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Homoeopathic Management of Metabolic Syndrome in Children with BMI above 25

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Abstract

Background: In 1999, WHO identified Metabolic Syndrome (MetS) as dysglycemia with BMI ≥ 30 kg/m^2, high lipid profile and Blood pressure above 135/85 mm Hg as metabolic syndrome. Scientific and technical advancement of lifestyle has reduced physical activity of people; whereas today's food and culture ensures increased calorie intake, which along with psychological stress have landed human life in the clutches of metabolic diseases. Homoeopathy has significant efficacy in treating lifestyle diseases like Diabetes, Blood Pressure, Obesity, Insomnia, Heart Problems, Peptic Ulcers etc. The Objective of the study was to manage metabolic diseases homeopathically and monitor their surveillance using standardized physical measurements to collect data on height and weight; hip and waist circumference, family and past history.

Methods: Children who fulfill any 3 criteria of metabolic syndrome are enrolled and data were collected in SKHMC case format systematically. Selected children were communicated with the parent and are requested to visit Sarada Krishna Homoeopathic Medical College for advanced studies and treatment after a written consent. Anthropometric measurement of weight, height, waist circumference, Waist Hip ratio, skin fold measures and activity tracker along with the constitutional medicine was the intervention. Follow up was conducted for a period of 6- 8 months to record significant differences in parameters.

Results: The prevalence of the MetS was seen in 19 children among 264 screened students 7.2% among which 3.4% were females; 3.7% were males. All 19 children had BMI above 85percentile; among which obese children were 8 and remaining 11 were identified overweight. The factor responsible were identified as low physical activity, sedentary activities such as watching television or using electronic gadgets and sleep routines, which were seen in 63% of the children and rest was understood as due to medication, family history etc. After the prescription of constitutional remedy and follow up of 8 months, following parameters were analyzed for observing significant difference in Waist circumference, BMI and Waist Hip ratio, skin fold measures; P=0.001.

Conclusion: The MetS is prevalent among school children, and this is due to lack of awareness among students, teachers and parents, therefore school health programs can help the children to lead healthy life style. Introducing Physical education and outdoor games in school must be recommended and made mandatory to raise up a healthy generation. Occassional screening programs to manage obesity and MetS must be intervented.

Keywords: Metabolic syndrome • Obesity • Prevalence • School children

Introduction

There is an urgent need to act now to improve the health of this generation as suggested in World Health Organisation (WHO) [1]. Obesity or overweight is defined as excess accumulation of fat in the subcutaneous tissue and other parts of the body [2]. Childhood obesity is a global phenomenon affecting all socio-economical groups [3]. After increasing steadily for decades, the national childhood obesity rate has levelled off, but it is still alarmingly high compared to few decades back [4]. Obesity is caused by several factors like psychological factor, environmental factor, decreased energy expenditure, dietary factor, genetic factors, life style habits, etc. [2]. Calvert and Tan did a study on young adults, where they compared the difference between playing versus observing violent video games.

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This study shows that children who play video games have behavioural changes. From that, we conclude that playing video games for 13 and 14 hours in a week can decrease the physical activity of the children which leads obesity [5]. Majority of contribution is said to be linked with constitutional dyscrasia.

Plasma cell dyscrasias are a diverse collection of illnesses characterised by monoclonal plasma cell growth in the bone marrow. Multiple myeloma is the most severe and common plasma cell dyscrasia, with a median age of start of 60 years and symptoms that include lytic bone damage, anaemia, renal failure, and immunodeficiency. Monoclonal Gammopathy of Undetermined Significance (MGUS), which affects up to 3.2% of people over the age of 50, is associated with plasma cell dyscrasia and, in some cases, leads to myeloma. The majority of individuals with multiple myeloma have bone marrow plasmacytosis, a monoclonal gammopathy in serum or urine, and lytic bone lesions may be present in up to 60% of cases [6].

Flow cytometry may also be used to diagnose plasma cell dyscrasias. Plasma cells are CD38 (bright) positive and CD138 positive (although less sensitive). Plasma cells in the blood and tonsils are CD45+, however plasma cells in the bone marrow can be either positive or negative. CD19 positive and CD20 negative plasma cells are the norm. Typically, abnormal plasma cells are CD19 negative and CD56 positive. CD117 positivity is seen in up to 20% of instances of neoplastic plasma cell neoplasms. Typical phenotypic abnormalities identified in aberrant plasma cells include the expression of CD28, CD56, and CD117, as well as the lack of CD19, CD27, and CD81.

Constitution is defined as the structural, composition, physical make up (or) nature of a person, comprising inherited qualities and modified by the environment [6]. The rational art of healing "Homoeopathy" is based on the principle that each and every individual is unique. Constitution is a characteristic combination of bodily, mental and moral qualities, which together constitute the character and disposition of an individual Dyscrasia is defined as a abnormal or physiologically unbalanced state of the body [7]. Constitutional dyscrasia is collectively known as unbalanced physical make up of a person. Usually this constitutional dyscrasia is hereditary transmissible [8]. Individual develops according to a certain morphological tendency or predisposition, inherent in his constitution. Constitutional dyscrasia is one of the reasons for Obesity. Obesity often tracks in families. A similar constitutional remedy can correct the constitutional dyscrasia. Homoeopathic medication is the safest mode of medication for weight control.

Objectives

1. This study is to find the efficacy of homoeopathic medicine in a correction of constitutional dyscrasia in childhood obesity.
2. To find the suitable potency of Homoeopathic medicines effective for the management of childhood obesity.

Methodology

The present study is a cross-sectional study carried out among children aged 8-13 years with the criteria of metabolic syndrome in NM Vidhya Kendra, Chitharal, Kanyakumari district. Selected children and communicated with the parent and are requested to visit Sarada Krishna Homoeopathic Medical College for advanced studies and treatment after a written consent. Anthropometric measurement of weight, height, waist circumference, Waist Hip ratio, skin fold measures and activity tracker along with the constitutional medicine was the intervention. Follow up was conducted for a period of 6-8 months to record significant differences in parameters.

Results

The prevalence of the Metabolic Syndrome was seen in 19 children among 264 screened students 7.2% among which 3.4% were females; 3.7% were males (Tables 1 and 2). All 19 children had BMI above 85 percentile; among which obese children were 8 and remaining 11 were identified overweight (Table 3). The factor responsible were identified as low physical activity, sedentary activities such as watching television or using electronic gadgets and sleep routines, which were seen in 63% of the children and rest was understood as due to medication, family history etc. After the prescription of constitutional remedy and follow up of 8 months, following parameters were analyzed for observing significant difference in Waist circumference, BMI and Waist Hip ratio, skin fold measures; (P=0.001) (Tables 4 and 5) (Figure 1).

Table 1. Distribution of cases based on past history.

Past History	Number of cases
Primary complex	2
Febrile illness	2
Trauma	1
Tonsilitis	2
Atopic dermatitis	2
No history	3
Allergic rhinities	7

Table 2. Distribution of cases according to medicine prescribed.

Medicine	Number of cases
Calcarea carbonica	13
Antimonium crudum	2
Pulsatilla	2
Ferrum metallicum	1
Baryta carbonica	1

Table 3. Distribution of cases according to potency.

Potency	Number of cases
30 c	2
1 M	1
200 c	16

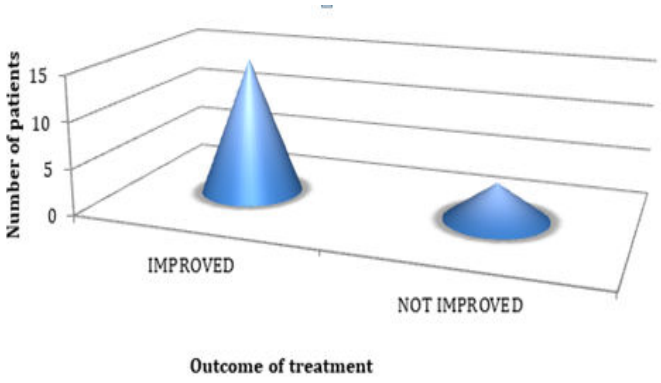

Figure 1. Distribution of cases of according to outcome.

Table 4. Pre analysis in treatment protocol.

Height in cm	Weight in kg	BMI in kg/m^2	Waist circumference in cm
157	64	26	68
148	60	27.4	69
143	54	26.4	65
148	55	25.1	65
155	69	28.7	68
150	69	30.7	67
153	60	25.6	66
149	58	26.1	67
167	77	27.6	68
174	78	25.8	67
157	64	26	68
148	60	27.4	69
143	54	26.4	65
148	55	25.1	65
155	69	28.7	68
150	69	30.7	67
153	60	25.6	66
149	58	26.1	67
167	77	27.6	68

Table 5. Post analysis in treatment protocol.

Height in cm	Weight in kg	BMI in kg/m^2	Waist circumference in cm
157	64	26	68
148	59	26.9	69
143	53.4	26.1	64
148	54	24.7	65
155	69	28.7	68
150	68	30.2	67
153	59	25.2	66
149	57.3	25.8	67
167	77	27.6	68
174	78	25.8	67
157	64	26	68
148	59	26.9	69
143	53.4	26.1	64
148	54	24.7	65
155	69	28.7	68
150	68	30.2	67
153	59	25.2	66
149	57.3	25.8	67
167	77	27.6	68

Discussion

Among 19 cases; 2 cases had a primary complex; 1 case had trauma; 2 cases had febrile illness; 2 cases had tonsillitis; 2cases had atopic dermatitis; 3 cases had no relevant past history and 7 cases had allergic rhinitis. Obesity increased the prevalence of allergic rhinitis and atopic dermatitis in child. A part of the epidemiology of allergic disorders in Chinese study, was to analyze the association between the different Body Mass Index (BMI) categories (normal weight, overweight, and obesity) and allergic diseases in a population of Chinese children aged 2–14 years. In my study it is observed that 7 cases having allergic rhinitis. This will help us to do further research about this relation.

For these 19 cases medicines are prescribed according to constitution and characteristic symptoms. On this basis 13 cases has prescribed by Calcarea carbonica; 2 cases has prescribed by Antimonium crudum; 2 cases has prescribed by Pulsatilla; Ferrum metallicum and Baryta carbonica has prescribed for one case each. Out of 19 cases; 200 potency is given for 16 cases, 1 M is given for 1 case, 30 potency is given for other case. More cases given for 200 potency.

Conclusion

The Metabolic Syndrome is prevalent among school children, and this is due to lack of awareness among students, teachers and parents, therefore school health programs can help the children to lead healthy life style. Introducing Physical education and outdoor games in school must be recommended and made mandatory to rise up a healthy generation. Occasional screening programs to manage obesity and Metabolic Syndrome must be intervened. Further research through prospective observation and randomized controlled trials with individualized homoeopathic medication is warranted to strongly support the effectiveness of homoeopathic medicines in the management of Metabolic Syndrome.

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