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A Potential Homoeopathic Solution to the Worldwide Pandemic of Obesity

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ABSTRACT

Many major health problems are linked to obesity, making it a complicated illness. In today's culture, how a person presents themselves is heavily influenced by their physical size. The current worldwide pandemic of obesity affects people of all ages and is a major contributor to rising health care costs and mortality rates in both industrialized and developing nations. Obesity is caused by a sedentary lifestyle, an excessive calorie intake from foods and drinks including refined sweets, sodas, fruit juices, and fast food, as well as by a lack of exercise and a playground. Type 2 diabetes, dyslipidemias, cardiovascular disease, hypertension, and cancer are among the many disorders linked to excess adiposity, obesity, and excess body weight. There is a significant probability of failure when it comes to long-term weight control and making adjustments to one's lifestyle. This research sought to assess the impact of homoeopathy in treating obesity, one of numerous conditions that have been treated using homoeopathy.

Keywords: *Obesity; Sedentary lifestyle; Dyslipidemias*

INTRODUCTION

One of the greatest dangers to public health throughout the world is the epidemic of obesity.¹ It is characterized as a complicated illness with several factors that arises from the interplay of genetics and environmental factors. Everything that has been said about it is the end product of a complex interplay of environmental, cultural, physiological, metabolic, and genetic elements.² This medical illness is characterized by the accumulation of extra body fat to a point where it poses a threat to health, perhaps resulting in a shorter life expectancy and/or an increase in health issues.^{3,4} Obesity is defined by the World Health Organization (WHO) as an abnormal or excessive buildup of fat that might have negative effects on health.⁵ The International Obesity Task Force estimates that 1.7 billion people are at risk for health problems associated with obesity, and that over 2.5 million people die each

year as a result of a rise in body mass index (BMI). that is anticipated to double by the year 2030.^{4, 6, 7, 8} Obesity is indicated by a person's body mass index (BMI). Body mass index (BMI) is calculated as the square of a person's height divided by his or her weight in kilograms. quantities in kilograms per square meter.^{3,4} 34% of men and 29% of women die from cardiovascular disease for every 5 units increase in body mass index.¹⁰ Diabetes mellitus, hypertension, and dyslipidemia are all more likely in those with a higher body mass index (BMI).¹¹ Even among people who are of a healthy weight and BMI, those with a waist circumference (WC) that is too large—greater than 102 cm (40 inches) for men and more than 88 cm (35 inches) for women—are at a higher risk of developing obesity-related diseases.¹²

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.¹³

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.^{14,15,16}

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.¹⁷

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.¹⁸ **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.¹⁹

Cancer- increased BMI and mortality in cancer esophagus, colon, rectum, liver.^{20,21}

Hypoventilation syndrome-respiratory anomalies, increased sleep both at night and day. Apnic pauses during sleep, polycythemia and eventually Rheumatic Heart Failure.²²

Obesity & Systemic Disease

Association GIT-increased gall stone, pancreatitis, Gastrointestinal reflux disease, Nonalcoholic fatty liver disease, abdominal hernia.^{23,24}

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

Cardiovascular system - increased thromboembolism, Hypertension, Coronary artery disease, Chronic heart failure, Pulmonary

hypertension, Asthma.^{25,19}

Female Genital tract/gynaecological-

Menstrual abnormality, infertility,

carcinoma.^{26,27}

Eye-Cataract

Musculoskeletal system-

Osteoarthritis, Gout, Low back pain

Postoperative-Atelactasis,

Pneumonia, Deep vein thrombosis,

Pulmonary embolism **Genitourinary-**

Stress urinary incontinence.²⁸

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 (Pomelanocortine) and CART (Cocaine and amphetamine regulated transcripts) neurons 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. NPY/AgRP neurons promote food intake and weight gain through activation of Y1/5 receptors in secondary neurons.²⁹

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 45 percent 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.³⁰

Maiti et al investigated the remedial effect of homeopathic drug *S jambolanum* on carbohydrate and lipid metabolic disorders on streptozotocin induced diabetic rat. The results 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.³¹

Korukanti conducted a study to evaluate antiobesity activity of *Fucus vesiculosus* in 48 Wistar 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.³²

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.³³

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.³⁴ 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.³⁵

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.³⁶

CONCLUSION

Globally, obesity poses a significant risk to public health. Having accurate and easy-to-use measurements that categorize people into different risk categories is critical for developing a complete picture of its impacts. There is a strong correlation between obesity and an increased risk of illness and death, as well as morphological and functional abnormalities in the human body. Obesity has far-reaching consequences that harm a person's health, self-esteem, and socioeconomic standing, among other areas of life. Simultaneously, healthcare expenditures related to obesity-related illnesses account for a substantial portion of each government's budget. If we want to lower the morbidity and death rates among fat people, we must take the necessary step of seeking medical care.

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