



**EFFECT OF MOORCHITA TILA TAILA PRAYOGA IN STHOULYA - AN
INTERVENTIONAL CLINICAL STUDY**

Rao Veena G.¹ and H. S. Vatsala^{2*}

¹Professor, Department of Panchakarma, JSS Ayurveda medical college, Mysore, India 570028.

²PG scholar, Department of Panchakarma, JSS Ayurveda medical college, Mysore, India 570028.

***Corresponding Author: Dr. H. S. Vatsala**

Pg scholar, Department of Panchakarma, JSS Ayurveda medical college, Mysore, India 570028.

Article Received on 11/12/2017

Article Revised on 01/01/2018

Article Accepted on 22/01/2018

ABSTRACT

Sthoulya can be defined as Excessive accumulation of *meda* and *mamsa dhatu* in *sphik*, *udara* and *stana* which makes it pendulous, associated with lack of proper nourishment to *uttarottara dhatus* and decreased enthusiasm.^[1] It can be correlated with Obesity. Obesity or overweight is defined as Abnormal or excessive accumulation of fat that impair health^[2] with increased rate of mortality and morbidity.^[3] Obesity is the major health issue faced by many developing and developed countries. India stands among these as one. The first line of treatment would be "*sroto shodhana*"^[4] which is must in patients of obesity as '*samprapti vighatana chikitsa*' and this can be achieved through oral administration of *Moorchita tila taila* considering its '*sroto shodaka*, *sthoulya hara*, *medo hara*'^[5] properties. This is an Open label single group interventional clinical study on 15 patients of *sthoulya*. The objective criteria was assessed before and after treatment. Based on grading, data obtained were analysed for statistical significance using 'paired -t' test. The results were statistically significant with p value <0.001. The overall result of the study were encouraging with 33.33% (5) of patients showing major improvement and 66.66% (10) of patients showing moderate improvement. Thus '*Tila taila*' can be effectively used for *sroto shodhana* in patients of *sthoulya* to reduce weight.

KEYWORDS: *Sthoulya*, *Tila taila*, *srotoshodhana*, *medohara*, *weight loss*, *obesity*.

INTRODUCTION

Rapid urbanisation and stress, westernization in food and sedentary life style has made Indians to suffer from obesity. Obesity is more common in both developing and developed countries worldwide. Prestige of social drinking in society, improper food habits etc are also attracting and pushing people into scales of overweight and obese category.

Obesity is a complex multifactorial chronic disease developing from interactive influences of numerous factors like social, behavioural, psychological, cellular, molecular or genetic factors. It is widely regarded as pandemic with potentially disastrous consequences for human health.

Its prevalence has increased three fold between 1975 and 2016 and continues to rise. According to WHO estimation in 2016, more than 1.9 billion adults are overweight, of these over 650 (13%) million were obese (11% men, 15% women).^[6] 12.6% women and 9.3% men in India are obese.^[7] Prevalence of obesity is more in women when compared to men.^[8]

Obesity is one among the metabolic disorder^[9] which has

high mortality and morbidity. It has been clearly explained in *ayurveda* as '*Vikaran darunaan krutva nashayantyashu jeevitam*'.^[10]

Co-existence of cluster of conditions such as central obesity, hypertension, dyslipidaemia, increased blood glucose levels which predispose to cardio vascular disease is called as 'Metabolic syndrome'. Hence obesity is a powerful amplifier for metabolic syndrome.

Intra-abdominal and abdominal subcutaneous fat have significance than subcutaneous fat present in buttocks and lower extremities.^[8] Fat mass is distributed differently in men and women. The abdominal or android or male pattern is characterised by fat distributed predominantly in the upper body above waist, where as gynaecoid or female pattern shows fat predominantly in the lower abdomen, buttocks, hips and thighs.

Obesity is also found in hypothyroidism, hypogonadism and cushing's syndrome.^[11] Obesity is common at puberty, pregnancy and menopause suggesting endocrine as factor of causation.^[12] Obesity may follow the damage to hypothalamus after head injury because it is not able to regulate appetite and satiety.^[13] Depression, anxiety

and stress may lead excess calorie intake. It may lead to complication like cardio vascular disorders, stroke, diabetes mellitus, fatty liver with cirrhosis, sleep apnoea, urinary incontinence, osteoarthritis, varicose veins, hormone dependent career pcos, gall stones, candidiasis etc.

In pathogenesis of *sthoulya* the *vata marga* gets obstructed by the increased *medo dhatu* blocking the *medo vaha srotases*. *vata* kindles the *jataragni*^[10], though *jataragni* is too high, which is evidenced by the increased appetite of patient, still the BMR (Basic metabolic rate) is very low, as the *dhatvagni* level at *meda* is low. The *medo dhatvagni mandya* leads to abnormal *upachaya* of *medo dhatu*, further leading to deprivation of nourishment to '*Uttara dhatus*'^[10] further *dhatus*). *Ati Sthoulya* is a *santarpana janya vyadhi*^[14] ie. disturbance between energy consumption and expenditure^[15] takes place leading to *sthoulya*.

Thus the first line of treatment would be '*sroto shodhana*' as '*samprapti vighatana chikitsa*'. Unless *sroto shodhana* is done, the proper action of the *medo hara* drugs cannot be achieved. So *Moorchita Tila Taila* which is *vyavayi, sookshma, vishada and lekhand*^[5] and acts as *srotoshodaka, medohara* and *sthoulya hara* was given for 30 days followed by *sthoulya hara kashaya* from 16th day to 30th day.

AIMS AND OBJECTIVES

- To evaluate the efficacy of *snehapana* with *moorchita tila taila* in patients of *sthoulya*.
- To evaluate the combined effect of *snehapana* with *moorchita tila taila* and *sthoulya hara kashaya* in patients of *sthoulya*.

MATERIALS AND METHODS

Source of data: Patients fulfilling the diagnostic criteria of *sthoulya* were selected.

Materials: The drugs required for the treatment was procured from local market.

PREPARATION OF MEDICINES

1. *Moorchita tila taila* of SDM pharmacy was procured.
2. *Sthoulya hara kashaya* : The *Yava kuta choorna* of *Amrita, Abhaya* and *Musta*^[16] were mixed in equal quantity. 7.5 gms of *Yava kuta choorna* and 120 ml of water was boiled on *mandagni* and reduced to 1/4th quantity^[17] ie.. 30 ml. This *kashaya* was strained and used.

DIAGNOSTIC CRITERIA

1. BMI above 25 kg/m²

INCLUSION CRITERIA

1. Aged above 18 yrs and below 70 yrs irrespective of all sex

2. BMI above 25 kg/m²

EXCLUSION CRITERIA

1. Aged below 18 yrs and above 70 yrs irrespective of all sex.
2. BMI below 25 kg/m².
3. Patient suffering from Systemic disorders which interferes with the course of the treatment.

STUDY DESIGN

This was an open label single group interventional clinical study. In this study 15 patients of *sthoulya* were selected keeping BMI as objective criteria on OPD basis.

Snehapana with *moorchita tila taila* ie.. 20 ml in the morning (7:30 – 8 Am) for 30 days followed by *ushna jala pana* and *kashaya* prepared with *Amrutha, Abhaya, Musta* - 30 ml at 6 Pm for 15 days from 16th day to 30th day.

Total duration of study: 30 days

INTERVENTION

1. *Snehapana with Moorchita tila taila*

Patients of *sthoulya* were administered with *Moorchita tila taila sneha pana* in the dosage of 20 ml during morning (7:30 - 8 Am) on empty stomach followed by warm water for 30 days (From 0 to 30 days). Then patients were asked to take *ushna laghu ahara* after the digestion of *sneha*.

2. *Sthoulya hara Kashaya*

After 15 days of *snehapana* with *moorchita tila taila* the patients were administered with *sthoulya hara kashaya* of *amrutha, abhaya, musta* (in combination) in the dosage of 30 ml in the evening at 6 pm till 30th day. Ie. from 16th day to 30th day. These patients were advised to avoid sweets and fried food.

ASSESSMENT CRITERIA

Assessments were done based on detailed proforma adopting standard scoring methods of objective parameters as shown below. Data were collected before treatment, 15th day of treatment, on 30th day (after completion of treatment).

Table no 1: Objective parameter for scoring^[18]

Sl no	BMI	Grades	Risk for diseases
1	Below 24.9 kg/m ²	Healthy weight	
2	25.0 kg/m ² - 29.9 kg/m ²	Over weight	Increased
3	30.0 kg/m ² - 34.9 kg/m ²	Grade I obesity	High
4	35.0 kg/m ² - 39.9 kg/m ²	Grade II obesity	Very High
5	Above or equal to 40.0 kg/m ²	Grade III obesity	Extremely High

Formula for calculating BMI

$$\text{BMI (Body mass Index)} = \frac{\text{Weight in Kilograms(kg)}}{\text{Height in Meters (m}^2\text{)}}$$

Table No 2: Criteria for overall assessment.

S.no	GRADINGS	IMPROVEMENT
1	No improvement	no reduction of body weight
2	poor improvement	0.1 - 0.5 kg reduction
3	moderate improvement	0.6-2 kg reduction
4	Major improvement	2.1-4 kg reduction

STATISTICAL ANALYSIS

Data regarding above said parameters were collected on 0th day (before treatment), 15th day and 30th day (completion of treatment). To calculate the test for significance before treatment and after treatment, in the present clinical study, Student 'paired t' test was used.

OBSERVATION

Among the 15 patients, maximum number of patients belonged to the age group 25 to 40 years i.e, 66.7%. In this study the male and female incidence was 26.67% (4 males) and 73.33% (11 patients) respectively. Most of the patients were Hindus and belongs to *kapha pittaja prakruti*. The time taken for digestion of *sneha* was 1.30 hrs to 2 hrs. Giddiness was seen in 3 patients (20%) during the digestion of *sneha*. Nausea and vomiting was seen in 2 patients (13.34%) during the digestion of *sneha*.

Initiation of menstrual cycles earlier than their expected dates seen in 4 patients (36.36%) i.e. 5-6 days earlier. *Laghuta* of the body was noticed in all almost all patients after 3-4 days of *snehapana*. Improvement in the *agni* was seen on 5-6th day of *snehapana*.

RESULTS

Results were interpreted after statistically analysing the grades given for the weight and BMI mentioned in assessment criteria before and after treatment in all 15 patients of *sthoulya*. And overall assessment was also done based on the results.

From the statistical analysis of the recorded data it is clear that there was significant weight reduction with P value less than <0.001 after the treatment.

Table no.3: Showing the statistical analysis of weight and BMI before and after 15 days.

WEIGHT and BMI (15 th day)										
Data	n	BT mean	Follow Up of mean (15thDay)	Diff eren ce 'd'	% of mea n	SD	SE	't'	p Value	Result
Weight	15	79.60	78.54	1.06	1.33	9.06	2.34	6.337	<0.001	Signifi cant
BMI	15	31.27	30.387	0.88	2.82	3.742	0.966	9.681	<0.001	Signifi cant

Where n=no of patients, BT mean = Mean before treatment, SD= Standard deviation, SE=standard error, t= table value, P= percentage value.

After administration of *snehapana* with *moorchita tila taila*, there was significant weight reduction with p <0.001,

Table no.4: Showing the statistical analysis of weight and BMI before and after 30 days.

WEIGHT and BMI (30 th day)										
Data	n	BT mean	Follow Up of mean (30thday)	Diff eren ce 'd'	% of mea n	SD	SE	't'	p Value	Result
Weight	15	79.60	77.333	2.27	2.85	9.09	2.35	10.990	<0.001	Signifi cant
BMI	15	31.27	30.387	0.88	2.82	3.742	0.966	9.681	<0.001	Signifi cant

Where n=no of patients, BT mean = Mean before treatment, SD= Standard deviation, SE=standard error, t= table value, P= percentage value.

After administration of *tila taila snehapana* and *sthoulya hara kashaya*, there was significant weight reduction with p <0.001.

Table no.5 Showing the statistical analysis of weight and BMI Before treatment, after 15 days and after treatment (30th day).

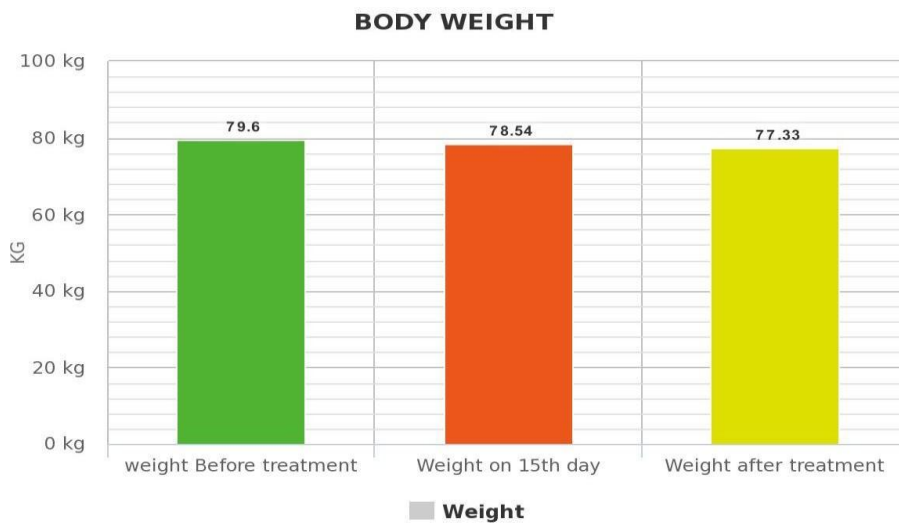
Data	n	Mean BT	Mean on 15 th day	Mean AT	'd' of mean (0-15 days)	'd' of mean (15-30 day)	'd' of mean (0-30 day)	% of mean (0-15 days)	% of mean (15 -30 day)	% of mean (0-30 day)
Weight	15	79.60	78.54	77.33	1.06	1.21	2.27	1.33	1.5	2.85
BMI	15	31.27	30.87	30.39	0.40	0.48	0.88	1.29	1.55	2.82

Where n=no of patients, BT mean = Mean before treatment, d= Difference of mean.

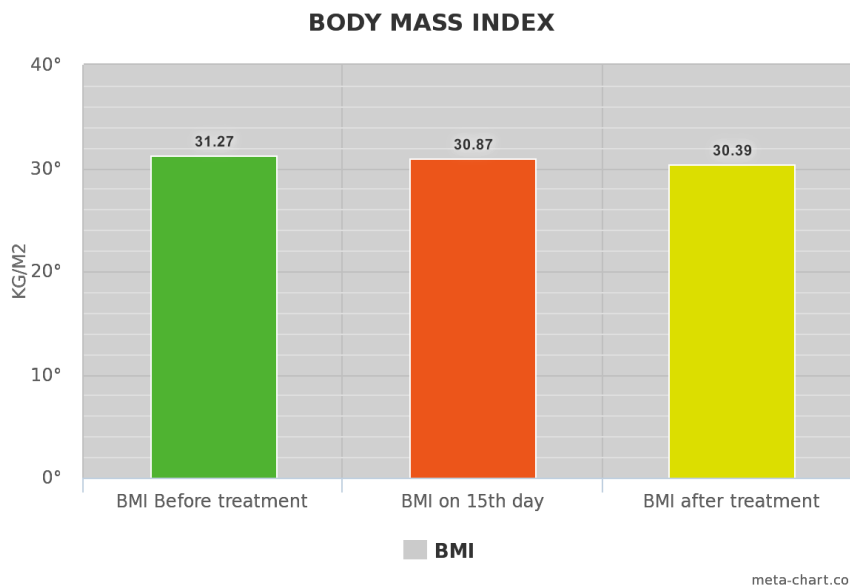
The above data shows that the difference of mean and % of mean from 0-15 th day and 15 – 30 th day and 0-30th day, there was significant reduction in weight and BMI.

Here it can be clearly observed that the % of mean from 15-30th day is more than the % of mean from 0-15 days in both weight and BMI. This indicates that the *srotoshodaka* and *lekhana* property of *tila taila* on the subjects of *sthoulya*.

Statistical analysis of data before & after treatment shows significant weight reduction in all the subjects.



Graph no 1: Showing improvement in Weight before, after 15 days and after treatment.



Graph no 2: Showing improvement in BMI before, after 15 days and after treatment.

OVERALL ASSESSMENT

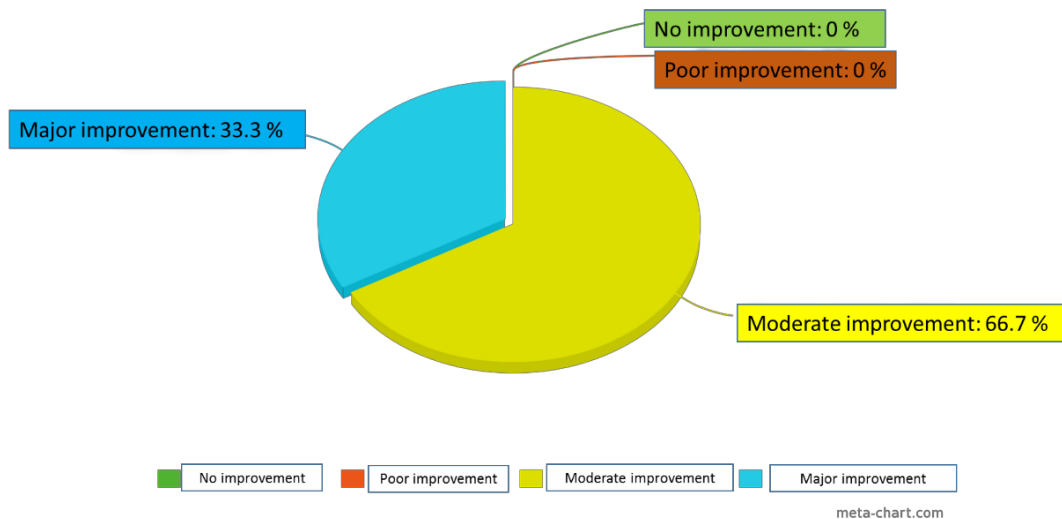
Overall assessment of effect of *Moorchita tila taila snehapana* and *sthoulya hara kashaya* in patients of

sthoulya taken for the clinical study were done based on the criteria mentioned for the same in the materials and methods .

Table no.6 Showing the overall assessment

Grades	Improvement	No of patients	Percentage
No improvement	no reduction of body weight	0	0
Poor improvement	0.1 - 0.5 kg	0	0
Moderate improvement	0.6-2 kg reduction	10	66.7 %
Major improvement	2.1-4 kg	5	33.3%

RESULT - OVERALL RESPONSE



Schematic representation of overall response to the treatment.

DISCUSSION

Obesity is not merely problem of looks, but the problem of its complications which leads to major health issues. Charaka has explained the *ashta doshas*^[10] of *sthoulya* as *ayusho hrasa* (decreased life span), *javaparodha* (slowness of movements), *kruchra vyavayata* (difficulty for indulging in sexual intercourse— due to obstruction of *medas* in *shukra vaha srotas* and produces small quantity of semen^[10], *dourbalya* (weak —due to lack of proper nourishment and equilibrium in *dhatu*^[10]), *durgandhya* (bad body odour- due to nature of flesh smell of *meda* and excessive sweating^[10]), *swedabhada* (suffering from excessive sweating), *ati matra kshuda* (excessive hunger) and *ati matra pippasa* (excessive thirst) (Due to obstruction of *vata* in the *koshata* blocking the *medo vaha srotas*, *vata* kindles the *agni* leading to excessive hunger and thirst^[10]). The causes^[10,4] of *sthoulya* being intake of *ati sampurna ahara* (Intake of food before the digestion of previous meal), *aahara* which is predominant in *guru* (heavy for digestion), *madhura* (sweet), *sheeta* (cold) *snigdha* (oily food), *avyayamat* (lack of physical activity), *avyavayat* (not indulging in sexual intercourse), *diwaswapnat* (excessive sleeping during day time), *harsha nityayatwat* (being joyful always), *achintanat* (stress free life), *bija swabhavaja* (genetic causes).

Sushruta explains *sthoulya* as *Rasa nimittaja vikra*.^[4] By the above said *nidanans*, during the formation of *annarasa*, it gets associate with *aama*, and the *sneha*,

madhura tara bhavas of *anna rasa* results in *abhishyanda*^[4] properties causing *dhamani pratichyaya* which explains the dyslipidemic and atherosclerotic complications seen in patients of obesity, which can even leads to death^[10] due to cerebro vascular accident, cardio vascular disorders etc. which are emergency in nature. Thus the increased *medo dhatu* causes *marga avarana* and starts accumulating which leads to lack of nourishment to '*Uttara dhatu*' (further *dhatu*). The aggravated *meda* combines with *kapha dosha* which is *abhishyanda* (capacity to block the channels), *bahala* (more in quantity) and *guru* (heavy), disables the person to withstand physical exercise (*avyayamat*), excessive sweating^[10], *ashta dosha* of *sthoulya*, *kshudra swasa* (shortness of breath), *gadgada* (stammering / *avyakta vachana*), *kante gurguraka* (wheezing), *gets tired easily* (*kshipra avishanti*), *soukumarya* (delicate).^[4] The *avarodha* to *vata marga* by *medas*, leads to aggravation of *vata dosha* resulting in *vata vikaras*, *prameha pidakas*, *jwara*, *bhagandara*, *vidradi* as its complications.^[4] The treatment.^[19,4] of *sthoulya* explained as *vata hara*, *sleshmahara*, *medo hara anna pana*, *dravyas* which are *rooksha*, *ushna*, *chedana* (*sroto vishodhana*- clearing the blocks in the channels), *lekana basti*, *rooksha udvartana*, *vyayama*. Thus the first line of treatment would be '*sroto shodhana*' as '*samprapti vighatana chikitsa*'. Unless *sroto shodhana* is done, the *samprapti vighatana* does not happen and medicines we prescribe will not produce the desired effects.

Taila is the choice of *sneha* for the *sthoulya* person to administer.^[20] Though *sneha* is *santarpana*, still *ushna Teekshna*, *sookshma*, *vyavayi*, *vikasi*, properties of *tila taila* in *shamana* dosage acts as *srotoshodhana* as explained in classics. *Tila taila* can be used as both *brumhana* and *karshana dravya*.^[21] Its main action is *srotoshodhana*. After *srotoshodhana*, if we administer *brumhana* line of treatment, it nourishes the body and *karshana* line of treatment, it depletes the body. In the previous studies conducted *Tila taila* showed to decrease blood cholesterol levels.^[22] Hence *moorchita tila taila* is used here for the oral administration. *Sneha pana* in *shamana* dosage is advised to be given at *anna prakankshita kala*^[23] ie. once the person starts feeling hungry. So it is advised to be taken at 7:30 to 8:00 AM once daily followed by warm water. And patients are asked to sip warm water till the digestion of *sneha* whenever required and later *ushna laghu ahara* is advised. This was followed for 30 days and its *sroto marga shodhana* action was understood by the observation of symptoms like *laghuta* of the body, proper appetite and there was significant weight loss. After 15 days of *tila taila prayoga*, the *sthoulya hara kashaya* of *amrita*, *abhaya* and *musta* was added to the intervention considering its *lekhana* and *karshana* action ie.. 30 ml to be taken in the evening at 6 PM, from 16th day to 30th day.

There was noticeable weight loss on 30th day compared to 15th day. This indicates that the *tila taila* acted as *sroto shodaka*, which enhanced the targeted action of *kashaya* and its maximum utilization given after 15 days. So before starting any *apatarpana oushadis* for *sthoulya* patient, *sroto shodhana* should be done for the targeted and faster action of the given medicines through *tila taila prayoga*.

CONCLUSION

Ati sthula person is one among the *Ashta nindita purusha*.^[10] In Ayurveda, It is said 'Being lean is considered to be best than being obese'.^[24] as obesity is considered to be difficult to treat and its association with many health issues. In classics we have direct reference of *tila taila prayoga* in *sthoulya*. This article explains how and when it has to be used in patients of *sthoulya*. The trail was conducted on 15 patients of *sthoulya* for a period of 30 days keeping weight and BMI as objective criteria. Out of 15 patients 33.3 % patients showed Major improvement and 66.7 % of patients showed moderate improvement. From the results of this study we can infer that the *tila taila prayoga* can be used as *sroto shodaka* before the administration of any *apatarpana oushadis* in patients of *sthoulya* as it is easier to follow in this busy modern life style.

This trail can be done in larger number of subjects and also in comparison with *shodhana* therapies. Thus *Moorchita tila taila pana* can be effectively done in patients of *sthoulya* before the administration of *apatarpana oushadis* for the added benefit in losing weight.

ACKNOWLEDGEMENT

I am thankful to Dr. Veena G Rao, Professor and HOD, Dept of panchakarama, JSSAMC for including me as a part of this clinical study and encouraging me to write this article successfully.

REFERENCES

1. Trikamji yadavji, chakrapanidatta teeka on Charaka samhita, Varanasi, Choukhamba surbharati prakashan, 2016. Page no. 117.
2. <http://www.who.int/mediacentre/factsheets/fs311/en/>
3. Lang Dan L et al, Harrison's principle of internal medicine, New York, mc graw hill, 18th edition, vol 1. Page no 622.
4. Trikamji yadavji, Dalhana acharya teeka on Sushruta samhita, Varanasi, Choukhamba surbharati prakashan, 2017. Page no. 74.
5. Trikamji yadavji, Dalhana acharya teeka on Sushruta samhita, Varanasi, Choukhamba surbharati prakashan, 2017. Page no. 205.
6. <http://www.who.int/mediacentre/factsheets/fs311/en/>
7. www.ijcmph.com/index.php/ijcmph/article/viewFile/18/17.
8. Lang Dan L et al, Harrison,s principle of internal medicine, New York, mc graw hill, 18th edition, vol 1. Page no 622.
9. <https://www.ncbi.nlm.nih.gov/pubmed/12625176>.
10. Trikamji yadavji, chakrapanidatta teeka on Charaka samhita, Varanasi, Choukhamba surbharati prakashan, 2016. Page no. 116.
11. Lang Dan L et al, Harrison's principle of internal medicine, New York, mc graw hill, 18th edition, vol 1. Page no 627.
12. Lang Dan L et al, Harrison's principle of internal medicine, New York, mc graw hill, 18th edition, vol 1. Page no 628.
13. Lang Dan L et al, Harrison's principle of internal medicine, New York, mc graw hill, 18th edition, vol 1. Page no 623.
14. Trikamji yadavji, chakrapanidatta teeka on Charaka samhita, Varanasi, Choukhamba surbharati prakashan, 2016. Page no. 122.
15. Lang Dan L et al, Harrison's principle of internal medicine, New York, mc graw hill, 18th edition, vol 1. Page no 627.
16. Trikamji yadavji, chakrapanidatta teeka on Charaka samhita, Varanasi, Choukhamba surbharati prakashan, 2016. Page no. 117.
17. Srivastava shailaja, Sharanghadara Samhita, Varanasi, chaukhambha orientalia, 2011, page no. 135.
18. Lang Dan L et al, Harrison's principle of internal medicine, New York, mc graw hill, 18th edition, vol 1. Page no 631.
19. Trikamji yadavji, chakrapanidatta teeka on Charaka

- samhita, Varanasi, Choukhamba surbharati prakashan, 2016. Page no. 117.
20. Trikamji yadavji, chakrapanidatta teeka on Charaka samhita, Varanasi, Choukhamba surbharati prakashan, 2016. Page no. 84.
 21. Paradakara hari sadashiva shastri, sarvanga sundari and Ayurveda rasayana commentary of Ashtanga hridaya, Varanasi, chaukhamba Sanskrit sansthna, 2012, page no- 77.
 22. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4147563/>.
 23. Trikamji yadavji, chakrapanidatta teeka on Charaka samhita, Varanasi, Choukhamba surbharati prakashan, 2016. Page no. 85.
 24. Paradakara hari sadashiva shastri, sarvanga sundari and Ayurveda rasayana commentary of Ashtanga hridaya, Varanasi, chaukhamba Sanskrit sansthna, 2012, page no- 227.