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A REVIEW OF CHILDHOOD OBESITY – ACCORDING TO AYURVEDA

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ABSTRACT

In present era, childhood obesity is of major concern. As the future of nation or community is dependent on the future of a child but due to modern lifestyle and dietary changes the child became more prevalent to obesity which in turn causes various diseases in later life. It was mentioned in Ayurveda that main cause of obesity is the intake of imbalance and improper *Ahar* and indulgence in improper *Vihar*. Now a days due to modern and urban civilization the children are affected by various factors like modified dietary habit, sedentary life style, physical inactivity, junk food, and other activity which ultimately produce childhood obesity and causes various disease in adulthood. In Ayurveda in the context of *Ashta Ninditiya Purush*, *Sthoulya* is mentioned which can be compared to obesity. *Acharaya*s have mentioned causative factors, pathophysiology, clinical features, treatment etc., for *Sthoulya*. This review article aims to gain and collect all these information related to *Sthoulya* and to apply them for the prevention and treatment of childhood obesity.

Key words: Sthoulya, childhood obesity, *Ashta Ninditiya Purusha*

INTRODUCTION

As per Ayurveda health is defined as the "*Sama Dosha Sama Agnischa Sama Dhatu Mala Kriya, Prasanna Atma Indriye Manah Swasth Ityabhidhiyate*" means health is a condition of equilibrium stage of *Dosha*, *Dhatu*, *Mala*, *Agni* with pleasant state of *Atma*, *Mana* and *Indriya*. This focused on the balanced stage of physiological and psychological state of body and mind. In present era WHO also defines good health as a state of complete physical mental and social well-being and not merely an absence of disease or infirmity. But nowadays the synchronization between mind and body is disturbed which results in lots of physical, mental and psychological issues. Obesity is one of the burning health issues of today's time, even children are no exception. *Sthaulya* is '*Santarpan Janya Vikara*' an over nutritional disorder. In Ayurveda *Sthaulya* is regarded as *Medoroga*, a disorder of *Meda Dhatu*, adipose tissue and fat metabolism. *Sthaulya* has been described in various *Samhita*s, as *Acharya Charka* has described *Atisthaulya* among the *Ashta Ninditha Purusha*, *Santarapanajanya Vikara*, *Sleshmaj Nanatmaja Vikara*. A person in whom there is excessive accumulation of *Meda* (Fat/Adipose tissue) and *Mansa* (Flesh/Muscle tissue) leading to looseness of hips, abdomen, and breast has been categorized as *Atisthula*. *Meda Dhatu* is the body tissue dominating *Prithvi* and *Apa Mahabhuta*s similar to *Kapha Dosha*. In *Ashtanga Hridaya*, *Acharya Vagbhata* described *Sthaulya* in *Dwividopakramaneya Adhyaya*. In *Kashyap Samhita*, *Sthaulya* is considered one among the *Ashtanindita Purusha* while explaining anthropology. In *Madhav Nidana*,

Madhavakar has elaborated on the pathophysiology of *Sthaulya*. *Sthaulya* is abnormal and excess accumulation of *Medodhatu* and *Mamsadhatu*. *Sthaulya* can also occur due to *Beejdosha*. In the pathogenesis of *Sthaulya*, all three *Dosha*s are vitiated especially *Kledaka Kapha*, *Pachaka Pitta*, *Samaana* and *Vyana Vayu* are responsible for the *Samprapti* (aetiopathogenesis) of *Sthaulya*. **CLASSIFICATION**

There is no such clear classification in our classics, however, several *Acharya*s have managed to illuminate some light on the classification of *Sthaulya*. *Acharya Charaka* describes *Sthaulya* as *Sthula*, *Atisthula*. *Acharya Sushruta* describes *Sthaulya* into two parts i.e. *Sthaulya*, and *Medoroga*. *Acharya Vagbhata* divides *Sthaulya* into three parts i.e. *Adhik*, *Madhya* and *Heena*. *Sharangadhara* describes *Sthaulya* as a *Meda Dosha*.

MODERN VIEW

As per modern science obesity can be defined as abnormal growth of adipose tissue. This adipose tissue growth can be characterized by increase in fat cell number i.e. hyperplastic obesity or by enlargement of fat cell i.e. hypertrophic obesity or both feature may be present in obesity. BMI (body mass index) is used as a marker for determination of obesity. BMI can be defined as the ratio of body weight in kilogram and height in meter square. A person is considered as obese if the BMI is grater as 25 kg/m^2. There are various grading for obesity given depending upon the BMI value like BMI > 40 is called morbid obese and BMI > 60 is super obese.

In children, normal BMI changes with age. So the BMI for age should be looked at, using the Centre for Disease Control charts which provide percentiles or by calculating the z-score for BMI, using the standard norms given on the WHO website. The child is "overweight" if the BMI is 85- 95 percentiles for age and gender, and "obese" if BMI is greater than 95 percentiles. Weight for height can be calculated ("overweight": up to 120% of ideal, "obese": > 120%) and is often used for children under 5 years, but it can also be useful in older children to help the family understand the severity of the problem. Children more than 2 years of age having a BMI >95th percentile fulfil the obesity criteria, and those having a BMI between 85th and 95th percentile come under the range of overweight. Khadilkar et al revised the BMI, Overweight & Obesity criteria of overweight/children and concluded the 23 adult equivalent overweight range BMI and 27 adult equivalent BMI for labelling the overweight/obese children respectively.

AIMS AND OBJECTIVE

- To review and understand the cause of obesity (*Sthoulya*) as per Ayurveda.
- To understand the cause, treatment and other factors of childhood obesity
- To apply the knowledge of childhood obesity for the treatment and prevention of childhood obesity and other related diseases.

MATERIALS AND METHODS

Ayurvedic classical books like *Charak Samhita*, *Sushruta Samhita* etc., research articles, text books, published journals and related books of modern science etc.

OBESITY

Obesity can be co-related with *Sthoulya*. *Acharya Charak* has included *Atisthoulya* person under *Ashta Nindita Purusha*. He also mentioned various causes for *Atisthul*a which mainly include abnormal *Ahara* and *Vihar*. *Acharya Charaka* also mentioned mental condition like *Achinta*, *Nitya Harsha* etc and *Beeja Swabhavaj* (Hereditary Condition) as the cause of *Sthoulya*. *Acharya*s have describe *Sthoulya* under *Santarpana Janya Vyadhi* and also considered it as *Medo Vridhhi Janya Roga*. *Acharya Charaka* has mentioned eight features of *Ati-Sthoulya Purush with* their pathophysiology.

CAUSES OF OBESITY

In Ayurveda various factors are mentioned as root cause of obesity like *Ahar*, *Vihar* and psychological factors. *Acharya Charak* mentioned genetic factor (*Beeja Dosha*) as the cause of *Sthoulya*. *Acharya Vagbhata* mentioned '*Dhatwagni Mandya*' as the cause of *Sthoulya*. There is a general principal in Ayurveda that a substance increases with indulgence in similar quality and decreases with indulgence in opposite quality. So, substances having similar quality as *Meda Dhatu* will increases *Meda* and thus cause obesity. The similarity of a substance may be *Dravya Samanya*, *Guna Samanya* or *Karma Samanya*.

AHARAJA NIDAN

Atibhojana (excessive eating), *Guru-Madhura-Sheeta-Snigdha Anna Sevana* (consumption of heavy, sweet, cold and unctuous food in excess), *Navanna Sevana* (consumption of newly harvested grains), *Nava Madya Sevana* (indulgence in freshly prepared alcoholic preparations), *Gramya Rasa Sevan* (excessive consumption of meat of domesticated animals), *Paya Vikara Sevana* (over indulgence in milk and milk products), *Sleshmala Ahar Sevana* (Kapha increasing food substances) etc.

VIHARAJ NIDANA

Sukha Shaiya (comfortable bed), *Ati Swapna* (excessive sleeping), *Avyama* (no physical activity), *Diwa Swapna* (sleeping during day time), *Snana* (bath) etc.

MANASHIK NIDANA

Achinta (lack of any kind of stress), *Harsha Nitya* (being happy always), *Saukheyana* (relaxed life) etc.

OTHER FACTORS

Beeja Dosha (genetic causes), *Snigdh Udavartan*, *Snigdh-Madhura Basti*, *Taila Abhayanga* etc.

FEATURE (*RUPA*) OF OBESITY

- *Ayuhrasa* (reduced life span)
- *Javoparodha* (constricted or limited movements)
- *Krichchavyavayata* (reduced sexual activities or impotence)
- *Dourabalya* (debility)
- *Dourgandhya* (foul body odor)
- *Swedabadha* (profuse sweating)
- *Kshudatimatra* (excessive hunger)

- *Pipasa Atiyoga* (excessive thirst)
- Kshudra Swasa (dyspnoea)
- Ayatopachaya (abdominal girth of the body)

OBESITY IN CHILDHOOD

Childhood obesity does not arise from a single cause; it is a culmination of several interlinked factors.

Biological and Genetic factors: Genetics play a crucial role in determining how the body stores and uses energy. Children with one obese parent have about a 40 -50 % risk of becoming obese, and if both parents are obese, the risk can rise above 70%. Certain genetic mutations, such as those affecting the leptin-melanocortin pathway, directly influence appetite regulation and fat storage. Hormonal disorders like hypothyroidism or Cushing's syndrome, though rare, can also contribute.

Environmental influences: The modern environment often promotes weight gain. Urban areas with limited open spaces and unsafe neighborhoods, discourage outdoor activities. Processed food, which are high in calories, are extensively consumed in urban areas, while affordable healthy food options remain scarce in many communities.

Dietary patterns: Increased consumption of processed foods high in sugar, salt and unhealthy fats, larger portion sizes and frequent snacking also contributes to the causes of obesity.

Sedentary behavior: Screen time – whether on television, smartphones or gaming consoles- has replaced active play for many children. Studies show that more than two hours of daily recreational screen time is associated with higher BMI and poorer cardiometabolic health.

Socioeconomic and cultural factors: Low-income families may rely on inexpensive, calorie dense foods due to financial constraints. In some cultures, a plump child is still perceived as a sign of good health and prosperity, which can delay parental recognition of obesity as a problem.

SAMPRAPTI GHATAKA

- *Dosha*: Kledaka Kapha, Pachaka Pitta, Samana Vata, Vyana Vata
- *Dushya*: *Rasa, Mamsa, Meda*
- *Agni*: *Jatharagni*, *Dhatvagni* (*Medodhatvagni*)
- *Srotasa*: *Rasvaha, Medovaha Srotasa*
- *Srotodushhti*: *Sanga*
- *Adhisthana*: *Vapavahan, Medodharakala*
- *Udbhavasthana*: *Amashaya*
- *Prasara*: *Rasayani*
- *Rogamarga*: *Bahya*
- *Ama*: *Jarharagnimandhyajanita*, *Medodhatvagnimandhyajanita*
- *Vyaktisthana*: *Sarvanga*, Especially *Sphika*, *Udara*, *Stana*

COMPLICATION OF CHILDHOOD OBESITY

Childhood obesity is not just a cosmetic issue; it is a significant medical condition with both immediate and lifelong consequences.

Immediate complications:

- Metabolic issues – elevated cholesterol and triglycerides, insulin resistance
- Type 2 diabetes – once considered and adult disease, it is now increasingly diagnosed in children
- Hypertension – excess weight can strain the cardiovascular system early in life
- Respiratory problems – sleep apnea and asthma are more common in obese children
- Orthopedic complications – excess weight places stress on growing bones and joints

Long term Consequences:

Obese children are more likely to become obese adults, perpetuating the cycle. This increases the risk of cardiovascular diseases, diabetes mellitus etc. Moreover, psychological effects such as low self-esteem, depression and social isolation can persist into adulthood, impacting overall quality of life.

CHIKITSA OF STHOULYA

In general *Nidana Parivarjana*, *Shodhana* and *Shamana Chikitsa* are adopted for management of *Sthoulya.*

- ***Nidana Parivarjana*** - It means to avoid all the causative factors which causes the disease. It includes indulgence in *Ahar* and *Vihar* which are opposite to the causative factors of a disease.
- ***Samsodhana Chikitasa*** - In *Shodhana Chikitsa* the vitiated *Dosha*s are eliminated from the body by various procedure like *Vaman* (emesis), *Virechana* (purgation), *Nasya* (nasal instillation) etc.
- ***Shamana Chikitsa*** - In this therapy equilibrium of *Dosha* is brought by suppressing the vitiated *Dosha* and not by mobilizing them from their respective sites. Administration of *Guru* and *Apatarpaka* articles which possess additional *Vataghna*, *Shleshmahara* and *Medohara* properties is considered as an ideal for *Samshaman* therapy.
- **Drugs used in *Sthoulya* Treatment -**
  - Drugs mentioned in *Lekhaniya mahakashaya* by *Acharya Charaka*
  - Drugs mentioned by *Sushruta* in *Varunadi Gana*, *Shalasaradi Gana*, *Trayushna Ganas* etc.
  - Drugs like *Triphala*, *Takraarista*, *Makshika*, *Vidangadi lauha*, *Shilajatu* with *Agnimanth Swaras* etc.
  - *Akasha* and *Vayu mahabhuta pradhana dravya*, *Dravya* having *Katu, Tikta, Kashayas rasa*
  - *Dravya* with *Tikshna, Ushna, Ruksha guna*
  - *Dravya* having *Lekhaniya, Chedaniya, Virukshana* properties etc. are used in treatment of obesity.
- **Drugs mentioned in Ayurveda for management of *Sthoulya***
  - *Rasa- Trimurti rasa, Parad bhasma*
  - *Vati- Arogya varadhani, Kutaki vati*
  - *Churna- Triphala, Trikatu, Guduchyadi*

- *Kwatha- Mustadi, Agnimantha, Briohat panchamoola*
- *Saktu- Vyoshadi, Chavyadi*
- *Guggulu- Medohara guggulu, Trayodashanga guggulu, Dasanga guggulu*
- *Rasayana- Shilajatu rasayana, Amalaki rasayana, Guggulu rasayana.*

DISCUSSION

Sthoulya is a *Santarpan janya vyadhi* which is mainly due to *Kapha and Medo vridhi*. *Acharya Charaka* has mentioned *Apatarpan Chikitsa* in *Santarpan Janya Vyadhi*. *Apatarpan Chikitsa* includes drugs having *Laghu*, *Ruksha*, *Ushna* and *Tiksha* etc and as in *Sthoulya* there is improper action of *Agni*, *Deepan-Pachan* drugs are very helpful in maintaining the normalcy of *Agni*. Childhood obesity may cause various immediate and long term complications which can hamper the overall growth as well as quality of life of the child. In *Ayurvedic* classics various aspects related with obesity like cause, feature, treatment etc. were described in details. This knowledge is very much essential and helpful in the prevention and treatment of the obesity.

CONCLUSION

Childhood obesity is due to the effect of modern civilization which increases the sedentary life style and indulgence in various bad eating habits both qualitatively and quantitatively. To prevent the childhood obesity we must ensure to change the dietary and lifestyle activity first because these changes are directly in our control and are easier to adopt than others.

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