(IJRMST) 2018, Vol. No. 6, Jul-Dec **e-ISSN: 2455-5134, p-ISSN: 2455-9059**

AYURVEDA TACKLES OBESITY (*STHOULYA)* – A LIFESTYLE DISORDER

Dr. A.R.V. Murthy, M.D., (Ay) Ph.D.,
Dean and Medical Superintendent
Atreya Ayurvedic College Hospital and Research Centre,
DODDABALLAPURA, Bangalore, Karnataka

INTRODUCTION

The number of obese people in the world is on the rise. Obesity is a leading preventable cause of death worldwide, with increasing prevalence in adults and children, and authorities view it as one of the most serious public health problems of the 21st century. It significantly shortens the life span (*Ayushohrasa*) & is associated with increased incidences of a multitude of major & minor illnesses. If a middle aged man is 10kg over weight he is expected to die roughly 4 years earlier than one of normal weight, due to severe hazards which are associated with overweight. According to WHO 1.2 billion people worldwide are officially classified as overweight. This is probably the most sedentary generation of people in the history of the world. In the Indian scenario, even with the growing awareness about health and fitness, more than 3 percent- about 3 crores of the Indian population is obese. Obesity is from the Latinroot *obesitas* which means "stout, fat, or plump." Csus is the past participle of edere (to eat) with *ob* (over)added to it.

The balance between calorie intake and energy expenditure determines a person's weight. The terms **'overweight'** and **obesity** refer to person's overall body weight and where the extra weight comes from. Overweight is having extra body weight from muscle, bone, fat, and/ or water. Obesity is an increase in body weight beyond the limitation of skeletal and physical requirements as a result of body fat. Obesity is defined as BMI greater than 30 kg/m2. The body mass index (BMI) equals a person's weight in kilograms (kg) divided by their height in meters (m) squared. **Waist to Hip ratio (WHR)** is the ratio of the circumference of the waist to that of the hips. It is calculated by measuring the smaller circumference of the natural waist, usually just above the belly button, and dividing by the hip circumference at its widest part of the buttocks or hip. A WHR of 0.7 for women and 0.9 for men have been shown to correlate strongly with general health and fertility. WHR larger than 1.5 results in high risk of diabetes hypertension and heart ailment.

Hyperplastic obesity is excessive weight gain in childhood, characterized by the creation of new fat cells. **Hypertrophic obesity** is the excessive weight gain in adulthood characterized by expansion of already existing fat cells. **Central obesity**, is the accumulation of abdominal fat resulting in an increase in waist size, shaped like an Apple. There is a strong correlation between central obesity and cardiovascular disease. **Diabesity** is the word blend of diabetes and obesity, which sums up the problem. Hand in glove with the obesity rates is a rocking rate of diabetes. **Bariatrics** is the branch of

medicine that deals with the causes, prevention, and treatment of obesity. The field encompasses dieting, exercise and behavioral therapy approaches to weight loss, as well as pharmacotherapy and surgery. **Fletcherism** is, the practice of eating only when hungry and in small amounts, and especially chewing one's food thoroughly, recommended as an aid to digestion. **The Glycemic index (GI**) factor is a ranking of foods based on their overall effect on blood sugar levels. **Low GI diet** is the diet based around this research. **Weight cycling**, is the repeated loss and regain of body weight due to excessive hypocaloric dieting. Every failed attempt at losing weight by dieting results in higher weight.

Sedentary lifestyle a medical term used to denote a type of lifestyle with no or irregular physical activity and characterized by sitting , reading, watching television and computer use for much of the day with little or no vigorous physical exercise, plays a significant role in obesity. **Overeating** associated with **physical inactivity is** most common cause of obesity. **Hypothyroidism** is found in obese individuals with varying degree of significance. **Trans fats(** hydrogenated fats) are made by adding hydrogen to liquid vegetable oil under pressure. They harm by increasing the cholesterol levels in the blood. They also bring down the 'good cholesterol'.

The main treatment for Obesity consists of physical exercise and proper diet. Physical activity and exercise help burn calories. The amount of calories burned depends on the type, duration, and intensity of the activity. It also depends on the weight of the person, a 200- pounds person, because the work of carrying those extra 80 pounds must be factored in. But exercise as a treatment for Obesity is most effective when combined with a diet and weight loss program. A safe and effective long term weight reduction and maintenance diet has to contain balanced, nutritious foods to avoid vitamin deficiencies and other diseases of malnutrition.

Principles of Ayurveda have significant value ever in the life of modern man. Ayurveda has put emphasis on food, in the management of obesity & suggests improving food habits and taking diet according to Ayurvedic body type. Overeating results in food indigestion that leads to creating toxins, fat and excess weight. One should eat more nutritious foods that have 'low energy density' *(Gurucatarpanam***).** Intake of medicine before meals (*Pragbhkta*) is insisted for losing weight (*Krshikarana*). It has been advised to take *Lekhana* and Medohara drugs on empty stomach in the early morning & before meals. *Guggulu* has traditionally been used in Ayurvedic medicine to treat obesity, lipid disorders, and rheumatoid arthritis. *Guggulu* increases body's metabolic rate, improves thyroid function, and increases fat-burning activity of the body, and increases thermo genesis or heat production. It helps to lower cholesterol and triglycerides.. A series of therapeutics measures in the form of Massage (Abhyanga & Udvartana) Sudation (*Sweda*) Therapeutic Emesis (Vamana) TherapeuticPurgation (*Virechana*) &Therapeutic Enemata (Basti) which are incorporated as Bio purification measures (*Panchakarma)* form the main stay of Ayurveda Therapy for Obesity. Palliative measures (*Shamana*) in the form of drug (*Aushadhi*) diet (*Aahara*) exercise (*Vihara)* coupled with avoiding etiological factors (*Nidana parivrjana*) are employed frequently and successfully by Ayurveda Physicians to tackle obesity and related disorders.

(IJRMST) 2018, Vol. No. 6, Jul-Dec **e-ISSN: 2455-5134, p-ISSN: 2455-9059**

OBESITY MODERN PESPECTIVE

Obesity is one among so called'LIFESTYLE DISORDERS' and is the leading cause of preventable death, next to smoking.Obesity with increasing prevalence in adults and children, and authorities view it as one of the most serious public health problems of the 21st century. The World Health Organization (WHO) predicts that overweight and obesity may soon replace more traditional public health concerns such as under nutrition and infectious diseases as the most significant cause of poor health Obesity is a public health and policy problem because of its prevalence, costs, and health effects.

DEFINITION

- **Obesity** is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems. People are considered obese when their body mass index (BMI), exceeds **30 kg/m^2.**
- Obesity is a state of excess adipose tissue mass. Over weight condition is not obesity.
- Over weight with adiposity may only constitute to obesity .It is more effectively be defined by assessing it's linkage to morbidity or mortality.
- Obesity is a metabolic disorder which is primarily induced and sustained by an overconsumption and underutilization of caloric substrates.
- Obesity is defined by body mass index (BMI) and further evaluated in terms of fat distribution via the waist hip ratio and total cardiovascular risk factors.

BMI is closely related to both percentage body fat and total body fat.

BMI is defined by the weight of a person in kg. divided by the square of the person's height in meters.

In 1997, the International Obesity Task Force, convened by the World Health Organization (WHO), recommended a standard classification of adult overweight and obesity

BMI	**Classification**
<18.5	**Underweight**
18.5-24.9	**Normal weight**
25-29.9	**Overweight**
30-34.9	**Obesity Class I**
35-39.9	**Obesity Class II**

40-49.9 Obesity Class III

50 and above Super Obesity

Ideal body weight in Kg. (IBW)

-in male: weight = height in cm minus 100

-in female: weight = height in cm minus 105

CAUSES OF OBESITY

Obesity is most commonly caused by a combination of

- Excessive food energy intake,
- Lack of physical activity, and Genetic susceptibility,

Although a few cases are caused primarily by

- Endocrine disorders,
- Medications gain (e.g., atypical antipsychotics),
- Psychiatric illness, & Sedentary life style
- Decreased rates of smoking, because smoking suppresses appetite
- Pregnancy at a later age (which may cause susceptibility to obesity in children),

The study of the effect of infectious agents on metabolism is still in its early stages. Gut flora has been shown to differ between lean and obese humans. There is an indication that gut flora in obese and lean individuals can affect the metabolic potential.

An association between viruses and obesity has been found in humans and several different animal species. **AD-36 adenovirus**popularly known as fat **virus** has been observed to increase the amount of body fat on laboratory animals, an effect that has been duplicated on chickens and monkeys

Hormonal basis of obesitytwo hormones are found in this account **1- Leptin 2- Ghrelin**

- **GHRELIN** is produced by the stomach, modulating short-term appetitive control (i.e. to eat when the stomach is empty and to stop when the stomach is stretched). This hormone is secreted by entero endocrines of stomach. In obese persons Ghrelin is secreted in much larger amounts, It accelerates the appetite and finally causes the obesity

- **LEPTIN** is produced by adipose tissue to signal fat storage reserves in the body, and mediates long-term appetitive controls (i.e. to eat more when fat storages are low and eat less when fat storages are high). Leptin It is produced to control the food intake and energy expenditure. It acts through hypothalamus. A defect in leptin controlling gene or its receptor may produce obesity. Some obese persons have low level of leptin in blood, defective leptin gene is one cause of obesity Leptin and ghrelin are considered to be complementary in their influence on appetite.

  Evidence to support the view that some obese people eat little, yet gain weight, due to a slow metabolism; on an average obese people have a greater energy expenditure than their thin counterparts due to the energy required to maintain an increased body mass.

COMPLICATIONS OF OBESITY

- Cardio vascular disease,
- Cardiomyopathy
- Type 2 diabetes,
- Certain types of Cancer,
- Orthopedic disorders
- Liver disorders including fatty liver
- Respiratory disorders
- Eating disorders
- Obstructive sleep apnea,

MANAGEMENT OF OBESITY

.The main treatment for obesity consists of dieting and physical exercise.

- Diet programs may produce weight loss over the short term, but maintaining this weight loss is frequently difficult and often requires making exercise and a lower food energy diet a permanent part of a person's lifestyle.
- Diets to promote weight loss are generally divided into four categories: Low-fat Low-carbohydrate Low-calorie & Very low calorie.
- Success rates of long-term weight loss maintenance with lifestyle changes are low, ranging from 2–20%.

- Dietary and lifestyle changes are effective in limiting excessive weight gain in pregnancy and improve outcomes for both the mother and the child.

EXERCISE

With use, muscles consume energy derived from both fat and glycogen. Due to the large size of leg muscles, walking, running, and cycling are the most effective means of exercise to reduce body fat.

Exercise affects macronutrient balance. During moderate exercise, equivalent to a brisk walk, there is a shift to greater use of fat as a fuel

MEDICATION

- Orlistat (Xenical), is widely available and approved for long term use. Weight loss however is modest with an average of 2.9 kg (6.4 lb.) at 1 to 4 years and there is little information on how these drugs affect longer-term complications of obesity.Its use is associated with high rates of gastrointestinal side effects and concerns have been raised about negative effects on the kidneys.
- Two other medications are also available - Lorcaserin (Belviq) results in an average 3.1 kg weight loss (3% of body mass) greater than placebo over a year,A combination of phentermine and topiramate (Qsymia) is also somewhat effective.

SURGERY

- The most effective treatment for obesity is **bariatric surgery.**
- Surgery for severe obesity is associated with long-term weight loss and decreased overall mortality.
- One study found a weight loss of between 14% and 25% (depending on the type of procedure performed) at 10 years, and a 29% reduction in all-cause mortality when compared to standard weight loss measures.
- However, due to its cost and the risk of complications, researchers are searching for other effective yet less invasive treatments

AYURVEDIC PERSPECTIVE OF OBESITY

- **Sthoulya term has been taken from Sthoola which means bulky.**
- **The opposite of Sthoola is Krisha which means lean**
- **Sthoulya as disease has no place in Charaka Chikitsa.**
- **Sthoulya however has been referred under Ashtanindita Adhyaya by Charaka, this is why this has gained some recognition as an unhealthy or amorbid state, hence treatable**

(IJRMST) 2018, Vol. No. 6, Jul-Dec **e-ISSN: 2455-5134, p-ISSN: 2455-9059**

REFERENCES OF STHOULYA IN AYURVEDA TEXTS

इह खलु शरीरमधिकृत्याष्टौ पुरुषा निन्दता भवन्ति तद्यथा--अतिदीर्घश्च अतिह्रस्वश्च अतिलोमा च अलोमा च अतिकृष्णश्च अतिगौरश्च अतिस्थूलश्च अतिकृशश्चेति ३

Nanatmaja Vikara of Sleshma **श्लेश्मविकारांश्च--अतिस्थौल्यं च।**Ch.Su.20/24

Santarpana Nimittaja**अतिस्थौल्यं** Ch.Su.23/5

Ati Nindita **इह खलु शरीमधिकृत्याष्टौ निन्दिताः पुरूषा खवन्ति; तद्यथा**Ch.Su.21/– **अतिस्थूलं**

Brihanajanya

Bahudoshajanya **स्थौल्य---तस्मै संशोधनं हतम।** Ch.Su.16/13-16
Ka.Khi.7/16-18

Complication of Meda Dusha**तमतिस्थूलं क्षुद्रश्वास---** Su.Su.24/13
प्राप्यं पंचत्वंमुपयाति

Medovaha Srotas
Viddha Lakshana **तत्र विद्धस्य---स्थूलं---।।** Su.Sa.9/12

Rasa Nimittaja disorder **रसनिमित्तमेव स्थौल्यं---**Su.Su.15/32

Physical condition of the body**कृशस्थूलात्तु पुजितः**Su.Su.35/40

ATISTHULYA

The Atisthula person suffers the following eight defects

अतिस्थूलस्य तावदायुषो ह्रासो जवोपरोधः कृच्छव्यवायता दौर्बल्यं दौर्गन्ध्यं स्वेदाबाध क्षुदातिमात्रं पिपासातियोगश्चेति भवन्त्यष्टौ दोषाः॥

(Ch.su.21/4)

Decrease life span, loss of enthusiasm or encourage (debility), impotency&difficulty in intercourse, weakness of the body, foul smell of the body, foul smell of skin, excessive sweating, voracious appetite, excessive thirst.

ATISTHAULYA NIDANA SAMPRAPTI (Etiopathogenesis)

मेदसावृतमार्गत्वाद्वायुः कोष्ठे विशेषतः चरन् संधुक्षयत्यग्निमाहारं शोषयत्यपि ॥ तस्मात स शीघ्रं जरयत्याहारं चातिकाङक्षति विकारांश्चाश्नुते घोरान् कांश्चितकालव्यतिक्रमातक्रमात्। एतावुपद्रवकरौ विशेषादग्निमारूतौ। एतौ हि दहतः स्थूलं वनदावो वनं यथा ॥ मेदस्यातीव संवृद्धे सहसैवानिलादयः। विकारान् दारूणान् कृत्वानाशयन्त्याशुजीवितम् ॥मेदोमांसातिवृद्धत्वाच्चलस्फिगुदरस्तनः ।अयथोपचयोत्साहो नरोऽतिस्थूल उच्यते ॥

(Ch.su.21/5-9)

The increased Medas obstructs the srotasas leading to pratiloma gati of vayu inside the kostha which pervades in the kostha and aggravates the kosthagni, dries the ahara inside the kostha leading to early and fast digestion of ahara, due to which the demand for ahara consumption increases. In such situation if such person does not receive food properly or he delays in intake of ahara leads to many complications and severe diseases. These both conditions are further responsible for complications of agni and vayu. The way vayu and fire burns the forest in similar way the medasvi person becomes prone for severe complications by disturbed vayu and agni.

UPADRAVA

The following complications have been mentioned

मेदस्यतीव संवृद्धे सहसैवानिलादयः।
विकारान दारूणान कृत्वा नाशयन्त्याशु जीवितम।

आयुषोह्रासो जवोपरोधः---(Ch.Su.21/5-8)

तमतिस्थूलं क्षुद्रश्वास (Su.Su.15/32)

प्रमेह पूर्वरूपैः स्थौल्योपद्रवान्यैरपिश्लेश्मरक्तमांसविकार----(As.Su.19/7)

अतिस्थौल्यातपचिमेहज्वरोभगन्दरान।
काससंन्यासकृच्छामकुष्ठादीननतिदारूणान।। (Ah.Su.14/21)

- Prameha, Pramehapidika, Jwara, Vidradhi,Urustambha, Shwasa, Apachi
- Bhagandara,Apachi, Kasa,Sanyasa, Kustha,Visarpa
- Atisara, Arsha,Shlipada,Kamala, Mutrakricchra, Ajirna

(IJRMST) 2018, Vol. No. 6, Jul-Dec **e-ISSN: 2455-5134, p-ISSN: 2455-9059**

Treatment protocol for obesity

Chikitsa Sutra:

संशोधनं संशमनं निदानस्य च परिवर्जनम् ।च वि७/३०

वातघ्नान्यन्नपानानि श्लेष्ममेदोहराणि च ।

रूक्षोष्णा बस्तयस्तीक्ष्णारूक्षाण्युद्वर्तनानि च ।। च सू 21/21

गरू चापतर्पणं चेष्टं स्थूलानां कर्षणं प्रति । च सू 21/20

तत्र मेदोनिलश्लेष्मनाशनं सर्वमिष्यते। (AH.Su.14/21)

काश्यर्मेवं वरं स्थौल्यात नहि स्थूलस्य भेषजम ।।A.H Su. 31)

गुडूची भद्रमुस्तानां प्रयोगस्त्रैफलस्तथा। तक्रारिष्टप्रयोगश्च प्रयोगो माक्षिकस्य च॥ विडङ्ग नागरं क्षारः

काललोहरजो मधु।.....(Ch. Su. 21/21-22)

शिलाजतुगुग्गुलुगोमूत्रत्रिफलालोहरजोरसाञ्जनमधुयव मुद्गकोरदूषकश्यामाकउद्दालकादीनां

विरूक्षच्णछेदनीयानां च द्रव्याणां विधिवदुपयोगो विरूक्षणछेदनीयानां इति विरूक्षणं मेदोघ्नं छेदनीयं स्रोतोविशोधनीयम्।

अतिस्थूलः स्मृतो योज्यं तत्रान्नं मारूतापहम्।श्लेष्ममेदोहरं यच्च कुलत्था यवकाःयवा ः।

जूर्णश्यामाकमुद्गाद्याः पानेऽरिष्टो मधूदकम्॥मस्तु तक्रं च तीक्ष्णोष्णं रूक्षं छेदि च भेषजम्।

चिन्ताव्यवायव्यायामशोधनास्वपनं भजेत्।देहापेक्षी तथा रूक्षं स्नानमुद्वर्तनादि च। (अ.सं.)

पाचनं दीपनं क्षुतृट्व्यायामातप मारूताः(A. S. Su. 24/9)

रूक्ष उद्वर्तन– उद्वर्तनं कफहरं मेदसः प्रविलायनम्।

प्रजागरं व्यवायं च व्यायामं चिन्तनानि च ।

स्थौल्यमिच्छन परित्यक्तुं क्रमेणाभिप्रवर्धयेत ।।च सू 21/28

The drugs, food stuffs or beverages having properties like Vataghna, Kaphaghna & Medoghna should be applied in the management of Obesity.

The use of Guru & Apatarpana drugs as well as food stuffs is advisable in the treatment of obese persons….

Use of Ruksha, Ushna basti & herbal scrubs (Udvartanam) has also been advocated by Acharya Charaka…..

There is no treatment of Sthaulya and hence thin body is always better than obesity.

Other Medications very useful in the treatment of Obesity –

- Guduchi
- Bhadramusta
- Triphala
- Takrarishta
- Makshik (Honey or?? Suvarnamakshika)
- Vidanga
- Nagaram(Shunthi)
- Kshara
- Kalaloha (Tikshna Loha)
- Makshika (Repeated in the shloka)
- Yava & Amalaka Churna
- Bilvadi Panchamula Kwath + Honey
- Shilajatu with Agnimantha Swarasa
- ShilajitGuggulu Gomutra
- Triphala Loharaj Rasanjana

The patient who wish to get rid of Obesity should increase the following activities step by step….

- **Staying up at night**
- **Sexual Intercourse**
- **Exercise**
- **Thinking**

- **AUSHADHA SEVANA KALA:**According to Ashtanga Samgraha, Pragabhakta Kala i.e. administration of medicine before meal is insisted for Krishkarana purpose. It has been further elaborated by Sharangadhara and advised to take Lekhana drug on empty stomach in early morning and before a meal. So, for the treatment of Sthaulya medicine should be administered before meal and ideally in the morning and empty stomach.

LEKHAN BASTI Lekhan Basti is highly recommended for management of Sthaulya by ancient Ayurvedic physicians. Lekhan or Karshana Basti helps to remove abstraction of Meda, Kapha and Kleda from Srotas by its veerya and helps to alleviate vitiated Vata and normalize the function of Agni and Vayu.

ERANDPATRAKSHAR PRAYOGA -

क्षारं वातारिपत्रस्य हिंगुयुक्तं पिबेन्नरः।मेदोवृद्धिविनाशायं .....ll Bha.Rat.39/20

Erandapatra Kshar - 1 gm.

Ghritabharjit Hingu - 500 mg

Vehicle- Warm water

Diet indicated in the treatment of Obesity –

- MudgaKulatthChakramudgaka(Wild Variety)Aadhaki
- Patol Prashatik PriyanguShyamakaYavaka(Oat)
- Yava(Barley)JurnakKodrava

Any recipe made from, any of the above ingredients should be seasoned with Amalaki…..

Also, treatment of Sthaulya is mentioned at different places in Charaka Samhita with the following drugs and preparations areadvocated as Medonasaka and Lekhana.

- ❖ Karshana Yavagu of Gavedhuka
- ❖ Lekhaniya Mahakashaya
- ❖ Bibhitaka
- ❖ Venuyava &
- ❖ Madhudaka

In **SUSHRUTA SAMHITA** administration of Virukshana and Chhedaniya Dravya especially Shilajatu, Guggulu, Gomutra, Triphala, Loha Raja, Rasanjana and Madhu in proper dose and duration are advised (Sutrasthana.15/38).In 38th chapter of Sutrasthana various groups drugs of are mentioned as Medonashaka

- ➢ **Varunadi GanaSalasaradi GanaRodhradi Gana**
- ➢ **Arkadi Gan Mushkadi GanaTrayushnadi Gana**

In **ASTANG HRIDAYA the** preparations added for the management of Sthaulya

- ✓ Gomutra Haritaki Rodhrasava
- ✓ Navaka Guggulu Amruta Guggulu
- ✓ Vardhamana Bhallataka Rasayana

Bhaishajyaratnavali has mentioned the remedies for Medohara purpose like…

….

- Chavyadi SaktuTriphaladya Churn Erandpatra Kshara
- Badaripatra Pey Amritadi Guggul Dashanga Guggulu
- Tryushnadyam Loha Lauha Rasayana & Lauharishta etc.

Antah parimarjana	**Bahih parimarjana**
Vaman :	**Udavartana :**
Madan phala yoga	1. Triphala
	2. Kulattha
Virechana :	3. Lodhra
Trivrita yoga, Shudha kalpa	4. Vacha
	Avagaha :
Niruha basti :	1. Dashamool kwath
Lekhana basti	2. Varunadi kwatha, etc.
Anuvasan basti :	**Parisheka :**
Triphala tail	1. Varunadi kwatha
Sarsava Tail	2. Takra dhara
	3. dashamoola kwatha etc.
Nasya :	
Triphala tail	**Lepa kalpana (durgandha nashak)**
	1. Vasapatra swarasa & shankha bhasma
	2. Bilvapatra “
	3. Chinchapatra “
	4. Dhaturapatra “
	5. Haritakyadi pralepa
	6. Haritaladi yoga
	7. Samudrafena churna & mocharasa
	8. Rukha dravya like chana, kulathi

SHAMANA CHIKITSA : (BHARAT BHAISAJYA RATNAKARA)

Gugglu kalpana

- Amrutadi gugglu Dashanga Navaka “
- Yograj Panchtikta Triphala “
- Trayushanadi

Taila kalpana

1. Triphala taila 2 Mahasugandhi taila 3Vrundatriphaladya taila

Arishta kalpana

1. Loharishta2Takrarishta

Loha kalpana

- Loha rasayan Vidangadya lohaTrayushanadya loha
- Vadavagni loha Navayas lohaLoha bhasma

Kwatha kalpana

- Agnimantha kwatha & shilajit Bilvadi kwathaTriphala "
- Varunadi Manjishtadi"Ushnodaka

Other sthaulyahara yogas

- Arand ksharChandraprabha vati Vyosadya saktu
- Bruhatpanchmol & rasanjanaGomutra haritaki
- Badripatra sidha peyaVyoshadya santarpana

Rasa drugs

1. Trimurti rasaSthularajgajkesari Medodhwansiras Mohadivajrapatrasa
2. Vadvagnirasa Rasa bhasma Gandhaka yogaMedohararasa

PATHYA & APATHYA

Ahara :

Ahara Varga	Pathya	Apathya
1.Suka Dhanya (Cereal grain)	Puran Shali, Kodrava, Shyamak, Yava, Priyangu, Laja, Nivara, Koradushaka, Jurna, Prashatika, Kanguni	Godhum Naveen Dhanya (Shali)
2.Shami Dhanya (Pulses)	Mudga, Rajamasha, Kulatha, Chanaka, Masur, Adhaki, Makusthaka	Masha Til
3.Shaka Varga (Vegetables)	Patol, Patrashaka, Shigru, Vruntaka, Katutikta Rasatmak etc. Vastuka, Trapusha, Vartaka, Evaruka, Adraka, Mulaka, Surasa.	Kanda Shaka, Madhura, Rasatmak
4. Phala Varga (Fruits)	Kapittha, Jambu, Amalki, Ela, Bibhitaki, Haritaki, Maricha, Pippali, Erand Karkati, Ankola, Narang, Bilvaphala.	Madhura Phala
5.Drava Varga	Honey, Takra, Ushnajala, Tila & Sarshapa Tail, Asava, Arishta, Surasava, Jeerna Madhya	Milk Preparations, (Dugdha, Dhadhi, Sarpi) Ikshuvikara
6.Mamsa Varga	Rohita Matsya	Aanupa, Audaka, Gramya Mamsa Sevana

Vihara :

Pathya	Apathya
Shrama	Sheetal Jala Sevan
Jagarana	Diwaswapa
Nitya Bhramana	Avyavaya
Ashwa Rohana	Avyayam
Hastyava Rohana	Ati Ashana
Vyavaya	Sukha Shaiya

Mansika bhava :

Pathya	Apathya
Chinta	Nitya Harsha
Shoka	Achintana
Krodha	Manso Nivrutti

LATEST RESEARCHES

MUSTA-*C. rotundus*

Stimulates lipolysis in 3T3-F442 adipocytes suggesting that this medicinal plant contains activators of *β*-adrenoreceptors (AR). The binding assay performed on the rat *β*3-AR isoform, known to induce thermogenesis, demonstrated that *C. rotundus* tubers extract can consistently and effectively bind to this receptor. These data suggest that the effect on weight gain exerted by *C. rotundus* tubers extract may be mediated, at least partially, through the activation of the *β*3-AR

HONEY

Certain hormones such as leptin, ghrelin and peptide YY are recognized for their role in modulating satiety, appetite, calorie intake, and energy expenditure and body weight. At the moment, only very few studies have investigated the effect of honey on appetite-regulating hormones - leptin, ghrelin and peptide YY. In rats, a recent study reported that the levels of leptin were considerably lower in rats administered honey than in those fed sucrose. Similarly, compared with sucrose-containing diet, honey was reported to delay postprandial ghrelin release and enhance total peptide response in healthy human subjects. Even though the data are still limited, fructose in honey may contribute to the modulating effect of honey on appetite-regulating hormones.

Although the mechanisms by which honey decreases weight gain are still not fully understood, findings from some recent studies suggest that honey might reduce weight gain via modulation of appetite-regulating hormones such as leptin, ghrelin and peptide YY. Furthermore, based on findings which showed lack of significant difference in food efficiency ratio (FER) in sucrose- and honey-fed rats, reduced food intake might contribute considerably to reduce weight gain in honey-fed rats. Fructose and oligosaccharides which are present in honey might also contribute to reduced body weight and food intake in honey-fed rats. Besides, available evidence indicates that honey might reduce body weight through reduced digestion and absorption of protein and increased fecal nitrogen output. Considering the overwhelming evidence which indicates that honey increases plasma antioxidants and ameliorates oxidative stress in tissues, the antioxidant effect of honey might also contribute to reduced weight gain.

GUGGULU

Guggulsterone, the bioactive constituent of guggul, has been identified as an antagonist at the nuclear receptor farnesoid x receptor (FXR) (Urizar et al. 2002; Wu et al. 2002), a key transcriptional regulator for the maintenance of cholesterol and bile acid homeostasis (Ory 2004; Kalaany and Mangelsdorf 2006; Cai and Boyer 2006). A recent study demonstrated that guggulsterone up regulates the expression of the bile salt export pump (BSEP), a rate-limiting efflux transporter for eliminating cholesterol metabolites bile acids from the liver. Such up regulation is possibly mediated through the activating protein 1 (AP-1) signaling pathway (Deng et al. 2007). The FXR antagonism and enhanced BSEP expression have been proposed as possible mechanisms for the hypolipidemic effect of guggulsterone).

VIDANGA -*Embelia ribes*

Male Wistar rats were fed HFD for 28 days to induce obesity. ERE (*Embelia ribes* ethanol extract) (100 mg/kg) administered orally to HFD fed rats for 21 days. Changes in body weight gain, body mass index (BMI), blood pressure, serum parameters, and myocardial oxidative stress parameters were measured. ERE (*Embelia ribes* ethanol extract) showed a preventive effect on body weight gain, visceral fat accumulation and elevated blood pressure. The extract treatment elicited a significant reduction in serum levels of leptin by 45%, insulin by 37%, glucose by 28%, total cholesterol by 18%, and triglycerides by 24% while HDL-C level increased by 31%. Furthermore, ERE treatment decreased the myocardial lipid peroxidation and increased antioxidant levels in obese rats. These findings demonstrated the anti-obesity potential of ERE, possibly through suppression of body weight gain, lipid lowering action, improvement in insulin and leptin sensitivity and increased antioxidant defense.Anti-obesity effect of standardized ethanol extract of *Embelia ribes* in murine model of high fat diet-induced obesity