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EDITORIAL

Interteaching management of cardiovascular diseases

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Historic

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Acute myocardial infarction (AMI), ischemic or hemorrhagic cerebrovascular accident (CVA) and peripheral vascular disease, also known as atherosclerotic vascular disease, are known as cardiovascular diseases (CVD). All these have something in common: their basic pathophysiologic process lies in the progress of atherosclerosis in the vasculature that irrigates the affected organs[18]. AMI and CVA are acute events that are mainly caused by vessel obstructions, which occur when an atherosclerotic plaque ruptures causing an atherothrombosis picture, a phenomenon that explains the symptomatology of acute events. Currently, CVD is the leading cause of morbidity and mortality globally, increasing year after year the number of deaths due to these diseases than due to any other disease[20,19]. According to the World Health Organization (WHO), 17.5 million people in the world every year, i.e. 31% of total deaths, die from any form of CVD, of which 7.4 million deaths were caused by AMI and 6.7 million by CVD. CVD is currently considered a global epidemic that affects individuals from all over the world, regardless of their income. In addition, CVD has largely increased in low- and middle-income countries, affecting almost equally both sexes[3,4]. Currently, CVD as a whole is the leading cause of death in Colombia, from which AMI causes 17% of overall mortality in both men and women, followed by CVA and hypertensive heart diseases[14].

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The INTERHEART[20] e INTERSTROKE[11.19] epidemiological studies, where a large number of Colombian patients participated, established that there are nine major risk factors for AMI and CVA, which can be preventable and/or controllable, and that all together are accountable for 90% of the population attributable risk. Among these 9 risk factors, the most common factors in Colombia are arterial hypertension, atherogenic dyslipidemia and abdominal obesity, followed by smoking, unhealthy diet, physical inactivity, dysglycemia, type 2 diabetes mellitus (DM2), depression and anxiety. It is important to note that the CVD risk increases when several of these risk factors occur together. A concomitant occurrence of three of these risk factors (abdominal obesity, hypertension, dysglycemia, low HDL and high triglycerides) make up the so-called Metabolic Syndrome (MS), a disease associated with an increase in the incidence of DM2, AMI and CVA, which is greater than that the observed in each of the risk factors separately[10]. These risk factors are associated with the existence of insulin resistance and low-grade inflammation, phenomena which are also associated with increased adiposity, especially visceral adiposity, and loss of muscle mass and strength[13,15-17].

It was demonstrated that Colombia's low-income population is more prone to have insulin resistance and low-grade inflammation at lower levels of visceral adiposity. As a result of malnutrition in pregnant women, primarily due to the deficit of high biological value protein consumption, intra-uterine insulin resistance is developed in order to survive during fetal programming and cell plasticity. This allows protecting the development of the central nervous system but affecting the development of other tissues such as pancreatic beta cells, cardiomyocytes, nephrons and skeletal muscle tissue, which is reflected in intrauterine growth restrictions and low birth weight for gestational age. In extrauterine life, newborns are exposed to a high intake of processed carbohydrates and a sedentary lifestyle, along with a greater sensitivity to insulin resistance and considering their lower muscle and organ mass, makes them more prone to develop low-grade inflammation, obesity, DM2, MS and CVD[1,9,12,14]. In fact, the origin of CVD is traced back to the very beginning of life, largely depending on the socioeconomic factors of individuals and the state of epidemiological transition in each country, especially the related one to the level of urbanization and the adoption of "western" lifestyles, i.e. lifestyles driven by savage capitalism and consumerism, where individual financial wellness comes first than health and quality of life of the community. A few decades ago, we suggested that obesity, MS, DM2 and CVD were normal biological responses to the abnormal development of a consumer society[18].

Considering this background, and in the face of obesity, MS, DM2 and CVD epidemics observed in the low- and middle-income populations, the response to address these diseases must be agreed, involving all society stakeholders: the government, honest politicians, social communicators, organized communities and of course, the academy: universities and scientific societies. In this context and concerning the University, especially our University - UDES, the challenge of a successful confrontation

with CVD epidemic requires that all Schools, including their different areas of knowledge, to join the crusade for creating a great multidisciplinary group led by the School of Health Sciences and its different Departments to include topics such as environmental pollution and CVD, land ownership/distribution, food production and CVD, alternative crops to improve human nutrition, food industry and cardiovascular risk, role of formal and informal education in CVD prevention, laws required for primary and secondary prevention, physical activity stimulation programs related to work, economy and health, healthy spaces, etc. in their corresponding degree programs and research proposals.

CVD can be prevented by controlling behavioral risk factors and lifestyle[5]. Therefore, it is required to implement strategies including the entire population. For people with high cardiovascular risk, it is fundamental to have early diagnosis and treatment when detecting one or more of the above risk factors[2,6-8].

The UDES School of Health has been working on the development of research projects such as the PURE, SIMAC, HOPE 4 studies, among others, which integrate teachers and students of Medicine, Nursing, Physiotherapy and Bacteriology degrees as well as in cooperation with health service providers such as FOSCAL and the integration of knowledge networks such as the Colombian Network for the Prevention of Cardiovascular Diseases and Diabetes (RECARDI, for its acronym in Spanish) and the International Network of the Population Health Research Institute (PHRI). Thus, the contributions made by our University for solving this problem have been widely recognized.

Considering this experience, we believe that the interactive participation of teachers and students from different departments of the School of Health Sciences, with the aim of generating and gaining knowledge that effectively contributes to prevent, treat and recover health of people and patients with CVD risk, is certainly a global objective for the School and the University. In this context, it is fundamental to have a channel of academic and scientific exchange such as the Cuidarte Journal.

Conflict of interest: The authors declare no conflict of interest.

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