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"A CLINICAL STUDY OF PHYSIOLOGICAL AND BIOCHEMICAL CHANGES BEFORE AND AFTER SHODHANARTH (GOGHRUTA) SNEHAPANA."

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ABSTRACT

The snehapana is purvakarma of Shodhana (purification). The entire procedure of Shodhana depends on proper mobilization of dosha from Shakha to Koshtha which is achieved with snehapana and external oleation and sudation i.e. snehana svedana. Now in present era physician practice purifactory internal oleation (Snehapana) by their methods. If snehana is not done properly it will definitely affects the shodhankarma and it also leads to chance of complications such as hyperlipidemia and liver dysfunctions. Hence it is obligatory to start and increase dose of snehapana according to agni and koshtha of subjects. There is misconception about snehapana that it may lead to increase in liver activity and cause jaundice and lipid profile. 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.

KEYWORDS: Snehapana, Goghrut, Biochemical changes, Physiological changes.

INTRODUCTION

Ayurveda is the one and only medical system, which advocates the way of perfect living in harmony with the nature. According to Ayurveda good health is the basement for the fulfilment of the "Purusharthas" i.e. Dharma, Artha, Kama and Moksha.[1] These ultimate goals of life can be achieved only by healthy individuals with the healthy mind and body.

In Ayurveda Panchakarma is a specific unique natural holistic health giving series of therapeutic treatments that cleanse the body deep tissue toxins open subtle channels bring life by enhancing energy there by increasing vitality inner peace confidence and well-being. As Ayurveda is based on tridoshas and panchamahabhutas Panchakarma highlights itself by normalising these doshas after being eliminated from their mulsthanas. Hence proves whole and sole of treatments in Ayurveda by rejuvenating tissue and by enhancing the life span.

Ayurvedic approaches towards the treatment consists of two major categories.[2]

1) Shodhan Chikitsa (Bio-purification of the body)
2) Shaman Chikitsa (Pallative treatment)

Shodhan therapy consists of a number of physic-physiologic measures advocates in the treatment of diseases.

The Panchakarma therapy is a one of the part of Shodhan Chikitsa. It is divided in to three major parts.[3]

1) Poorvakarma (preparatory methods like oleation and fomentation)

2) Pradhankarma(main shodhan measures like Vaman, Virechan, Basti, Nasya, Raktamokshan)

3) Paschatkarma (post therapy regimens)

If this Panchakarma therapy not used in proper dose under proper indications and with proper environment it may cause hazardous effect such as haemorrhage, prolapse of organ, shock even death too. To minimise these effect Acharyas have advocated the preparatory measures viz. Snehana & Swedana.

This the era of science and technology in which everything is to be assessed very perfectly and precisely. Though subjectivity is beauty and strength of Ayurveda but objectivity has become mandatory for effective application and global acceptance of the ayurvedic concepts. So this particular work is a sincere attempt for the evolvement and establishment of objective parameters for the concept of Shodhanarth Abhyanter Snehapana.

Shodhanarth Abhyanter snehapana has been described in many ayurvedic classics like bruhhat trayi and laghu trayi. Acharya Charak mentioned the mechanism of snehapana w.r.to agni with beautiful examples that- just as cloth absorbs the water upto its capacity then drains

off.[4] Similarly the sneha gets spread jeeryamaan according to the strength of agni and drains off when exceeds the limit of agni.

Now a days physician facing difficulty for doing Panchakarma because of many life style disorders like hyperlipidemia ,liver, disorders,renal problem, obesity due to lots of causes and also many doctors consider that snehapana is harmful to the body and it may interfere with the biochemical activity of tissues. So it is need for physician who consider above such a type of concept to prevent atiyoga or ayoga and to get samyak snehan lakshan in a systemic and sophisticated manner and to see "IS THERE ANY CHANGE OCCURS IN CELLULAR LEVEL??".

Also very few works has been undertaken on this subjects until now. So looking at the great importance of these fundamental, essential and unclarified regimens of shodhan chikitsa the present work was palnned.

MATERIAL AND METHODS

While doing research work on "A clinical study of physiological and biochemical changes Before and After Shodhanarth Goghrut Snehpana" following thing were taken into consideration.

Study Design

Type of Study:- Open, Uncontrolled, Prospective clinical study

No of patient:- 30

Duration of Study- Upto to Samyak snigdha lakshanas

Follow up- physiological and samyak snigdha lakshana daily

For biochemical changes:- Before and after Snehapana.

Place of study:- OPD and IPD of the institude R. A. Podar college worli Mumbai 18.

Selection Criteria:-

Total 30 patients were examined by randomized open uncontrolled prospective trial. Irrespective of sex, religion, education, occupation, economic status.

Inclusion Criteria

1) Patient whom snehanarha
2) Sex-Male & female
3) Age group 16 to 60 years

4) Patient ready to give written informed consent
5) Healthy individual who needs shodhan.

Exclusion Criteria

1) Age group <16 yrs & >60yrs
2) Patients of auto immune disorder
3) Patients having neoplastic disorder.
4) Patients having major illness for longer period & systemic pathogenesis e g. Cardiac disease, Renal disease, liver disease.
5) Pregnant females & lactating mothers.
6) Patients whom snehananarha & shodhananarh.
7) Patients with infectious disease patient having IBS, gastric ulcer ulcerative colitis, pulmonary & intestinal TB/AIDS/HBsAg.

Treatment Plan

Mode of Administration

In the treatment of Snehapana, after all necessary blood urine stool investigation Snehapana was started purvakarma, pradhankarma and paschatkarnma in these three stages[3].\

METHODOLOGY

This Snehapana was done as follows :-

a) Poorvakarma:- Deepan pachan according to subjects.
b) Pradhankarma:- Early morning snehapana was done in
Between (6.30 -7.30 am)[5]
Dose was according to Agni and Koshtha.
c) Pashchatkarma:-

Sneha pachankal and symptoms after giving Snehapana found in patient assessed daily. Subjects was advised to take Koshnjalpana whenever needed and avoid Atichankramana, Divaswap, Jagarana etc.also advised to followed Granthokta Ahara and Vihara during Snehapana.[6]

Method of Preparation

The Sneha was heated to make it lukewarm on a water bath.

Method of Administration

1) Material:- Goghrut
2) Time:- Early in the morning (6.30- 7.30 am)[5]
3) Dose:- Requistrate dose as per koshta and Agni.
4) Duration of Procedure:- Upto to Samyak snigdha Lakshanas
5) Duration of therapy:- Upto to Samyak Snigdha Lakshana
6) No of patients:- 30
7) Route of Administration:- Oral
8) Follow up:- physiological and samyak snigdha lakshana daily.
9) For biochemical changes:- Before and after Snehapana.

Prior to Snehapana the detailed examination of the subjects was done according to the dosha, desh, kal, bala, satmya, satva, prakruti etc.

All necessary equipment was arranged. Lukewarm Goghrut were taken.
Total 30 patients received same treatment throughout.

Procedure of Abhyanter Snehapana

In the morning around in between 6.30 to 7.30 am (After proper digestion of previous night meal) the subject were administered the amount of Ghruta. Ushna jala was given as a Anupana following the Ghruta intake.[5] After administering Ghruta instruction were given to the subjects not to take any type of food until he/she feels hunger and allowed to drink warm water. During those days subject were given Yavagu[8], from IPD of the institute. Time required to Jeerna Lakshana was assessed. The Samyak Snigdha lakshana were observed daily and were scored according to scoring pattern. After appearing samyak snigdh lakshnas snehapana was stopped.

Criteria for assessment Of Samyak Snigdha Lakshana i.e. Subjective Assessment[7]

A)Normalcy of Vata (Vatanuloman)	1)Upward movement of vata with excessing belching & flatulence 2)Upward movement of vata with occasional belching & flatulence 3)Mild flatulence & heaviness of abdomen 4)Vatanuloman but absence of lightness of abdomen. 5)Vatanuloman & lightness of abdomen
B)Consistency of stool (Asamhatvarchas)	1)Too dry and solified 2)Solified 3)Normal(semisolid)

	4)Loose 5)Watery
C)Oilness of stool (Snigdhavarchas)	1)Dry stool 2)Stool with less quantity of fat. 3)Stool with moderate quantity of fat. 4)Stool with large quantity of fat 5)Only fat excretion.
D)Tvak snigdhata	1)Excessively dry & rough skin 2)Roughness of skin 3)Dryness of skin 4)Normal skin 5)Oily skin
E)Lightness of body (Gatralaghav)	1)Absent in all 24 hrs 2)Present after 18-24 3) Present after 12-17 4) Present after 6-11 5) Present after 3-5

Agnidipti:- (By Agni bala index formula)

Agnibal Index - Test dose x time taken for digestion / Given dose

Objective Criteria for assessment

Biochemical Parameters:- 1) BSL (Fasting/ PP)

2) LFT (S.G.O.T./S.G.P.T/Alkaline

Phosphate/Albumin/ Total Protein/ Total\Bilirubin)

3) RFT (Blood Urea/ Creatinine/ Blood Urea Nitrates)

4) Lipid Profile (Cholesterol/ LDL/VLDL/Triglyceride/HDL)

Physiological Parameters:- 1) Tempreature 2)Blood Pressure 3)Respiratory Rate

4)Pulse 5) Weight

OBSERVATION AND RESULT

Statistical evaluation

Statistical Evaluation of Procedure done by Wilcoxon matched – pairs signed and paired t test.

Statistical analysis - by Wilcoxon matched pairs signed rank test on subjective parameters.

Table No- 1.

No	Symptom		Mean	SD	SE	W	N	P value
1.	Vatanulomana	FD	1.700	0.7497	0.1369	- 435.0	29	<0.0001 Extremely Significant
		LD	4.167	0.9499	0.1734			
		Diff	-2.467	0.8996	0.1642			
2.	Consistancy of Stool	FD	2.067	0.7397	0.1350	- 378.0	27	<0.0001 Extremely Significant
		LD	3.800	0.7144	0.1304			
		Diff	-1.733	0.9072	0.1656			
3.	Oiliness of Stool	FD	1.300	0.4661	0.0851	- 465.0	30	<0.0001 Extremely Significant
		LD	3.900	0.6618	0.1208			
		Diff	-2.600	0.7240	0.1322			
4.	Tvak Snigdhta	FD	2.233	1.223	0.2233	- 351.0	26	<0.0001 Extremely Significant
		LD	4.067	1.112	0.2030			
		Diff	-1.833	1.053	0.1923			
5.	Lightness of body	FD	2.033	0.7184	0.1312	- 465.0	30	< 0.0001 Extremely Significant
		LD	4.333	0.8442	0.1541			
		Diff	-2.300	0.7022	0.1282			

Table No 2: Agnidipti is calculated by Agni bala Index formula. Here we were applied paired 't' test for statistic.

No	Parameter	N	Mean ±SD		Meanof Diff± SD	SEd	T	'P' Value
			FD	LD				
1.	Agnidipti	30	5.092± 1.998	0.8923± 0.2304	4.199± 1.982	0.3619	11.604	<0.0001 Extremely Significant

Table No 3: Statistical analysis of biochemical parameters by paired t test.

No	Biochemical Parameters	Mean±SD		Mean of diff ±SD	SEd	T	P Value
		BS	AS				
1	Fasting	102.80± 10.880	97.167± 13.004	5.633± 10.270	1.875	3.004	0.0054 Very Significant
2	PP	110.87± 22.993	127.20± 25.266	-16.333± 13.842	2.527	6.463	‹ 0.0001 Extremely Significant
3	S.G.O.T	23.733± 8.710	33.400± 9.031	-9.667± 7.121	1.30	7.435	‹ 0.0001 Extremely Significant
4	S.G.P.T	20.100± 13.002	21.633± 14.351	-1.533± 8.270	1.510	1.016	0.3183 Not Significant
5	Alkaline phosphate	63.167± 15.182	74.800± 20.799	-11.633± 14.431	2.635	4.416	0.0001 Extremely Significant
6	Total.Protein.	7.640± 0.7618	7.457± 0.7440	7.457± 0.7440	0.07995	2.293	0.0293 Consider Significant
7	Albumin	4.417±	4.290±	0.1267±	0.04672	2.711	0.0111 Consider

		0.3983	0.3986	0.2559			Significant
8	T.Bilirubin	0.7500± 0.1137	0.7300± 0.1860	0.02000± 0.1789	0.03266	0.6124	0.5451 Not Significant
9	Urea	23.667± 7.858	18.800± 5.524	4.867± 5.661	1.034	4.708	‹0.0001 Extremely Significant
10	BUN	11.533± 3.730	8.600± 2.660	2.933± 2.852	0.5207	5.634	‹ 0.0001 Extremely Significant
11	Creatinine	0.9600 ±0.1993	0.8867± 0.2047	0.07333± 0.1596	0.02914	2.517	0.0176 Significant
12	Cholesterol	170.80± 31.453	185.70± 32.029	-14.900± 12.184	2.224	6.698	‹ 0.0001 Extremely Significant
13	HDL	51.567± 10.105	47.667± 9.718	3.900± 2.383	0.4351	8.963	‹ 0.0001 Extremely Significant
14	LDL	114.73± 31.796	110.63± 29.282	4.100± 11.198	2.045	2.005	0.0543 Not quite Significant
15	VLDL	23.633± 10.769	19.233± 8.815	4.400± 4.598	0.8395	5.241	‹ 0.0001 Extremely Significant
16	Triglyceride	109.90± 38.010	94.700± 34.088	15.200± 18.674	3.409	4.458	0.0001 Extremely Significant

Table No: 4 Statistical analysis of physiological parameteres by paired t test.

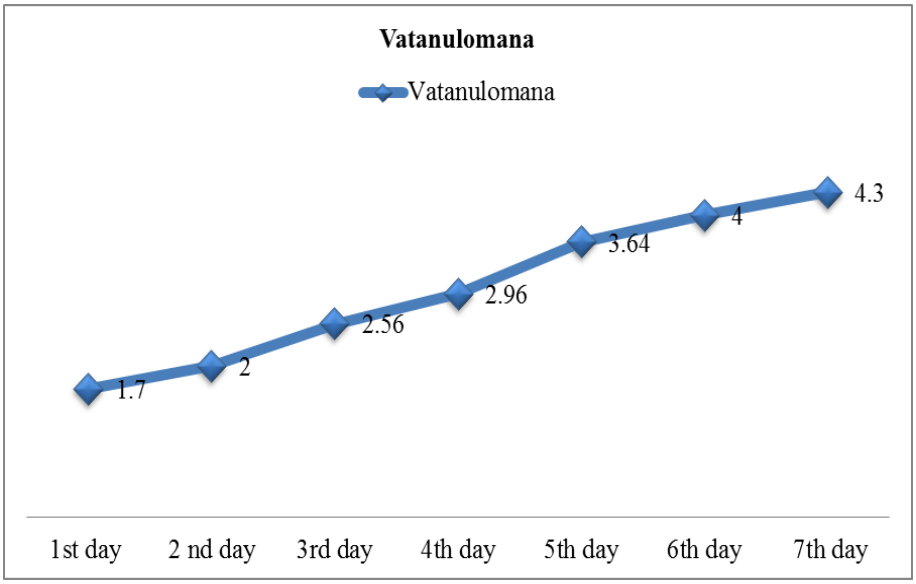
No.	Physiological Parameters	N	Mean±SD		Mean Diff± SD	SE	T	P
			BS	AS				
1.	Tempreature	30	98.207± 0.1999	98.207± 0.1507	2.313E-19 ±0.2505	0.04574	5.057E-18	>0.9999 Not Significant
2.	Blood Pressure							
	Systolic		125.67± 8.976	125.33± 9.774	0.3333± 3.898	0.7117	0.4684	0.6430
	Diastolic		82.667± 6.504	81.867± 6.725	0.8000± 4.221	0.7707	1.038	0.3079
3.	Pulse		80.300± 6.086	79.733± 7.460	0.5667± 3.711	0.6775	0.8364	0.4098
4.	Respiratory Rate		19.133± 1.717	19.000± 1.640	0.1333± 2.345	0.4281	0.3114	0.7577
5.	Weight		66.523± 13.876	63.843± 13.900	2.680± 1.364	0.2490	10.764	<0.0001 Extremely Significant

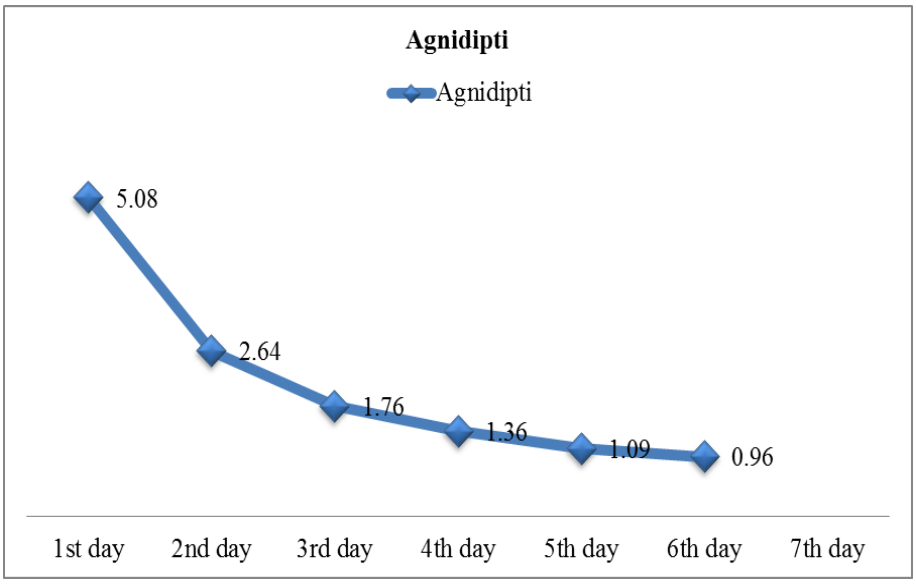
Table No 5: Pattern of Samyak Sneha Lakshana by mean value.

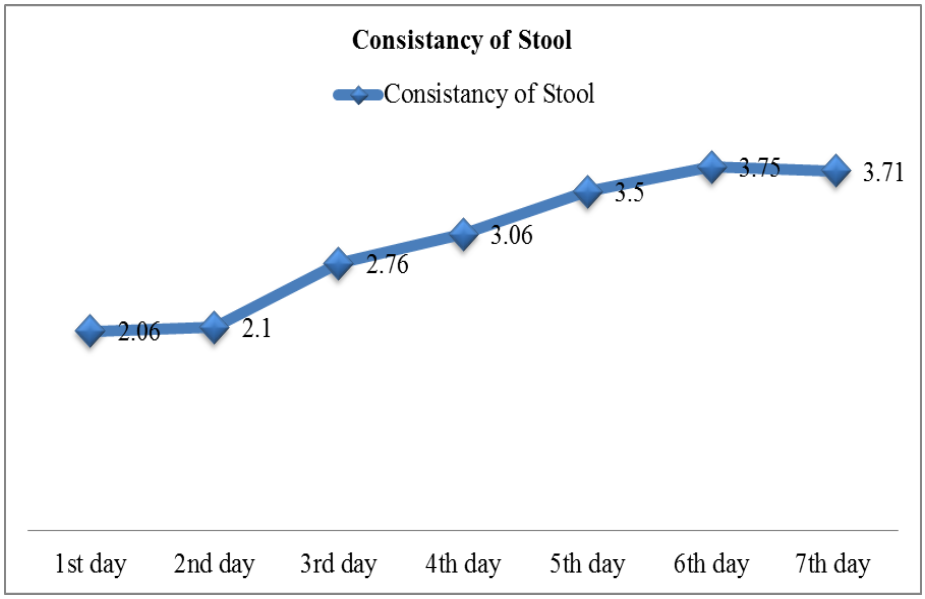
Initiation of Symptoms	1st day	2nd day	3rd day	4th day	5th day	6th day	7th day
Vatanuloman	1.7	2	2.56	2.96	3.64	4	4.3
Agnidipti	5.08	2.64	1.76	1.36	1.09	0.96	0.86
Consistancy of Stool	2.06	2.1	2.76	3.06	3.5	3.75	3.76
Oiliness of Stool	1.3	1.66	2.43	2.86	3.39	3.58	3.61
Tvak Snigdhata	2.16	2.36	2.93	3.1	3.67	4.04	4.09
Lightness of Body	2.03	2.2	2.96	3.36	3.82	4.20	4.28

(Here scoring pattern was framed in such way that, greater the score more the Snehana but for Agnidipti it was reverse condition.)

Following graph showing the pattern of various Samyak Snehana Lakshana by mean value






Consistancy of Stool
Consistancy of Stool
2.06
2.1
2.76
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3.5
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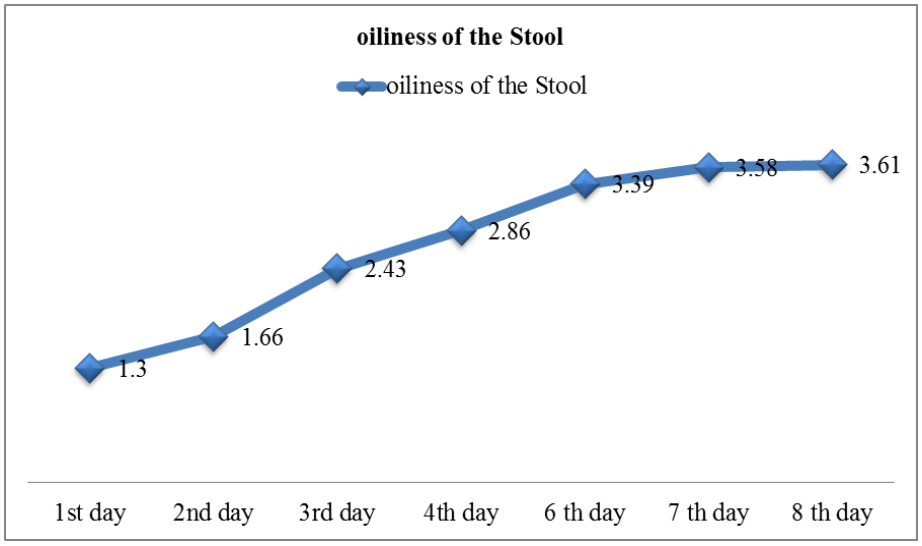
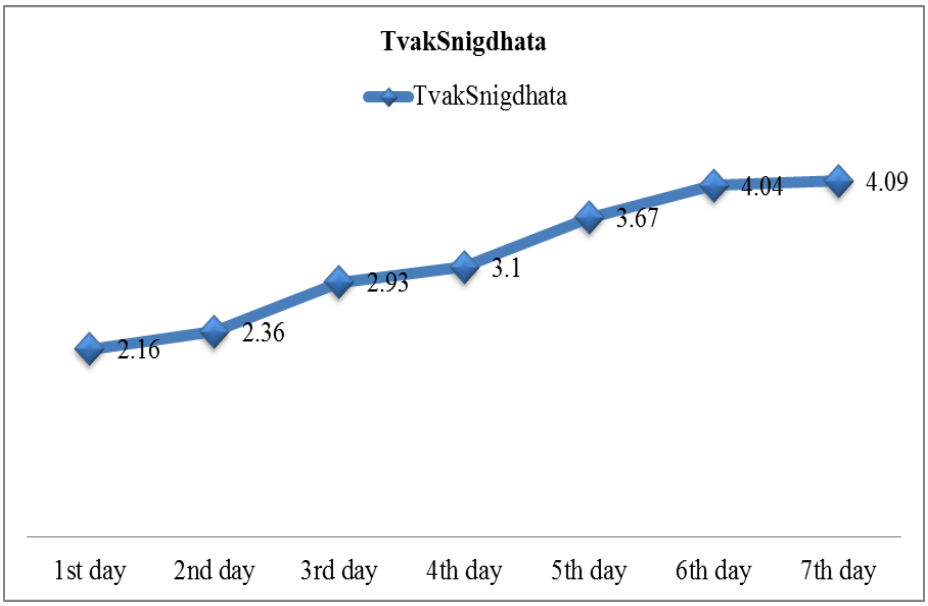
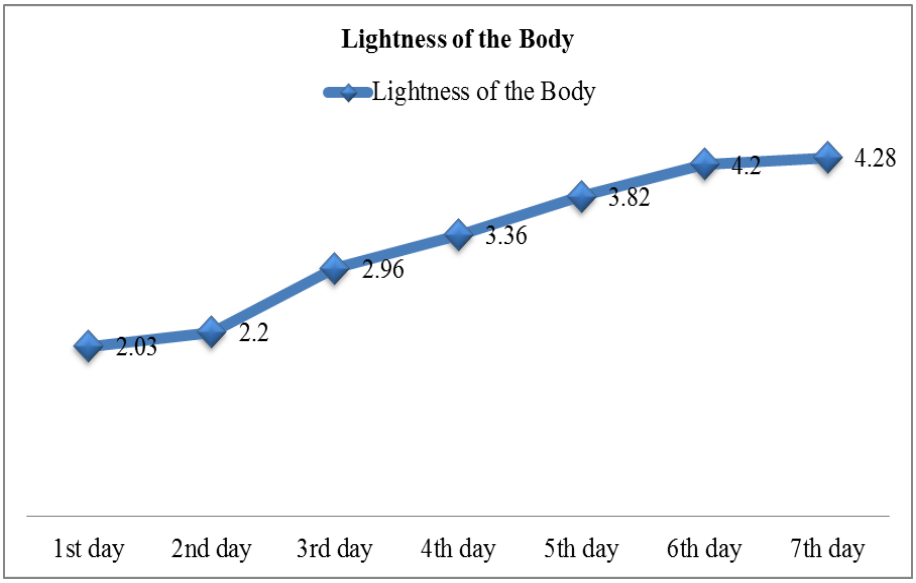
3.71
1st day
2nd day
3rd day
4th day
5th day
6th day
7th day


oiliness of the Stool
oiliness of the Stool
1.3
1.66
2.43
2.86
3.39
3.58
3.61
1st day
2nd day
3rd day
4th day
6 th day
7 th day
8 th day


TvakSnigdhata
TvakSnigdhata
2.16
2.36
2.93
3.1
3.67
4.04
4.09
1st day
2nd day
3rd day
4th day
5th day
6th day
7th day



Snigdhata Grade

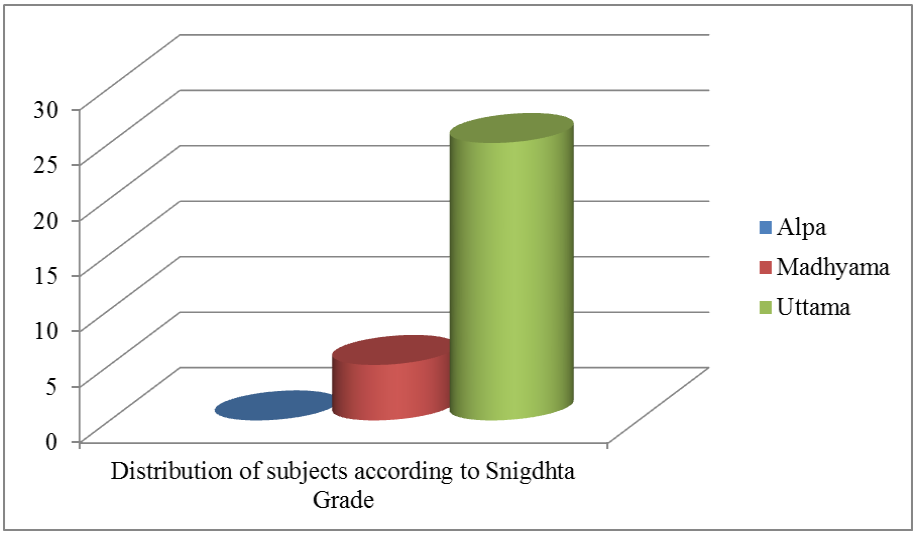
For assessing the Snigdhata Grade on the basis of Samyak Snigdha Lakshana an equation was developed.

Total score of Samyak snigdha Lakshana is 25. It was divided into three grade i.e. uttam, madhyam and alpa.

Distribution of Subjects according to Snigdhata Grade.

Snigdhta Grade	No of Subjects	Percentage
Alpa	0	0
Madhyam	5	16.67
Uttama	25	83.33

Graph :- Distribution of Subjects according to Snigdhata Grade



DISCUSSION

Vatanulomana

This symptom is the result of vata movements in Koshta Anuloman gati. By the dravya which can mitigate vitiated vata it is expected to promote the normal gati. The snehadravya having the Snigdha property very firstly attacks on the exactly opposite guna of Vata i.e. Rukshata.[9] Due to clearance of way and channels vata can move in its own passage without any disturbance. Due to Rukshta obstruction to the normal course of Vata by hard fecal matter occurs and Vata become Pratiloman. By snehan therapy fecal matter becomes Snigdha and can be easily evacuated leading to proper expulsion of vata. This is very first samyak snigdha lakshana appears in sequence after snehapana.

Oiliness and Consistancy of Stool

Due to snigdha Guna of Sneha stool becomes snigdha and by Drava guna and Sara guna stool gets loosened.[10] Oiliness and Consistancy of stool indicates Koshta Snigdhata Lakshana. By administration of sneha in large quantity the large intestine fails to absorb it completely hence the excreation of Sneha through anal route is observed.

Oiliness of stool denotes that Sneha has reached upto Majja Dhatu as told in the classics, "Majja Sneho Akshi Vit tvacham."[11]

3) Tvak Snigdhata and Lightness of Body

Sneha dravayas constitude Snigdha, Mrudu and Sheeta gunas which enhances the same quantities in the body.[10] According to samanya Sidhanta produce Tvak Snigdhata. These lakshana denotes that Sneha has reached upto Mansa Dhatu to Majja Dhatu

4) Gatralaghavata

After vatanulomana or the proper functioning of tridosha, their remains no heaviness in the body due to proper digesion of Sneha.

5) Agnidipti

As we know that Vata is the controlling force of all the physiological activity of the body. When it is vitiated most of the physiological activity of the body hampers. Due to normalancy of Vata i.e. Vatanulomana of Apana Vayu, Samana Vayu and Pachak pitta remains normal at their own sites and Agnidipti occurs.

CONCLUSION

*For better assessment of Agnidipti the use of Agni Bala Index (ABI) formula should be utilized.

* The formulated criteria for assessment which is taken for study may be incorporated for assessing the Snigdhata grade.

* Mostly the onset of various Samyak Snigdha Lakshana occurs in sequential manner which is helpful in predicting the duration of Snehapana and also for deciding the Koshta snigdhata and Shakha Snigdhata

* After Snehapana there is no rise in harmful lipid factor i.e. VLDL. LDL and Triglyceride it is showing that the Shodhanrth Snehapana is safer if it is done properly.

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