



## Review Article

### Cure Of Obesity In Homeopathy: An Approach To Control A Global Epidemic

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#### ABSTRACT

*Obesity is a complex condition, associated with a wide range of serious health issues. In contemporary society, body size is an important part of a person's self-representation. There is presently a global epidemic of obesity in all age groups and in both developed and developing countries and is responsible for an important burden for the health systems and increase in deaths. High calorie intake in diet due to increased consumption of refined sugars, sweetened beverages, vegetable oils, chunk and fast food and lack of physical activity, absence of play ground, and sedentary life style are all the causes of obesity. Excess adiposity also known as obesity and excess body weight are associated with increased association with different types of diseases like type 2 diabetes, dyslipidemias, cardiovascular disease, hypertension and cancer. Lifestyle changes are difficult and long-term weight management is associated with a high risk of failure. Homeopathy has been used to treat several diseases, and this study aimed to review the effect of homeopathy in treatment of obesity.*

**Keywords:** *Obesity; Sedentary lifestyle; Dyslipidemias*

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#### INTRODUCTION

Obesity is a pandemic disease and threatens public global health.<sup>1</sup> It is defined as a complex, multifactorial disease that results from the interaction between the genotype and the environment. As it has been described, it is the result of the integration of various factors such as the environment, culture, physiology, metabolism and genetics.<sup>2</sup> It 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.<sup>3,4</sup>

The World Health Organization (WHO) defines obesity as abnormal or excessive fat accumulation that may impair health.<sup>5</sup> According to estimates of the International Obesity Task Force, 1,7 billion people are exposed to health risks related to body weight, while the increase in Body Mass Index (BMI) is responsible for more than 2.5 million deaths annually, which is expected to double by 2030.<sup>6,7,8</sup>

Body mass index (BMI) is used to define obesity. BMI is the ratio of a person's weight in kilograms and the square of his height in

meters (kg/m<sup>2</sup>).<sup>9</sup> Increase in BMI by 5- unit each leads to 34% CVD mortality in men and 29% in women.<sup>10</sup> Higher BMI indicates higher risk of Diabetes mellitus, hypertension and dyslipidemia.<sup>11</sup>

Obesity-related disease risk is also increased in individuals with normal weight and BMI who have an increased waist circumference (WC): a waist circumference of more than 102 cm (40 inches) in men and more than 88 cm (35 inches) in women.<sup>12</sup>

### Diseases associated with obesity

There is increased association of obesity and diseases. These include Diabetes, Hypertension, Osteoarthritis, Pancreatitis, Cholelithiasis and dyslipidemia which are discussed below.<sup>13</sup>

**Type1 Diabetes**-There is overall evidence for an association between childhood obesity, higher BMI, increased risk of subsequent type1 diabetes.

**Type2 diabetes**- insulin resistance and hyperinsulinaemia. Weight loss associated with improvement. Excess insulin retain sodium, expansion of blood volume, production of excess nor epinephrine ,smooth muscle proliferation - hallmark of Hypertension.<sup>14,15,16</sup>

**Osteoarthritis**- marked obesity predisposes to degenerative joint disease. Cumulative effect of wear and tear on joint due to obesity, greater the burden of fat greater the trauma to joints with time.<sup>17</sup>

**Gall stone**- 6 times more common in obese than non obese. Increased total cholesterol, increased biliary excretion and cholesterol in bile, cholesterol rich gall stones.<sup>18</sup>

**Nonalcoholic steatohepatitis**- adolescents and adult who are obese and have type2 diabetes. Fatty change accompanied by inflammation lead to fibrosis.

**Dyslipidemia**- increased risk of CAD due to hyper TG, Low HDL Syndrome X-distinctive metabolic syndrome-abdominal obesity, insulin resistance, hyper TG, low HDL, HTN, increased risk of CAD.

**Thrombosis**- increases the risk of ischaemic stroke. Abdominal obesity is associated with increased risk of thrombosis.<sup>19</sup>

**Cancer**- increased BMI and mortality in cancer esophagus, colon, rectum, liver.<sup>20,21</sup>

**Hypoventilation syndrome**- respiratory anomalies, increased sleep both at night and

day. Apnic pauses during sleep, polycythaemia and eventually Rheumatic Heart Failure.<sup>22</sup>

### Obesity & Systemic Disease Association

**GIT**-increased gall stone, pancreatitis, Gastrointestinal reflux disease, Nonalcoholic fatty

liver disease, abdominal hernia.<sup>23,24</sup>

**Endocrine & Metabolic system**- Increased type 2 diabetes, insulin resistance, IGT, dyslipidemia.

**Cardiovascular system** -increased thromboembolism, Hypertention, Coronary artery disease, Chronic heart failure, Pulmonary hypertention, Asthma.<sup>25,19</sup>

**Female Ginital tract/gynaecological**- Menstrual abnormality, infertility, carcinoma.<sup>26,27</sup>

**Eye**-Cataract

**Musculoskeletal system**-Osteoarthritis, Gout, Low back pain

**Postoperative**-Atelactasis, Pneumonia, Deep vein thrombosis, Pulmonary embolism

**Genitourinary**-Stress urinary incontinence.<sup>28</sup>

### Pathogenesis of obesity

The pathogenesis of obesity is complex and involves humoral and neuronal mechanisms that control appetite and satiation. These stimulations respond to genetic, nutritional, environmental and psychological signals and triggers centers in hypothalamus. The neurohumoral mechanism that regulate energy balance is divided into three components.

The peripheral or afferent systems that create signals from various sites. These include leptin and adiponectin that are produced by fat cells, ghrelin from stomach and peptide YY from Ileum and colon and insulin from pancreas. Leptin (meaning thin in Greek Leptos) is a 16kd hormone synthesized by fat cells is the product of ob gene. The leptin receptor (OB-R) is the product of diabetic gene (dg) and belongs to type I receptor that includes gp130, Granulocyte CSF, IL 6, 2 receptors. Genetically deficient mice in leptin fail to sense fat stores, overeat and gain weight. Adiponectin stimulate fatty acid oxidation causing a decrease in fat mass. In addition to leptin and adiponectin adipose tissue continuously produces cytokines like TNF, IL 1,6,18, chemokines and steroid hormones that create a chronic subclinical inflammatory state (Asymptomatic) that includes high level of

CRP. Ghrelin is produced in stomach and in arcuate nucleus of hypothalamus and is the only known gut hormone that increases food intake (orexigenic effect).

The arcuate nucleus in the hypothalamus process and integrate signals to generate different signals through two subsets. The first order of neurons include POMC (Promelanocortine) and CART (Cocaine and amphetamine regulated transcripts neurone and second order neurons including Neuropeptide Y and AgRP (Agouti related peptide). The effector system carries signals generated in the second order of neurons of hypothalamus to control food intake and expenditure. POMC and CART increases energy expenditure and weight loss by producing alpha melanocyte stimulating hormone (MSH) and the activation of melanocortin receptors 3 and 4 (MC3/4) in second order of neurons. NYP/Ag RP neurons promote food intake and weight gain through activation of Y1/5 receptors in secondary neurons.<sup>29</sup>

#### **The Potential Role Of Homeopathy In The Treatment Of Obesity**

Dixit conducted *in vitro* study and found that Cholesterinum 3X-trituration (a homeopathic preparation) lowers the increased VLDL-cholesterol levels to an extent of 32 percent within 48 hour while total cholesterol and phospholipids were significantly reduced (62 percent and 45percent respectively,  $P < .001$ ). Inhibition of free fatty acid-mobilization from the adipose tissue results in decreased triglyceride formation and thus low levels of VLDL-cholesterol, a major risk factor.<sup>30</sup>

Maiti et al investigated the remedial effect of homeopathic drug *S jambolanum* on carbohydrate and lipid metabolic disorders on streptozotocin induced diabetic rat. The result indicated that the homeopathic drug *S jambolanum* (mother tincture) has a protective effect on diabetic induced carbohydrate and lipid metabolic disorders in STZ-induced diabetic animal.<sup>31</sup>

Korukanti conducted a study to evaluate antiobesity activity of *Fucus vesiculosus* in 48 Wister rats. TC, TG, LDL, VLDL, and HDL were measured on 0, 21 and 43 days. *Fucus vesiculosus* treatment prevented the rats from becoming obese and the biochemical and

physical parameters were maintained to normal levels.<sup>32</sup>

Nandi conducted a study to evaluate dose dependent effect of *Baryta carbonicum* and *Baryta muriaticum* in homeopathic trituration on experimentally induced high serum lipid concentration in 54 Chickens. Concentration of various serum lipids was experimentally increased in chickens. Feeding *Baryta carbonicum* and *Baryta muriaticum* resulted in reduction of serum TC, phospholipid, TG, total lipids, and total C/P ratio.<sup>33</sup>

CCRH conducted a clinical study to evaluate the efficacy of homeopathic medicines in lipoproteinemia sample size was 322. Out of 293 cases, 77 cases (26%) have shown marked improvement, 113 cases (39%) moderate improvement, 100 cases (34%) mild improvement, and 3 cases (01%) were having no improvement. It has also been observed that the medicines are not only effective in relieving their clinicopathological findings but also in relieving their associated complaints and restoring the general health of patients.<sup>34</sup>

Pay conducted a clinical study to evaluate role of homeopathy in hypercholesterolemia. 57 patients were assessed. Assessment of laboratory parameters of serum cholesterol values *Calcarea carbonica* 6, *Phosphorus* 6, and *Thuja* 30 combined in one bottle and then dispense in twice daily dose of 2 pills for 8-10 weeks in 36 cases and from 10 to 12 weeks in 21 cases. Values of serum cholesterol are reduced below 250 mg% in all patients. Author followed patients for 2 years with investigations at 6 months interval; normal levels were maintained throughout the study period.<sup>35</sup>

Homeopathy has been used to treat several diseases, and this study aimed to evaluate the effect of *Hypothalamus* on the metabolic parameters of animals fed a hypercaloric diet. Thirty animals

were treated with a hypercaloric diet and water *ad libitum* for 50 days and then, were divided into three groups (n=10); G1: treated with hypercaloric diet and water mixed with *Hypothalamus*

30CH *ad libitum*; G2: treated with hypercaloric diet and water mixed with *Hypothalamus* 15CH

*ad libitum*; G3: Control group that received hypercaloric diet and water *ad libitum*. Results show that there was no interference of *Hypothalamus* in the initial and final weight, in the percentage of weight gain, Lee's index, glycemia, and total cholesterol, but there was a reduction in the thoracic and abdominal circumference as well as in the abdominal fat in the treated groups. Increase in the levels of triglycerides was also observed. This concluded that *Hypothalamus* may interfere in some metabolic parameters but other studies should be performed with the aim of establishing the doses and period of administration.<sup>36</sup>

## CONCLUSION

Obesity is a serious global public health threat. In order to build up a comprehensive profile of its effects, it is crucial to have easy-to-use yet reliable measures that allow for classification of individuals into distinct risk groups. Obesity is a severe pathologic situation that causes both morphological and functional disorders in the human body and is associated with a high risk of morbidity and mortality. Obesity affects every aspect of an individual's life and has deleterious effects, not only on health and self-esteem but also on the socio-economic status of the patient. At the same time, each government spends a huge amount of money for the treatment of the different diseases caused by obesity. Seeking medical help is an essential step because it helps to reduce morbidity and mortality rates among obese individuals.

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