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A Comparative Clinical Study of *Triphaladi Taila Abhyanga* and *Triphala Choorna Udhvartana* in the management of *Sthaulya*

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ABSTRACT

Obesity is considered as global epidemic which is increasing due to sedentary life styles and improved socio economic conditions. It has reached epidemic proportions in India in the 21st century with morbidity effecting 5% of the country's population. If not treated it may lead to several complications like Diabetes, hypertension, atherosclerosis, heart diseases, arthritis, infertility etc. and diminishes the efficiency and happiness of those affected. Obesity is a condition in which there is an excessive accumulation of fat in the body. This disease is a metabolic disease generally occurring in affluent societies. Acharya Charaka has classified *Sthaulya* as one among *Astaninditas* producing *Daruna Vikaras* and even deaths. Presently available treatment modalities do have their own limitations and adverse effects and not giving satisfactory results in the treatment of obesity. Hence present study was undertaken to explore the efficacy of Ayurvedic therapies and formulations like *Triphaladi Taila* having *Medohara* properties mentioned by *Chakradatta* and *Triphala Choorna* having *Kaphahara* properties mentioned by *Sharangadhara*. 30 patients of *Staulya* were randomly selected, allocated in two groups of 15 patients each. Group A were subjected to *Triphala Choorna Udhvartana* for 14 days and group B were subjected to *Triphaladi Taila Abhyanga* for 14 days. The patients were assessed with severity of symptoms subjectively and objectively before and after treatment. Data from each group were statistically analysed and compared. Both the groups showed marked results but *Triphaladi Taila Abhyanga* gave better results than *Triphala Choorna Udhvartana* in the management of *Sthaulya*.

Key words: *Sthaulya, Obesity, Triphala Choorna, Udhvartana, Triphaladi Taila, Abhyanga.*

INTRODUCTION

Sthaulya (Obesity) is one among the most burning problem of our society because of this age of machine and materialism. In our routine life physical activities are reduced and mental stress is increased. Western life style made man to forget the law of nature. So no one is bothered about their balanced diet as well as style of living. So this problem is also going on increasing with the time.

Obesity is a condition in which there is an excessive accumulation of fat in the body. This disease is a metabolic disease generally occuring in affluent societies. It is associated with increased mortality by predisposing to the development of important diseases like Diabetes, hypertension, atherosclerosis, heart diseases, arthritis, infertility etc. and diminishes the efficiency and happiness of those affected.[1]

Obesity is considered as global epidemic which is increasing due to sedentary life styles and improved socio economic conditions. It has reached epidemic

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proportions in India in the 21st century with morbidity effecting 5% of the country's population.[2] India is just behind US and China in this global hazards list of top 10 countries with highest number of obese people.[3] The recent statistical data of WHO shows that the world wide prevalence of obesity is around 400 million with high rates among women than in men and the condition is more in urban areas than among rural population.[4] New research suggests there are about 775 million obese people in the world including adult children and adolescent.

In Ayurveda *Sthaulya* has been described in various *Samhitas* and *Samgraha Granthas*. *Acharya Sushruta* has also mentioned that *Madhyama Sharira* is the best. *Ati Sthaula* and *Atikrisha* are always affected with some disease condition.[5]

Acharya Charaka mentioned *Sthaulya* under the eight varieties of impediments, which designated as *Nindita Purusha*, *Ati Sthoola* comprises one of them.[6] Moreover *Acharya Charaka* counts this problem in *Santarpanjanita Vyadhi*.[7] *Acharya Charaka* mentioned eight *Doshas* of *Sthoola Purusha* i.e. *Ayuhrasa, Javoparodha, Alpavyavaita, Daurbalya, Daurgandhya, Swedabadha, Atitrishna, Atikshudha*.[8] In *Sthaulya* increased *Meda, Agni* and *Vayu* create complications like *Prameha Pidika, Jvara, Vidradhi, Bhagandara* etc. Beside this *Sthaulya* precipitates diseases like Atherosclerosis, Coronary heart disease, Diabetes mellitus, Osteoarthritis and Hypertension etc. Looking towards this it can be said that *Sthaulya* become hurdle on the way of achieving *Chaturvidha Purushartha*. Obesity is explained as *Sthaulya*, *Medovriddhi* and *Medoroga* in all *Samhitas*. It is *Rasa Nimittaja Vyadhi*.[9] Its *Nidana, Samprapti, Lakshanas* and *Upadravas* are also mentioned in detail.[10],[11] Elaborate description of *Chikitsa* is also done by *Acharyas*.[9],[12] Mainly it includes *Shodhana* and *Shamana* type of treatment. Among them *Abhyanga Karma* with *Triphaladi Taila* and *Udhvartana Karma* with *Triphala Choorna* which are having *Kaphahara* and *Medohara* property is selected for the present study.[13]

Though, modern medical science has been developing advanced technologies and therapeutics for the diagnosis and management of different disorders, still ancient medical system fulfill the health care needs of a vast majority of the population. Now a days, large section of humanity globally is returning towards natural ways of life and they have lot of expectations from Ayurveda, which is not only a system of medicine rather the way of life, as it is easily available, toxic-free and eco-friendly with its holistic approach.

Presently available treatment modalities do have their own limitations and adverse effects[14] and not giving satisfactory responses in the treatment of obesity. At this juncture it becomes essential to explore the efficacy of certain Ayurvedic therapies and drugs in management of obesity. Different medications having *Rookshana* effects are described in classics.[18] Easy availability, cost effectiveness with good clinical results is considered as the qualities of a best medicine. Hence *Triphaladi Taila* and *Triphala Choorna* have been selected for the present clinical study. As *Triphala Choorna* having *Rookshana, Laghu* and *Tridoshahara* property is selected for *Udhvartana* and *Medohahara* qualities of *Triphaladi Taila* are mentioned in *Sthoulyadhikara* by *Chakradatta*.[15] So here an effort is made to compare the efficacy of *Triphaladi Taila Abhyanga* and triphala *Choorna Udhvartana.*

Objectives of the Study

To compare the efficacy of *Triphala Choorna Udhvartana* and *Triphaladi Taila Abhyanga* in *Sthaulya*.

Materials and Methods

30 patients of *Sthaulya* within the age group of 16-60 yrs were selected randomly from O.P.D and I.P.D of BLDEA'S AVS Ayurveda Mahavidhyalaya Hospital and Research center, Vijayapura and camps conducted in the city (Vijayapura) by the Institute, irrespective of sex, occupation and socio-economic status.

1. Diagnostic criteria

Patients presenting with clinical features of *Sthaulya* – *Chalasphik, Chalaudara, Chalastana.*

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2. Inclusive criteria

Patients irrespective of sex and age between 16 to 60yrs presenting with the classical clinical features of sthaulya.

3. Exclusive criteria

a) Patients with complications of sthaulya roga

b) Obesity patients with any other systemic diseases and pregnant women.

4. Intervention

While making group simple random sampling procedure is adopted.

Group 'A'

- Sample size : 15 patients
- Sample type : *Sthaulya*
- Procedure : From 1st day to 14th day *Triphala Choorna Udvartana* was done along with *Pathya*.
- Duration : 45 mins

Group 'B'

- Sample size : 15 patients
- Sample type : *Sthaulya*
- Procedure : From 1st day to 14th day *Triphaladi Taila Abhyanga* was done along with *Pathya*.
- Duration : 45 mins

Assessment criteria

A detailed proforma was prepared for the assessment of subjective and objective parameters by grading them. The data obtained will be recorded statistically.

Subjective criteria

- *Chala Sphik Udara Stana*
- *Daurbalya (Alpa vyayama)*
- *Atisweda*
- *Kshudra Shwasa*
- *Atipipasa*
- *Atiksudha*
- *Daurgandhya.*

Objective criteria

- Value of BMI
- Circumference of the chest, abdomen, waist, mid-arm, mid-thigh
- Anthropometrics (measuring skin fold thickness by using harpenden/vernier callipers)

OBSERVATION AND RESULTS

Group A

Effect of therapy on subjective parameters

The relief in *Angachalatva* i.e. *Angachalatva* of *Sphik* - 33.33%, *Angachalatva* of *Udara* 42.85% and *Angachalatva* of *Stana* 37.93% were observed. These all results were statistically significant (P<0.05). 48.64% in *Kshudrashwasa*, 55.55% relief was observed in *Daurbalyata*, 50% in *Swedadhikya*, 63.33% in *Daurgandhya*, 44.1% in *Atikshut*, 40% in *Atipipasa* was observed, which were also statistically significant (P<0.05).

Effect of therapy on objective parameters

Weight: In this group of 15 patients, before administration of *Triphala Choorna Udhvartana* the mean score of weight was 81.83kg, which was brought down to 80.5kg after the treatment with 1.03% of relief showed the statistically significant (P<.001) result.

BMI: Whereas in BMI the mean score was 34.34kg/m^2 before treatment, which was brought down to 33.63 kg/m^2 after *Udhvartana* therapy with 1.86% relief reported with the statistically significant (P<0.05) result.

Body circumference: Decrease in various body circumference i.e. in chest circumference 1.63%, in abdominal circumference 5.21%, in hip circumference 2.16%, in mid thigh circumference 6.36%, and in mid arm circumference 3.03% were observed. All the results were statistically significant (P<0.05).

Skinfold thickness: Decrease in various skin fold thickness i.e. in biceps thickness 13.9%, in triceps

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thickness 13.42%, in sub-scapular thickness 10.5%, in abdominal skin fold thickness 44.65% and in thigh skin fold thickness 10.34% were observed. All the results were statistically significant (P<0.05).

OVERALL EFFECT OF THERAPY

Total 15 patients of *Triphala Choorna Udhvartana* group completed the full course of treatment. 13.33% patients showed marked improvement, 66.67% patients showed moderate improvement and 20% patients improved.

Group B

Effect of therapy on subjective parameters

The relief in *Angachalatva* i.e. 29.03% in *Angachalatva* of *Sphik*, 41.93% *Angachalatva* of *Udara*, 29.03% *Angachalatva* of *Sthana* were observed. All results were statistically significant (P<0.001).

35.13% relief was observed in *Daurbalyata*, 41.17% in *Kshudrashwasa*, 41% in *Daurgandhya*, 32.43 in *Swedadhikya*, 38.89% in *Atikshut* and 39% in *Atipipasa* was observed, which all were statistically significant (P<0.001).

Effect of therapy on objective parameters

Weight: In this group of 15 patients, before *triphaladi taila abhyanga* the mean score of weight was 80.8 kg, which was reduced to 79.43% kg after with 1.69% of relief shows the statistically significant (P<0.001) result.

BMI: In BMI the mean score was 32.79 before triphaladi taila abhyanga, which reduced to 32.25% kg/m^2 after the abhyanga karma with 1.54% relief shows with the statistically significant (P<0.001) result.

Body circumference: Decrease in various body circumference i.e. 1.29% in chest circumference 4.77%, in abdominal circumference 2.86%, in hip circumference 2.13%, in mid thigh circumference 0.7% in mid arm circumference were observed. Except chest circumference all the results were statistically significant (P<0.05).

Skinfold thickness: Decrease in various skinfold thickness i.e 12.89% in biceps thickness, 14.77%, in triceps thickness, 12.31% in sub-scapular thickness, 12.52%, in supra iliac skin fold thickness were observed. All the results were statistically significant (P<0.05).

OVERALL EFFECT OF THERAPY

Total 15 patients of *Triphaladi Taila Abhyanga* group completed the full course. Out of 15 patients, 6.66% patient showed marked improvement, 66.67% patients gained moderate improvement, while 26.67% patients improved.

DISCUSSION

Karshya is better for treatment than *Sthaulya* as it is difficult to treat. In *Sthaulya* mainly *Kapha, Vata* and *Meda* are vitiated and if *Vata Dosha* is treated by *Santarpana (Brimhana) Chikitsa* then *Meda* and *Kapha* will get increase and if *Meda* and *Kapha* are treated by *Apatarapana* (*Langhana*) *Chikista* then *Vata* will increase and can further causes other complications, hence the treatment of *Sthaulya* is difficult.

The principle treatment of obesity is to rectify *Medo Dhatu, Agni* and *Sleshma*. The medicines which can disintegrate *Meda* and rectify *Kapha* and *Vata Dosha* should be adopted hence *Triphaladi Taila* having *Kaphahara* and *Medohara Guna* was selected for *Sarvanga Abhyanga* which inturn pacify *Vata Dosha* are selected for present clinical trial and *Triphala Choorna* which is having *Tridoshahara Guna* is selected for *Udhvartana Karma.* The main aim is to improve the vitiated *Agni* and *Doshas* and bring them back to normalcy using appropriate medicines and therapies combined with life styles corrections.

Age - Obesity can occur at any age and it is more prevalent in middle age. The gain in weight is more as the age advances which starts at the starting of third decade and prevalence of obesity is more in third and fourth decade. In this clinical trail majority of patients were in the age group 31-40 yrs i.e. 46.67% (14 pts) and in age group of 41-50 yrs i.e., 23.3% (7 pts), in the age group of 16-30 yrs it is 30% (9 pts). In 31-40 yrs and 18-30 yrs age group patients were more because housewives, office workers and students were more

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who were having sedentary lifestyle, with less activities.

Sex - Obesity occurs in both the sex. In the present study it was observed that female patients were more i.e. 90% (27 pts) when compared to male patients 10% (3 pts). The majority of females may be due to the influence of their work, habits, sedentary life style and faulty diet. A study conducted shows women are more prone to obesity than men.

Marital status - Since the disease affects more in the middle age person which is the age when generally a person remains married. In the present study, maximum patients registered were married i.e. 83.33% (25 pts) and unmarried were 16.67% (5 pts).

Religion - Distribution of patients according to religion showed the highest incidence of obesity was reported in Hindu i.e. 83.34% (25 pts) as the population of Hindus is more compared to Muslim and Christians, while only 13.33 % (4 pts) were of Muslim community and 6% (1 pt) belonged to Christian community . The above data suggest the fact that clinical trials were conducted in Hindu dominated societies, who routinely consume food rich in fat and carbohydrate. The sample size was very small and most of the patients who visited our hospital were Hindus.

Habitat - In the present study it was observed that 93.33% (28 pts) were from urban community while only 6.67% (2 pts) were from rural area as the trials were conducted in urban area which confirms the role of life style changes, faulty dietaries physical inactivity, in the manifestation of obesity.

Socio economic status - Obesity has been more prevalent in the upper socio economic groups due to sedentary lifestyles and faulty diet habits. The present study states that majority of patients i.e. 17 pts (56.67%) were from upper class, 36.67% (11 pts) belong to middle class and 2 patients (6.67%) were from lower class.

Occupation - In this study maximum number of patients i.e. 60% (18 pts) were house wife, 6% (1 pt) each of carpenter, lawyer, nurse and accountant and 16.67% (5 pts were students i.e. total 40% which suggests that the life styles of these patients (sitting for long duration and excessive stress in working place) might have influenced the prevalence rate.

Food habits - Majority i.e. 66.6% (20 pts) were having mixed diet and remaining 33.3% (10pts) were vegetarians. Excessive consumption of oily food and fats used in processed food has doubled over the last 30 years and preference for convenience foods or packed food has increased. Due to increased frequency of eating out, using inconsistent meal patterns are turning people into obese.

***Prakruti* -** In the present study 66.67% (20 pts) were *Kaphavata Prakruti*, 33.33% (10 pts) of *Kaphapitta*. The observation suggests the susceptibility of a person having *Kapha Pradhana Prakruti* as according to classics *Sthaulya* being *Kapha Nanatmaja Vyadhi* and *Kapha, Vata* plays a significant role in the manifestation of *Sthaulya*.

***Agni* -** 33.3% (10pts) were having *Teekshagni* which justify the *Samprapti* of *Sthaulya*. Other 16.67% (5 pts) were having *Vishmagni* and *Mandagni* each which is predictable due to vitiation of *Agni* and is evident.

***Kulavrutthanta* -** 42% (7 pts) had a history of hereditary which is evident that due to hereditary factors persons are prone to become obese. While in 58% (23 pts) *Kula Vruttanta* is absent indicates that offspring become obese due to their tendency to over eat and less in activity.

Chief symptoms - In the present study it was observed that all 30 patients were suffering from *Medovridhi*, 18 patients (53.33%) were suffering from *Javoparodha*, 21 patients (70%) were suffering from *Swedadhikya*, 19 patients (63.33%) were suffering from *Daurgandhya*, 24 patients (80%) were suffering from *Daurbalya*, 18 patients (60%) were suffering from *Atikshuda* and 24 patients (80%) were suffering from *Atipipasa*.

Associated symptoms - In the present study it was observed that all 30 patients were having *Angagaurava*, 17 (56.67%) patients were having *Angachalatva*, 15 (50%) patients were having

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Nidradhikya, 6 (20%) patients were having *Angashaithilya*, 21 patients (70%) were having *Gatarsada*, 14 patients (46.67%) were having *Utsahahani*, 8 (26.67%) patients were having *Snigdhangata*.

Effect of therapies

The sample of 30 patients was selected excluding the dropouts and subdivided into 2 groups. 15 patients in Group-A and 15 patients in Group-B completed the treatment course. Treatment was observed according to plan of study. The results were derieved after execution of statistical techniques.

Effect on Weight

Group-A mean weight reduction in percentage is 1.03% and in Group-B mean weight reduction is 1.69%. The patients of Group-B have shown more significant results in weight reduction after treatment. It implies that *Triphaladi Taila Abhyanga* has got significant effect in Group-B patients with its *Kaphahara* and *Medohara* property and *Abhyanga* being *Vata Shamaka*. The effect is significant because the main causative factor responsible for *Sthaulya* being *Kapha, Vata* and *Medodushti* and *Triphaladi Taila Abhyanga* being *Kapha, Medohara* and *Vata Shamaka*.

Effect on BMI

The mean reduction on BMI in Group-A patient is 1.86% and 1.54% in Group B. The patients of Group-A have shown more significant results on BMI after treatment. This implies *Triphala Churna Udhvartana* has got effect in Group-A with its medicinal properties like *Laghu* and *Rooksha Guna Srotoshodak, Amahara* and *Kapha Medahara* property along with the *Udhvartana* procedure (rubbing opposite to hair follicles) worked here more than Group-B on BMI.

Effect on Circumference

Chest circumference - In Group-A mean reduction in chest circumference is 1.63% and in Group-B 1.29%. The patients of Group-A have shown more significant results on chest circumference after treatment.

Abdomen circumference - In Group-A mean reduction in *Udara* circumference is 5.21% and in Group-B 4.77%. The patients of Group-A have shown more significant results on *Udara* circumference after treatment.

Hip circumference - In Group-A mean reduction in chest circumference is 2.16% and in Group-B 2.86%. The patients of Group-B have shown more significant results on hip circumference after treatment.

Mid arm - In Group-A mean reduction in chest circumference is 3.03% and in Group-B 4.82%. The patients of Group-B have shown more significant results on Mid-arm circumference after treatment

Mid Thigh - In Group-A mean reduction in chest circumference is 6.36% and in Group-B 8.56%. The patients of Group-B have shown more significant results on mid-thigh circumference after treatment.

Effect on skinfold thickness

Biceps - In Group-A mean reduction in chest circumference is 13.09% and in Group-B 12.89%. The patients of Group-A have shown more significant results on biceps sft after treatment.

Triceps - In Group-A mean reduction in chest circumference is 13.42% and in Group-B 14.77%. The patients of Group-B have shown more significant results on triceps sft after treatment.

Sub scapular - In Group-A mean reduction in chest circumference is 10.5% and in Group-B 12.31%. The patients of Group-B have shown more significant results on sub-scapular sft after treatment.

Supra iliac - In Group-A mean reduction in chest circumference is 10.34% and in Group-B 12.52%. The patients of Group-B have shown more significant results on supra-iliac sft after treatment.

By the observations and results of both groups, reduction in BMI, circumference of chest and abdomen and SFT of biceps were more significant in Group-A were as reduction in weight, circumference of hip, mid-arm, mid-thigh and SFT of triceps, sub-scapular and supra-iliac were more significant in Group-B. We can say that the both the groups showed significant results with their respective procedures but

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Group-B had more progressively positive changes in the individual variables than Group A.

Probable mode of action of *Abhyanga*

According to *Sushruta* 4 *Dhamanies* are divided into hundred to thousand and becomes innumerable, covering the body like network, whose openings are attached to *Roma Kupas* through which potency of *Sneha* enters into the body and nourishes the body or particular part of the body.

Commentator Dalhana has explained in detail about the absorption of *Sneha* used in *Abhyanga* procedure. According to that the oil used in *Abhyanga* reaches the different *Dhatus* one by one like *Ksheera Dadhi Nyaya* and *Kedar Kulya Nyaya* if it is applied for the sufficient time.

Hence it is clear that the drug used in *Abhyanga* gets absorbed by the skin through *Bhrajaka Pitta* and *Dhatvagni*. *Triphaladi Taila Abhyanga* is having the *Gunas* of *Kapha*, *Meda Vilayana* property and due to *Ushna* and *Teekshna Guna* of *Dravya* and massage effect on *Romakupa*, the *Veerya* of drug enters into body, there after it opens the *Mukha* of *Siras* making *Paka* of *Kapha* and *Medas*. By the above action, there will be *Dravatha Vrudhi* of *Kapha* and *Medas*. When *Doshas* enters *Koshta*, via above procedure, they should be flushed out of the body and by this the evacuation of these *Vikrutha Dosha* and *Dushya* occurs. By all of these *Nirharana* of *Vikruth Vata, Kapha* and *Aap Dhatu* along with *Medas* will takes place resulting in *Shareera Laghavata*.

Probable mode of action of *Udhvartana*

By *Udvartana Karma,* the *Bhrajaka Pitta* seated in *Twacha* absorbs *Virya* of *Triphala*. Hence, by the rule *Paka Vilinata* of *Dosha* that is *Kapha* and *Meda* occurs. In *Udvartana, Triphala* when applied externally being *Ruksha Gunatmaka* absorbs *Prithakatwa Mala* through sweat pores as inferred by the *Varti* formation of course *Triphala Churna*. This validates the process of *Udvartana* as an effective measure to remove accumulated *Medas* at undesirable areas such as *Sphik, Udara, Vaksha* locally. The above considerations lead us to the fact that *Triphala Udvartana* is the best *Bahir Parimarjana Chikitsa* for *Madhyama Sthaulya.* Besides which according to Charaka it has been attributed to *Bhibhatsahara* and *Dourghandyahara,* which are the commonest stigmas of *Sthaulya* person.

CONCLUSION

Sthaulya is a *Kashtasadhya Vyadhi* but can be managed with diet and exercise along with treatments and *Nidana Parivarjana* plays an important role in treating *Sthaulya*. *Kapha Pradhana Prakruti* persons are more prone to *Sthaulya*. *Kapha*, *Meda* and *Vata Dosha* are the main *Doshas* and *Dushya* responsible for *Sthaulya* manifestation. Both the treatments have shown statistically significant result in the treatment of *Sthaulya* and reducing subcutaneous fat. *Triphaladi Taila Abhyanga* has shown statistically significant result in reduction of objective variables and *Triphala Choorna Udhvartana* has shown statistically significant results in reduction of subjective variables.

REFERENCES

1. Davidson,Davidson's Principles and practice of medicine, sixteenth edition published by Churchill livingstone chap:3,Pg 76
2. https://en.m.wikipedia.org
3. www.dnaindia.com>health
4. http://www.wpro.who.int/health topics/obesity.
5. K.R.Srikanthamurthy, sushruta samhita (1), chaukhamba orientalia ,varanasi UP 2nd edition 2004:110
6. R.K Sharma and Bhagwan Das, Charaka samhita (1), chaukhamba Sanskrit series officice , Varanasi,UP. Reprint 2002:374-375
7. R.K Sharma and Bhagwan Das, Charaka samhita (1), chaukhamba Sanskrit series officice , Varanasi,UP. Reprint 2002:395-396
8. R.K Sharma and Bhagwan Das, Charaka samhita (1), chaukhamba Sanskrit series officice , Varanasi,UP. Reprint 2002:375

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9. K.R.Srikanthamurthy, sushruta samhita (1), chaukhamba orientalia, varanasi, 2nd edition 2004:108

10. Acharya Bhavamishra, Bhavaprakash edited with vidyotini hindi commentary by "Bhisagratna pandit Sri Brhamasankar Mishra" published by chaukhamba Sanskrit sansthana, Varanasi, UP. 6th edition 1997 ,madhyama khanda chap:39.medorogadhikara Pg:405

11. Yogaratnakara with vidyotini hindi commentary by Vaidya Lakshmipati Shastri edited by "Bhisagratna Pandit Shri Brhamasankarsastri, Published by chaukhamba prakhasana, Varanasi, UP, EDITION:2008, Uttarardha,medoroganidanam Pg-97

12. Acharya Vagbhata, Astanga Hridaya with sarvangasundara commentary by Arunadatta and Ayurved Rasayana and commentary by Hemadri edited by " Harisastri padadakara vaidya " published by chaukhamba orientalia, Varanasi, UP. 9th edition-2002 Sutrasthana chap:14-15, Dvividopakramaneeya adhyaya,Pg:224.

13. R.K Sharma and Bhagwan Das, Charaka samhita (1), chaukhamba Sanskrit series office, Varanasi,UP. Reprint 2002:396

14. www.holisticonline.com/conventional approach to obesity.

15. K.R Krishna Murthy, Sarangadhara samhita, published by chaukhambha Sanskrit Bhawan, Varanasi, UP, Reprint 2016, poorvakhanda, chap:4:10,Pg-18

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