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# IJAPC

E ISSN 2350 0204

Vol 12 Iss 2 2020

GREENTREE GROUP PUBLISHERS (ggp)



## Childhood Obesity- A Review Article

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### ABSTRACT

Obesity, one of the most rapidly increasing health problem throughout world among children and adolescents impacts the child's health and educational attainment. It has serious short and longterm medical consequences. Dietary imbalance and overnutrition may lead to diseases like obesity. The prevalence of obesity has increased dramatically in the last decades due to sedentary lifestyle.

Ayurveda, the science of life mentioned it as medoroga, involve imbalance of doshas along with disturbances of Agni. In the text of Ayurveda Pathya Aahar, various yoga are described for prevention and management of obesity.

### KEYWORDS

*Sthoulya, Medoroga, Childhood disorder, Overnutrition*



**Greentree Group Publishers**

Received 24/12/19 Accepted 05/02/2020 Published 10/03/2020



## INTRODUCTION

Obesity is defined as an excess of adipose tissue that imparts health risk. A body weight of 20% excess over ideal weight for age, sex and height is considered a health risk.<sup>1</sup> Marked obesity is a serious health hazard and may predispose to a number of clinical disorders and pathological changes such as hyperinsulinaemia, diabetes mellitus, hypertension, hyperlipoproteinaemia, atherosclerosis, cholelithiasis.

According to the Indian journal of endocrinology and metabolism-Somewhere between 5.74%, 8.82% of school children in India are obese. Worldwide, in the year 2000, the international obesity task force (IOTF) declared about 10% children aged 5-17 (about 155 million) were overweight, out of which two to three percent (30 to 45 million) were obese.<sup>2</sup>

### Causes of childhood obesity-

- Imbalance in energy intake and expenditure.
- Some endocrine etiology such as- caushing syndrome, hypothyroidism.
- Genetic syndrome- prader-willi, carpenter and Laurence moon bardetbiedl syndrome.
- Use to certain drug such as- antileptic drug, steroid, estrogen.

- Monogenic disorder such as- leptin deficiency or resistance etc.<sup>3</sup>

**Morphologic features-** associate with increased adipose stores in the subcutaneous tissues, skeletal muscle, internal organs such as the kidneys, heart, liver, and omentum.

### Diagnostic investigation-

- Blood sugar
- Serum cholesterol
- Liver function test
- Thyroid function test
- Growth hormone secretion and function test

**Complication-** associated with significant complication-

- Hyperlipidemia, hypertension
- Insulin resistance, diabetes mellitus.
- Restrictive lung disease, obstructive airway disease
- Fatty liver
- Osteoarthritis and gout.

### Preventive measures-

- By improving the nutritive value of the diet, and reduction in the consumption of junk foods, carbonated drinks.
- An increase in fiber, fruits and vegetable intake.
- Increase in physical activity along with reduction in sedentary lifestyle.
- Avoid milk product like butter, cheese.



### **Ayurveda and childhood obesity-**

- In “Charaksamhita” a classic text of Ayurveda sthaulya is mentioned under “Asthanindidityaadhaya” where Acharya charak describe many defects of over-obese people such as- shortening of life span, hampered movement, foul smell, over-sweating etc. over-obesity is caused by over-saturation, intake of heavy, sweet, cold and fatty diet.<sup>4</sup>
- Atisthaulya is also mentioned under 20 nanatmajavikara of kapha.<sup>5</sup>
- Also mentioned under santarpanajanaya roagas<sup>6</sup> and samsodhanayogyia roagas.<sup>7</sup>

### **Etiological factor for sthaulya in Ayurveda-<sup>8</sup>**

- Over intake of guru, Madhur, sheet, snigdha diet.
- Avyayama ( no physical exercise), divaswapana (day sleep), avyavaya (abstinence from sexual intercourse).
- Harshanitya (uninterrupted cheerfulness), achinta (lack of mental exercise)
- Beejaswabhavath (genetic).

### **Ayurvedic management of childhood obesity-**

- Acharya charak describe various procedure for santaparjanyarogas- like vaman, Virechan, vayayaam, swedana etc,

use of madhu with Haritakichurna and intake of ruksha Ahara.<sup>9</sup>

- Acharya susrutha mentions different virukshaniya and chedaniya drug shilajatu, gugglu, gomutra, Triphala, loharaja Rasanjana, madhu, yava, mudhga, koraduska, shyamaka and uddhalaka in the management of atisthaulya.<sup>10</sup>
- Avoid excessive sleep and daytime sleep.
- Use lukewarm water after meal.
- Lekhanabasti

### **Herbs having anti-obesity effect-**

- Musta- In a study it was found that alcoholic and alkane extract of *C.rotandus* leaf posses anti fat activity and used against the management of obesity.<sup>11</sup>
- Vidanga- A study was conducted on *E.ribes* for observing its antiobesity effect and the result shows that ethanol extract of *E. ribes* showed significant reduction in serum level of leptin, insulin, glucose and cholesterol.<sup>12</sup>
- Gudduchi- Dhingra Dinesh et al in his study founded that petroleum ether extract of *T. cordifolia* stem produced significant reduction in body weight, serum glucose and cholesterol. <sup>13</sup>
- Vacha- *A. calamus* shows reduction in serum cholesterol and triglycerides on rats which are fed with an atherogenic diet.<sup>14</sup>



## CONCLUSION

Childhood obesity is a serious problem which can impact on the physical and psychological health of a child. Children with suffering from childhood obesity are more prone to diabetes mellitus, hypertension, coronary heart disease etc. use of healthy diet, increase physical activity, avoid sedentary lifestyle are the measure for treating childhood obesity.



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