

SUMMARY AND CONCLUSION

SUMMARY AND CONCLUSION

Obesity in children is a problem for three reasons.

First: The obese child is at increased risk for carbohydrate intolerance, increased insulin secretion, hypercholesterolemia, hypertension, and decreased growth hormone release.

Second: It may have adverse social and psychological consequences.

Third: Most children do not grow out of their obesity; 80% of children who are obese in the eighth grade become obese adults.

Obesity is widely recognized as a contributing factor to several chronic diseases. The most important disorders to which obesity contributes are among the leading causes of morbidity and mortality. These include cardiovascular diseases, particularly hypertensive cardiovascular disease and premature coronary artery disease, diabetes mellitus, gallbladder disease, psychosocial disability, and musculoskeletal disorders. Treatment of adult obesity is disappointing. Less than 5% of adults who lose weight are able to maintain their weight loss at 5 years after treatment, and 62% regain all of the lost weight.

The incidence of childhood obesity relates strongly to family variables, including paternal, higher socioeconomic status, increased

paternal education, small family size, and family patterns of inactivity. Children of parents with high activity levels tend to be leaner than their peers. An increased amount of time spent viewing television appears to correlate with an increased incidence of childhood obesity and may relate not only to the sedentary nature of pastime but also to effects on food consumption related to advertisement of food products.

A wide variety of environmental, socioeconomic, familial, and individual variables influence the development of childhood obesity. For example, the availability of safe areas for children to play and exercise, such as playgrounds and bicycle paths, are crucial in promoting children's physical activity.

Media can also play a role in bringing about environmental changes. A media-based campaign, targeting opinion leaders and decision makers, to raise awareness and bring about policy changes to impact the environment may be as important as increasing knowledge of nutrition and physical activity of youth.

All our obese children and non-obese control group submitted to anthropometric measurements, clinical evaluation and examination, routine investigations; (complete blood picture, complete urine and stool analysis), random blood glucose level, liver enzymes; (AST-ALT Alkaline Phosphatase), lipid profile; (total cholesterol, HDL, LDL, triglyceride, apolipoprotein A & B), hormonal study; (T3-T4, parathyroid hormone, insulin, cortisol levels), and serum calcium.

The present study was carried out on one hundred child with age 4 to 17 years of both sexes, presented by simple obesity. Twenty apparently healthy children with matching age and sex were used as a control group.

In the present study we have 56% of our obese study group has obesity since birth, 14% began obesity at infancy period, and 30% began obesity during childhood period 4-7 years old.

In our obese children and adolescents, there was a history that 30% has breast feeding alone for 10 months of age; 29% of them has mixed feeding, both bottle & breast feeding for 6 months and introduction of solid food began at 6 months of age; and 41% undergo artificial feeding during infancy period with early introduction with history of introduction of solid food at 4-6 months of age.

We notice that 68.6% of male above 9 years, (24 of 35), and 76.6% of female above 9 years, (36 of 47), have binge eating disorder.

We found that all subjects; 100% have positive family history of obesity, one of the parents is obese or both are obese. We found that 69% has both obese parents, 12% has only obese fathers, and 19% has only obese mothers.

In the present study we found that 80% out of our obese subjects were of low income families in spite of 20% were in high income families.

52 obese mothers gave history of birth weight above 4kg in comparison to 4 of non obese mothers who reported high birth weight, 36 obese mothers and 8 none obese mothers gave history of normal weight baby.

We found that 56% of obese children have a history of high birth weight, 44% have average weight at birth. So we suggest that incidence of childhood obesity is directly related to high birth weight. 55.4% of children with high birth weight were born to diabetic mothers.

89% of subjects have a rate of increasing body weight more in winter than in summer.

There are 42% of obese subjects have arranged family with no social troubles, 14% their parents were divorced and 44% have social troubles and marital problems.

Our study revealed that 69% of our obese subjects are affected by parents and providers through different types of influences on eating behavior. This affection in the form of the following four specific topics (1)verbal prompting at mealtime; (2)non-verbal influences, such as food purchases and the presentation of food; (3)the influence of adult eating behavior; and (4)the use of food for non nutritional purposes.

We found that parents and care providers clearly use food nonnutritively in the form of rewards, punishments, or pacifiers.

82%, out of 100, of our subjects clearly reported using food nonnutritively in the form of rewards and punishment. 62 out of 82, (75.6%), using food as reward, the rest, 20 out of 82, (24.4%), using certain items as punishment. There was a difference in the types of food used for each purpose. The food used as reward; 80% were sweets and snakes, 20% were fruits. The food provided as punishment; were rice and beans.

All obese subjects reported in their history that they like viewing television during having their meals. All of them watch TV more than 24 hours per week. Their mother reported that they like viewing commercials during their preschool period.

8% have elevated blood pressure above 95th percentile for age, with age range 14-17 years age, 75%, are males and 25% are female.

Hypercholesterolemia; >210mg/dL, observed in 20 out of 100; 20% of total subject. Higher serum levels of HDL; >65mg/dL, observed in 13%. Higher serum levels of LDL; > 130mg/dL, observed in 21%. Higher values of serum levels of TG; >150mg/dL, in 22%. Higher values of serum levels of Apo-A-1; >176mg/dL, observed in 45%. Higher values of serum levels of Apo-B; >128mg/dL.

The obtained results demonstrated higher mean values of serum TC, TG, HDL, LDL, Apo-A-1 and Apo-B in obese more than the non obese, although significant difference noted for all lipid profile except for HDL.

This pattern encountered in our obese subjects is in consistent with the lipid pattern reported to be strongly associated with increased risk of coronary heart disease.

We notice that there are 44% of obese children have higher values than normal of insulin serum levels, > 24 μ U/mL, 39% have higher levels of parathyroid hormone than normal values, > 72Pg/mL. Statistically there is significant hyperinsulinemia and significant hyperparathyroidemia.

We found that many hormonal and biochemical changes occur in obesity e.g. hypercholesterolemia, hypertriglyceridaemia, hyperapolipoproteinemia, hyperinsulinemia, and hyperparathyroidemia.

Parent should be aware of obesity and its complications and are considered an essential part of programs designed to prevent and treat obesity.

The aims of prevention and treatment programs, if they are to be successful, will have to target both behavioral skills and the societies in which families are embedded.

Prevention and treatment of obesity will help to improve the biochemical and hormonal changes of obesity and reduce risk factors of obesity.

To summarize, the following important issues are concluded from the present study:

- ❁ Early introduction of solid food associated with the development of obesity in infancy and childhood period.
- ❁ Incidence of childhood obesity related inversely to family level of education especially mothers.
- ❁ Incidence of childhood obesity is directly related to high birth weight.
- ❁ Maternal diabetes may be predispose to childhood obesity.
- ❁ Children tend to gain weight more in winter than in summer.
- ❁ Obesity in children directly related to social troubles and marital problems.
- ❁ Eating behavior affected by parental and adult care through four specific topics: (1)verbal prompting at mealtime; (2)non-verbal influences, such as food purchases and the presentation of food; (3)the influence of adult eating behavior; and (4)the use of food for non nutritional purposes.
- ❁ Relative excess of caloric intake over average of calories consumed by children of the same age directly related to obesity.
- ❁ Incidence of childhood obesity directly related to positive family history of obesity.

Summary and conclusion

- ✿ Obese adolescents are liable to elevated blood pressure.
- ✿ Endocrinal changes in obesity include hyperinsulinemia, hyperparathyroidemia.
- ✿ Biochemical changes in obesity include increased levels of total cholesterol, low density lipoprotein, triglycerides, and apolipoprotein A, and B.