸

Jyothisna Karanth et.al. conclude that long-term intake of HF (Hydrogenated Fat) diet impairs the plasma and tissue lipid profile, while MUFA-rich diet or carnitine supplementation and/or exercise could ameliorate the deleterious effects of HF. Regular exercise of moderate intensity alone could definitely overcome the deleterious effects of HF in the diet.⁹

Discussion:

Lipid (Sneha) is hydrophilic, hence after appropriate oral administration of lipids (Snehapana) the cells of body become saturated with fats. Then the fat material then is 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 liquified 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 (Anu Pravana 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).¹⁰

Clinical trial by the investigator Varsha B. et.al. concluded that there is no significant change occurred in the lipid profile post oral ingestion of lipids in volunteers?

The study done by R B Nair et.al. concluded that even after 3 hour of consumption of lipids (oil/ghee), there are no increase in the lipid profile, however there was a decrease in lipid levels after 6 days of post oral ingestion of lipids (Snehapana).

Clinical trial reported by Shilpa G. et.al, revealed that, significant reduction occurred in cholesterol, triglycerides & LDL in patients with impaired glucose tolerance.

Clinical trial investigated by Vasant Patil et.al, concluded that, in group B, triglycerides & VLDL levels were increased significantly within normal range after of oral ingestion of lipids (Snehapana) but after purgation (Virechana), triglycerides & VLDL levels came to normal level as a result of appropriate purificatory therapies (Shodhana Karma). Thus it provides ample evidence that after appropriate oral ingestion of lipids (Samyak Snehapana), it is essential to do proper purification (Samyak Shodhana) otherwise lipid levels might rise abnormally. Patients of obesity & hyperlipidaemia ought to be subjected to dryness producing therapy (Rukshana Karma) before oral ingestion of lipids (Snehapana) to prevent the abnormal rise in the level of lipids in the body. R B Nair et al revealed in their study that even after 3 hour of consumption of oil/ghee, there was no rise in the lipid profile, instead there was a decrease in lipid levels after 6 days of oral ingestion of lipids (Snehapana).

Conclusion:

A review of studies done till date provide evidence that oral ingestion of lipids (Snehapana) do not cause rise in the level of lipids rather it facilitates in bringing the increased level lipids to normal; even if the lipid levels increase during oral ingestion of lipids (Snehapana) it is transient and comes to normal after purification (Samyak Shodhana). The fear associated with the oral ingestion of lipids might be dispelled thus Snehana Therapy (oleation therapy) might be better acceptable. The guidelines mentioned in the classics should be taken into consideration while posting the patients for oral ingestion of lipids (Snehana) otherwise complications like hyperlipidaemia may occur. Judicious use of oral lipids aimed at purification can be done even in cardiac diseases, non insulin dependent Diabetes mellitus where the lipids levels are usually abnormal. A prior medication aimed to bring about drying secretions of the body (Rukshana Karma) is advised in these specific conditions. A careful consideration of humors (Dosha), Tissue (Dooshya), Channels (Srotas), Digestive fire (Agni), Metabolic Toxin (Ama) etc. prior to the Snehana procedure will pave the way to make the therapy more acceptable in the arena of cholesterol sensitivity.

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