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Cardiovascular risk in adolescent women

Riesgo cardiovascular en mujeres adolescentes

Mariana Romero,* Alfa Kenia Fernández-Pujol‡

INTRODUCTION

Cardiovascular disease is the leading cause of death worldwide, which occurs in both men and women, with an increasing incidence.

When looking at the natural history of the disease, it is essential to note that the atherosclerosis process, in many cases, begins early in life, either during childhood or later in adolescence. Moreover, it is a process with well-defined causes since there has recently been an increase in the prevalence and the earlier appearance of cardiovascular risk factors (CVRFs).[1] which tend to be prolonged towards adult life. Therefore, early diagnosis and prevention, even before adolescence, can influence the present time of children and adolescents and their future.

CARDIOVASCULAR RISK IN ADOLESCENTS

Family history plays an essential role in adolescents with a positive inherited-family history, who present more significant vascular damage, such as thickening of the carotid intima and media layers, which may or may not be accompanied by signs of endothelial dysfunction.[2] Hypertensive disorders during pregnancy and low birth weight also have adverse consequences beyond the gestational period, generating a greater predisposition to cardiovascular disease in adult life. Taking this into account, at the Argerich Hospital in Buenos Aires, Argentina, early manifestations were studied in adolescents born or not to mothers with high blood pressure (HBP) during pregnancy. It was observed that regardless of what happened during pregnancy, men presented greater vascular stiffness and left ventricular thickening, indicative of early remodeling.[3]

Although CVRFs are more prevalent in adults than adolescents, obesity or overweight, hypertension, dyslipidemia with a predominance of increased LDL-cholesterol and glucose intolerance, or type 2 diabetes can be found in the latter.

Many of these factors are secondary to an inadequate diet and a sedentary lifestyle, typical of modern society. Because of the increment of the mentioned risk factors, there is a higher rate of metabolic syndrome, which affects women to a greater extent.[4]

There are other CFRFs, such as smoking which, although its trend is declining, it is noteworthy that in the 2018 Global School Health Survey, it was observed that in female adolescents, both tobacco and alcohol consumption were higher than in men.[5]

There are risk factors specific to the female gender, such as polycystic ovary syndrome, a pathology associated with hyperandrogenism, predisposing these patients to develop CVRFs, such as hypertension, diabetes, and a higher incidence of obesity even in such early stages.[6]

In adolescence, cardiovascular disease is not the first cause of death, but identifying CVRFs is essential to avoid its continuation in adult life.

DIAGNOSIS AND PREVENTION

The timely diagnosis and identification of CVRFs in adolescence are vital for preventing cardiovascular diseases. Therefore, the

* Hospital General de Agudos «Dr. Cosme Argerich», Argentina.
‡ Hospital Metropolitano de Santiago, Dominican Republic.

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inclusion of a general clinical examination focusing on cardiovascular risk will be the cornerstone of identifying relevant variables in children and adolescents. Moreover, it must be systematically motivated to perform a good clinical history and a physical examination that includes the identification of murmurs or clinical data of hormonal changes at early ages in female adolescents. Blood pressure must be measured, as weight and height (according to standardized percentiles for age) and body mass index, classifying the existence of overweight and obesity.[7]

Implementing new strategies for evaluating young populations and identifying risk factors will generate more effective interventions, mainly from our profession. It is also proposed to measure other variables, such as cholesterol concentrations, and psychological analysis in search of depression, stress, and anxiety. Also, the assessment of abrupt hormonal changes in girls and gynecological studies, and the estimation of the thyroid profile, will help us to identify cardiovascular risk in a large percentage of the adolescent population and thus carry out effective therapeutic and guidance interventions.[8]

Strategies should include regular physical activity and promoting healthy eating in schools and homes to reduce risk. In addition, family communication should be facilitated in cases of depression or anxiety, as well as by asking for guidance in the psychological sphere at schools.

There is no doubt that childhood and adolescence are the ideal age to carry out strategies to promote healthy habits due to the extraordinary plasticity of the brain at an early age. Furthermore, the school environment is favorable, given that it is where they spend much of their time for several years. Therefore, motivation and prevention campaigns are an essential basis for the strategy, and the level of motivation should never drop in this regard.[9,10]

It is difficult to fight against video games and the Internet, one of the biggest current distractions for young people. Notwithstanding, many strategies are carried out worldwide to promote sport and reduce obesity and sedentary lifestyle rates.

When physical activity is stimulated by promoting maxims such as «you will be happier», the results are better than rational reasons such as «you will be healthier». However, current strategies only make explicit health improvements that represent the practice of physical exercise. Therefore, both benefits are obtained by promoting the effects on the emotional sphere.

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Correspondence:
Mariana Romero
E-mail: marianaromero78@gmail.com