**SIDDHA HERBS ON ANTI-OBESEITY TREATMENT**

Dr. D. S. Lavanya, M.D(s)*

Pediatric Siddha Physician, Chennai, Tamilnadu.

*Corresponding Author: Dr. D. S. Lavanya
Pediatric Siddha Physician, Chennai, Tamilnadu.

**ABSTRACT**

Obesity become a major health problem worldwide, affecting people across all ages, sex and races, and its prevalence has been increasing at an alarming rate currently, pharmacologic agents available to treat obesity carry high costs and serious side effects. Herbal products used in the siddha medicinal system have been applied effectively in clinical practice, hence this may be potential targets in the development of future cost effective anti-obesity drugs with less side effects.

**KEYWORDS:** Anti-obesity, weight loss, siddha herbs and mechanism, parts of herbs.

**INTRODUCTION**

Characterized as abnormal or excessive fat deposition in adipose tissue and other internal organs such as liver, heart, and skeletal muscle, obesity is a chronic disorder of carbohydrate and fat metabolism and poses a risk to the health and well-being of humans. It is measured by the body mass index (BMI), a ratio of height (in meters) to weight (in kilograms). BMI is a criterion used to classify a person as underweight, normal, overweight, or obese. A BMI ≥ 25 kg/m² is considered overweight, while a BMI ≥ 30 kg/m² are considered obese.

Overweight or obesity is a major risk factor for many chronic diseases, including diabetes mellitus, cardiovascular diseases, and cancer.

There are many etiologic factors for this, including genetic, metabolic, behavioral and environmental variables. The rapid increase in the prevalence of overweight and obesity suggests that behavioral and environmental influences are predominant, rather than biological changes.

Due to the high morbidity and mortality, the management and treatment of obesity requires numerous resources including pharmacologic agents, balanced diets and physical training costs.

There are 5 distinct mechanisms or strategies for weight loss:
1) Reducing food intake either by augmenting the inhibitory effects of anorexigenic signals or factors that suppress food intake or by blocking orexigenic signals or factors that stimulate food intake.

2) Blocking nutrient absorption in the alimentary canal, in particular, fat.

3) Increasing thermogenesis by uncoupling fuel metabolism from the generation of ATP, thereby dissipating food energy as heat.

4) Modulating fat or protein metabolism or storage by regulating fat synthesis/lipolysis or adipose differentiation/apoptosis. Enhanced fat or protein turnover might reduce body weight by affecting either food intake or energy expenditure.

5) Modulating the central controller regulating body weight by (1) altering the internal reference value sought by the controller or (2) modulating the primary afferent signals regarding fat stores analyzed by the controller. This approach would have the potential advantage of forcing the endogenous controller to regulate multiple pathways of energy balance and minimize restitution.[1]

Drugs commonly used to control obesity are categorized as follows:

**Serotonergic agents:** Fluoxetine, dexfenfluramine, fenfluramine.

**Noradrenergic agents:** Amphetamine, phendimetrazine, phentermine, diethylpropion, pseudoephedrine, phenylpropanolamine, mazindol.

**Noradrenergic and Serotonergic agents:** Sibutramine.

**Drugs acting on the gastrointestinal system:** Orlistat (pancreatic lipase inhibitor).[2]

**Centrally acting drugs** (anorectic or appetite suppressants): sibutramine, rimonabant.
Suppressive effect on food intake (Promotes feeling of satiety): Liraglutide, a glucagon-like peptide-1 analogue (incretin mimetic), exenatide (analogue of the hormone GLP-1), pramlintide (synthetic analogue of the hormone Amylin).

**Herbal Approach**

Herbal medicinal therapy is the unique alternative for overweight or obese people. Thus far, the majority of the various different types of remedies developed are chemical or biochemical agents. The purpose of this review was to examine medicinal plants that may be promising alternative treatments in the management and treatment of obesity.

A literature search was also conducted to investigate medicinal plants with anti-obesity properties. Web- and manual-based literature surveys were conducted to assess the information available on the herbal medicines for obesity treatment.

**Herbal Plants**

Natural medicines used to treat obesity in the traditional Indian medical system include herbal plants from Siddha medicine and chemical constituents with anti-obesity potential.

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Tamil name</th>
<th>Parts used</th>
<th>Actions against Obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Garcinia Cambogia</strong></td>
<td>Kudam puli</td>
<td>Dryed peel from the fruit</td>
<td>The active ingredient in Garcinia cambogia is (-) - hydroxycitric acid, which works against obesity by suppressing appetite and inhibiting lipid synthesis.\textsuperscript{(3,4)}</td>
</tr>
<tr>
<td><strong>Withania somnifera</strong></td>
<td>Amukkara</td>
<td>Root</td>
<td>In human case studies, treatment with Ashwagandha caused significant reductions in serum total cholesterol, triglycerides, LDL, and VDRL levels.\textsuperscript{(5)}</td>
</tr>
<tr>
<td><strong>Cyperus rotundus</strong></td>
<td>Korai Kilangu</td>
<td>Rhizome</td>
<td>Cyperine in the active ingredient working as hypotensive agent, anti-inflammatory, and diuretic (increases urine secretion), as well as reducing fat in the body.\textsuperscript{(6)}</td>
</tr>
<tr>
<td><strong>Picrorhiza kurroa</strong></td>
<td>Kadugurohoni</td>
<td>Root</td>
<td>Improves gallbladder secretions, thus aiding in the digestion and metabolism of fats. It is very effective in regulating fat metabolism in the liver In a study of hyperlipidemic mice on a high-fat diet, daily doses of water extract of Picrorhiza kurroa significantly reduced total cholesterols, triglycerides, and LDL levels after 12 weeks.\textsuperscript{(7)}</td>
</tr>
<tr>
<td><strong>Areca catechu</strong></td>
<td>Pakku</td>
<td>Seed</td>
<td>maintains healthy fat metabolism and reduces the conversion of carbohydrates to fats. It also decreases false hunger and augments exercise results to enhance weight loss and decrease excess body fat. In studies of rats fed on a diet containing cholesteryl oleate, betel nut extracts significantly lowered cholesterol and triglycerides.\textsuperscript{(8,9)}</td>
</tr>
<tr>
<td><strong>Embelia ribes</strong></td>
<td>Vaividangam</td>
<td>Root</td>
<td>it is the most commonly used Ayurvedic herb for weight reduction or lipid-lowering activity Studies report that the lipid-lowering activity of ethanolic extracts of Embelia ribes can potentially help regulate diabetic dyslipidaemia.\textsuperscript{(10)}</td>
</tr>
<tr>
<td><strong>Achyranthes aspera</strong></td>
<td>Naaiurivi</td>
<td>Seeds</td>
<td>reduce blood glucose levels and stimulate the production of thyroid hormones in animal models. Both these actions would help combat obesity and promote weight loss. Moreover, the seeds also have an appetite-suppressant effect.\textsuperscript{(11)}</td>
</tr>
<tr>
<td><strong>Glycyrrhiza glabra</strong></td>
<td>Adhi maduram</td>
<td>Roots</td>
<td>Roots have antihyperlipidaemic and anti-hyper triglyceridaemic properties. In some studies, Glycyrrhiza glabra roots have antihyperlipidaemic and anti-hypertriglyceridaemic properties.\textsuperscript{(12,13)} The anti-obesity activity of Glycyrrhiza glabra appears to be partly mediated by decreasing dietary fat absorption from the intestines.\textsuperscript{(14)} Licorice flavonoid oil (LFO) is a new dietary ingredient in functional foods with potential benefits for overweight subjects.\textsuperscript{(15)}</td>
</tr>
<tr>
<td><strong>Acorus calamus</strong></td>
<td>Vazambu</td>
<td>Roots</td>
<td>Based on animal studies, alcoholic or aqueous extracts of calamus roots and rhizomes decreased cholesterol and triglyceride levels and increased the concentration of HDL during the period of an atherogenic diet.\textsuperscript{(16)}</td>
</tr>
</tbody>
</table>

**Aloe vera**

Studies of hyperlipidemic patients have shown that it has serum lipid-lowering activity.\textsuperscript{(16)}
CONCLUSION
The obesity epidemic in the India has led to a high-priority search for Indian herbal therapies that work effectively. Many Indian and other herbs have been aggressively marketed and used for weight reduction, but only a few products have been evaluated in rigorous trials. Although there is no magic bullet available among Indian herbs that can melt the kilograms of fat in a short period, there is a need to create awareness regarding the evidence for and use of natural products in the form of raw materials, crude extracts, or isolated compounds to promote weight loss and thus control obesity. Traditional Indian medicine is based on good clinical practice and holds much promise in the treatment of obesity. These herbal products from Indian medicinal plants have been widely used to treat obesity, and it is important to understand how these natural medicines from traditional medicinal plants act. Nearly all the medicines currently available to treat overweight and obese patients are chemical or biochemical and greater attention should be directed towards the use and research of herbal medicines of natural origin with minimal side effects in the management and treatment of obesity.

REFERENCES