RISK FACTORS AND COMORBIDITIES OF CHILDHOOD OBESITY

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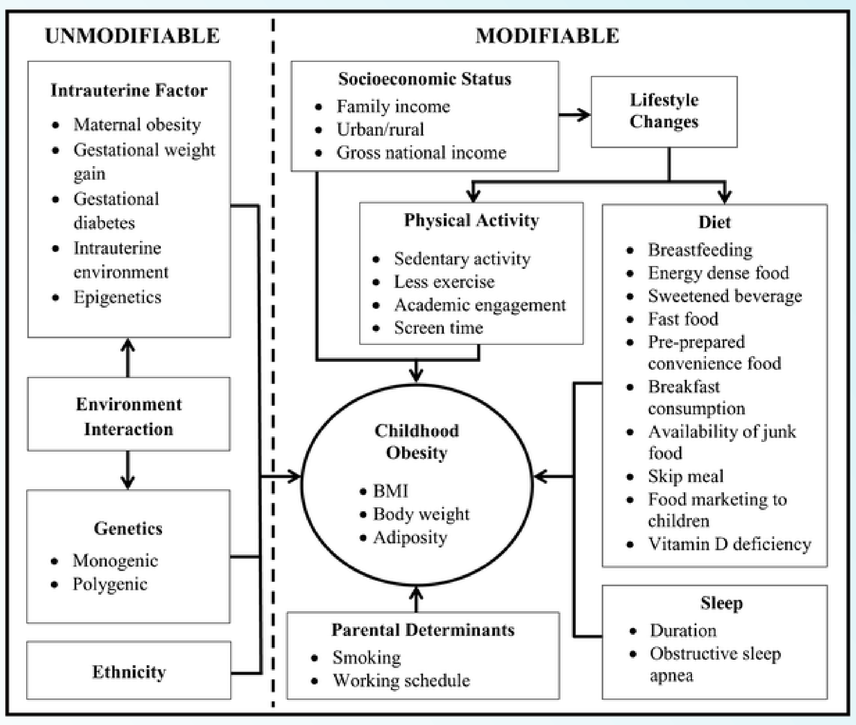
Introduction

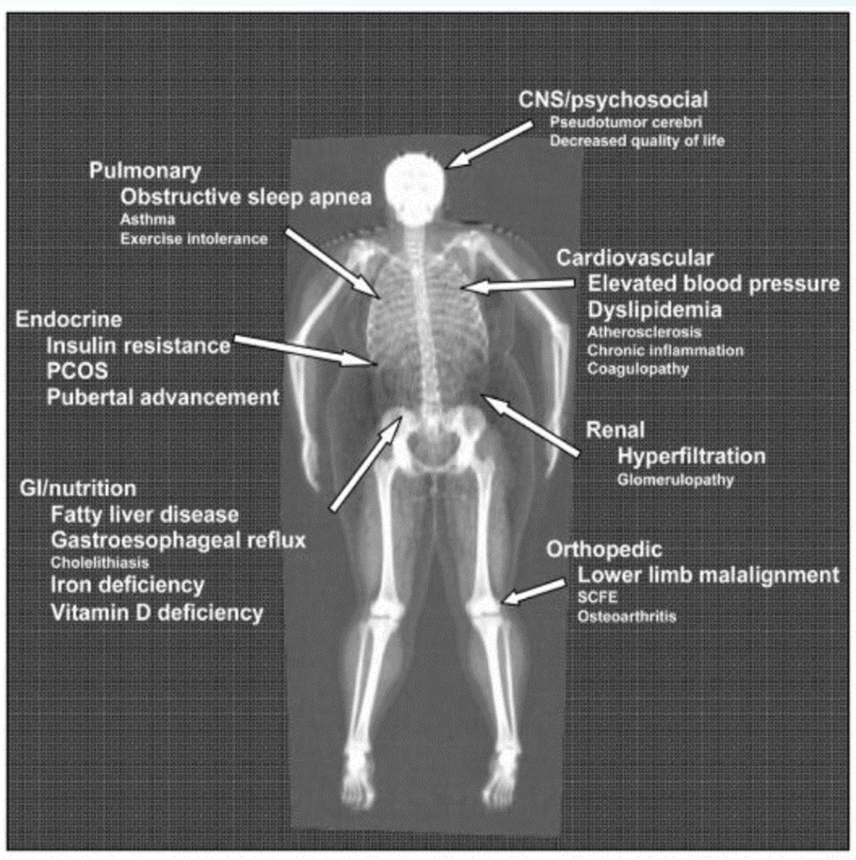
The epidemic of childhood obesity has emerged as one of the most serious public health issues since this disease leads to multiple disorders in many systems of the human body and decreases the quality of life and the life expectancy. Plenty of studies have searched for risk factors which cause pediatric obesity and precocious markers of comorbidities which follow obesity.

Fig. 1 Conceptual framework describing the etiology of childhood obesity



Ang, Y.N., Wee, B.S., Poh, B.K. et al. Curr Obes Rep (2013) 2: 10

Fig. 2 Comorbidities of childhood obesity



Han et al., Lancet 2010

Objective and hypotheses

This study is a cross-sectional and retrospective case- control survey which aim is to find risk factors and complications of childhood and adolescence obesity.

Method

The sample consists of 28 obese individuals and 17 individuals with normal weight as control group, aged 5 to 16 years old.

Family and medical history was obtained and anthropometric details were measured. A physical examination was performed as well as blood sampling and ultrasound of the liver.

Statistical analysis was performed with SPSS.

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Results

Consumption of high food quantity ($p<0.001$), high amounts of junk food ($p<0.001$), skipping breakfast($p=0.065$), low physical activity and sedentary behaviours ($p=0.002$) of children are major risk factors of childhood obesity. Their parents' customs also are important risk factors; mother's and father's consumption of high food quantity and high amounts of junk food ($p=0.012$ and 0.014), parents' low physical activity and sedentary behaviours ($p=0.042$). On the contrary, food quality appears not to influence the prevalence of childhood obesity. Sufficient amount of sleep is an important limiting factor of the obesity onset ($p=0.036$).

This study does not reveal pre-natal and post-natal determinants. The socioeconomic position of the family and the area of residence does not influence the incidence of pediatric obesity ($p=0.14$ and $p=0.54$) .

Obesity among family contributes to this disease ($p=0.096$), especially obese mothers develop high risk of having obese children ($p=0.005$) and mother's pre-conception high BMI seems to be a risk factor ($p=0.008$).

Obese adolescents excibited higher risk to develop disorders of metabolic syndrome than the control group (high waist circumference $p<0.001$, waist-to-hip ratio $p<0.001$ and waist-to-height ratio $p<0.001$, low HDL $p=0.024$, high levels of c-peptide $p=0.019$ and HbA1c $p=0.058$ in blood serum), elevated levels of CRP ($p=0.089$) and TSH ($p=0.031$) and low levels of SHBG ($p=0.029$) in blood serum.

The study also reveals a trend towards elevated levels of ALT in blood serum of obese children than children with normal BMI ($p=0.087$) and a high percentage of obese adolescents (22%) appear to have NAFLD according to the findings of ultrasound of the liver.

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Conclusions

More research in risk factors of childhood obesity is a high priority of public health for the purpose of prevention programs' development. It is urgent also to bring out predictors of obesity comorbidities in order that obese children enhance their quality of life and increased their life expectancy.

References

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Conflict of interest
No potential conflicts of interest were disclosed.