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EDITORIAL

Atherogenic indices: usefulness as predictors of cardiovascular disease

Índices aterogénicos: utilidad como predictores en enfermedad cardiovascular

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Cardiovascular diseases (CVD) continue to be, even in the years of the COVID-19 pandemic, the leading cause of death, according to data from the World Health Organisation (WHO)¹ in 2021, with figures of around 18 million lives lost each year. In Spain, they are also the leading cause of death, with 119,853 people dying in 2020, accounting for 24.3% of total deaths.²

Under this CVD heading we find a series of clinical manifestations (ischaemic heart disease, cerebrovascular disease or peripheral arterial disease) whose underlying cause is arteriosclerosis, defined as a chronic inflammatory process that affects the arteries of different vascular beds and is characterised by the presence of atheroma plaque (lipids, fibrous tissue and inflammatory cells), in the intima and media layers that eventually produce a progressive loss of elasticity, which can be complicated by the appearance of fissures, erosion or rupture in the plaque and the formation of a thrombus, which will condition the appearance distal to the lesion, of ischaemia or tissue necrosis.

When clinicians are faced with a patient with various cardiovascular risk factors (CVRF), one of our first tasks is to estimate cardiovascular risk, which is nothing more than calculating the probability of a given vascular event occurring in a predefined period of time, according to their CVRF and the population group to which they belong. In other words, we try to know what the future will hold for that patient

if we do not change his or her evolution. After determining this level of risk, we must make decisions that, guided by the therapeutic objectives we set, will often lead to the initiation or modification of treatment.

This desire to calculate cardiovascular risk in advance has generated many tables for estimating it, the most widely used being those of the National Cholesterol Education Program-Adult Treatment Panel III (NCEP-ATP III) based on the Framingham equation modified by Wilson, and the SCORE³ (Systematic COronary Risk Evaluation), and its subsequent update SCORE 2 and SCORE OP.^{4,5} These tables, despite having been a great advance in the calculation of CVR, continue to have many limitations and we therefore continue to seek other indicators and/or indices that act as early evolutionary predictors.

At this point, it is important to remember that, although atherosclerosis has a multifactorial aetiology, lipid abnormalities are the main attributable risk factor for the development of CVD⁶ and account for about 50% of the risk. But we cannot assess cardiovascular risk in an optimal way⁷ merely with the determination of the classical serum lipid profile, meaning total cholesterol (TC), triglycerides (TG), high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C) and non-HDL cholesterol. And it is precisely to try to provide greater predictive value that several lipoprotein indices or ratios have been defined, in an attempt to provide information on other clinical and/or metabolic aspects, such as the greater atherogenicity of some lipoproteins, their inflammatory, antioxidant, antiangi-

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gregant, vasodilator activity, or their relationship with the metabolic syndrome.

The article by M. Slouma⁸ published in this issue of the journal *Clínica e Investigación en Arteriosclerosis* attempts to shed light on the usefulness of atherogenic indices as predictors of metabolic syndrome (MS) in patients with axial spondyloarthritis and whether these are modified after treatment with tumour necrosis factor inhibitor drugs. Their results show a higher frequency of (MS) in the population with axial spondyloarthritis than in the general population, which is consistent with that obtained in other chronic inflammatory diseases such as psoriasis, rheumatoid arthritis or systemic lupus erythematosus. The fact that atherogenic indices were significantly higher in patients with MS and that some of them were associated with high disease activity, as shown in their conclusions, is consistent with the already known relationship between lipid alterations, plaque progression, inflammatory processes and atherosclerosis. Undoubtedly, further work should continue to explore the usefulness of these markers in the identification of subgroups of patients at high cardiovascular risk.

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