

Comment on: Relationship between lipid and hematological profiles and adiposity in obese adolescents

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The increase in the incidence of obesity among children and adolescents is considered a worldwide public health problem. Overweight in childhood increases the chances of obesity in adulthood and is an important risk factor for cardiovascular diseases. Although the clinical manifestations of these diseases occur in adulthood, studies have demonstrated that comorbidities such as dyslipidemias, hypertension and insulin resistance may be present in childhood and adolescence and are responsible for the increased risk of morbidity and mortality in adulthood⁽¹⁾.

For Juhola et al.⁽²⁾, factors such as blood pressure, serum lipid levels and body mass index of adolescents between 12 and 18 years old are strongly correlated with the measured values in middle age. These associations appear to be stronger with increasing age.

Dyslipidemia, characterized by elevated levels of total cholesterol, low-density lipoprotein cholesterol and triglycerides and low levels of high-density lipoprotein (HDL) cholesterol, is related to higher incidence of arterial hypertension and atherosclerosis. Such co-morbidities arise from the formation of lipid plaques (atheroma) due to fat deposited in the endothelium, leading to the obstruction of blood vessels⁽³⁾.

Hematological profile variables such as platelets also have a significant effect on the formation of atherosclerotic plaques⁽⁴⁾. Platelets are potentially involved in vaso-occlusion mediated by their ability to adhere to the endothelium⁽⁵⁾. Furthermore, change in the number of red and white cells may have a physiological impact on the immunological defense⁽⁶⁾.

As in adults, children and adolescents have an increased occurrence of cardiometabolic risk factors such as increasing android adiposity⁽⁷⁾. In addition, high waist circumference during adolescence is associated with an increased mortality rate from all causes in adulthood⁽⁸⁾. Thus, decreased adiposity, particularly central adiposity indicated by reduced waist circumference, has potential relevance to the health of these individuals.

In this sense, it is fundamental to understand the possible relationship of the lipid and hematological profiles with the body adiposity index since this can directly impact on the health of individuals at different stages of life.

The study entitled “Relationship between lipid and hematological profiles and adiposity in obese adolescents” featured in this issue of the *Revista Brasileira de Hematologia e Hemoterapia*, measured waist circumference, body mass index (BMI), sum of skinfolds, red blood cell and platelet counts, hemoglobin level and serum levels of total cholesterol, triglycerides and HDL, with the objective of verifying associations between lipid and hematological profiles with the adiposity body index of obese adolescents admitted in a multidisciplinary treatment⁽⁹⁾.

The main results show that there were significant differences between genders for the red blood cell count, hemoglobin and platelets and that correlations were found positive for red blood cell count and hemoglobin with waist circumference. In addition, hemoglobin levels were negatively correlated with the sum of skinfolds.

Some studies reported results relevant to the understanding of the importance of correlations and data presented by the authors of this study. Ostojic et al.⁽¹⁰⁾, intending to determine the extent to which physical activity and adiposity are associated with blood cholesterol levels in male adolescents, showed that physical activity is a more important factor in balancing blood lipid status than adiposity per se, particularly for HDL cholesterol.

Abu-Samak et al.⁽¹¹⁾ analyzing healthy Arab male youths in Jordan showed that changes in lipid variables and some hematological parameters may increase plasma viscosity as a step during atherosclerosis pathogenesis in male youths at risk for dyslipidemia and cardiovascular diseases.

Tungtrongchitr et al.⁽¹²⁾, assessing overweight and obese volunteers, found anemia, using hemoglobin as an indicator, in 18.7% of overweight and obese female subjects. Significant associations were found between weight, height, BMI, waist circumference, hemoglobin, hematocrit, and serum leptin in both male and female overweight subjects. A negative correlation was found between serum leptin and hemoglobin and hematocrit in both overweight and obese subjects. However, these studies did not involve adolescents.

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Thus, the study of Ferreira et al. is highly relevant since it serves as a reference to the different health professionals by presenting important data on a context that is still rarely addressed in the literature, allowing interpretations and referrals in order to avoid or reduce exposure to cardiovascular risks and to the health of obese adolescents⁽⁹⁾.

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