Special article

Update in Cardiology: Vascular Risk and Cardiac Rehabilitation

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ABSTRACT

As in other fields, understanding of vascular risk and rehabilitation is constantly improving. The present review of recent epidemiological update shows how far we are from achieving good risk factor control: in diet and nutrition, where unhealthy and excessive societal consumption is clearly increasing the prevalence of obesity; in exercise, where it is difficult to find a balance between benefit and risk, despite systemization efforts; in smoking, where developments center on programs and policies, with the electronic cigarette seeming more like a problem than a solution; in lipids, where the transatlantic debate between guidelines is becoming a paradigm of the divergence of views in this extensively studied area; in hypertension, where a nonpharmacological alternative (renal denervation) has been undermined by the SYMPLICITY HTN-3 setback, forcing a deep reassessment; in diabetes mellitus, where the new dipeptidyl peptidase-4 and sodium-glucose cotransporter type 2 inhibitors and glucagon like peptide 1 analogues have contributed much new information and a glimpse of the future of diabetes treatment, and in cardiac rehabilitation, which continues to benefit from new information and communication technologies and where clinical benefit is not hindered by advanced diseases, such as heart failure. Our summary concludes with the update in elderly patients, whose treatment criteria are extrapolated from those of younger patients, with the present review clearly indicating that should not be the case.

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Novedades en cardiología: riesgo vascular y rehabilitación cardiaca

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RESUMEN

El conocimiento en las áreas de riesgo vascular y rehabilitación, como en otras, se enriquece constantemente. Esta revisión aborda las novedades en los campos de la epidemiología, terreno que muestra lo lejos que se está de alcanzar un buen control de los factores de riesgo: en alimentación y nutrición, donde se hace patente la creciente obesidad de una sociedad que consume mal y en exceso; en ejercicio, donde tan difícil es lograr el equilibrio entre beneficio y riesgo, aunque se están haciendo esfuerzos de sistematización; en tabaquismo, donde lo nuevo se centra en programas y políticas, área en que el cigarrillo electrónico aparece más como problema que como solución; en lípidos, donde el debate transatlántico entre guías se erige como paradigma de divergencia de criterio en un aspecto profundamente estudiado; en hipertensión, donde la alternativa no farmacológica (la denervación renal) ha visto surgir el contratiempo del SYMPLICITY HTN-3, lo que obliga a un replanteamiento en profundidad; en diabetes mellitus, donde los nuevos fármacos inhibidores de la dipeptidil peptidasa-4 y del cotransportador sodio-glucosa tipo 2 y análogos del péptido similar al glucagón tipo 1 aportan mucha información nueva y anticipan la que está por llegar, y en rehabilitación cardiaca, que las nuevas tecnologías de información y comunicación siguen enriqueciendo y con la cual la enfermedad más avanzada, como insuficiencia cardiaca, no es óbice para obtener beneficio. Se finaliza con las novedades

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en el paciente anciano, al que se aplican los mismos criterios que se extrapolan de los más jóvenes, cuando la presente revisión establece que no debe ser así.
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Abbreviations

BP: blood pressure
CR: cardiac rehabilitation
CV: cardiovascular
HT: hypertension

INTRODUCTION

Cardiovascular (CV) prevention befits advanced societies that not only act before disease appearance, but adopt more demanding criteria when the disease is already present. In keeping with the times, the concepts of effectiveness, efficiency, pharmacoeconomics, opportunity cost, and general health economics are interwoven in our daily work.[1] Interventions in primary CV prevention have a lower individual cost than those of the disease stages, but are applied to such broad swathes of the public that they end up costing much more and require a more thorough analysis, which is far from being well established. The present article covers the most important update of the past year in vascular risk and rehabilitation, with an effort made to summarize the developments most relevant to clinical practice.

EPIDEMIOLOGICAL ASPECTS

Just a century ago, CV disease caused less than 10% of all deaths. Propelled by industrialization, urbanization, and lifestyle changes, the 20th century saw an unprecedented increase in life expectancy, with a radical change in the causes and rates of mortality. Now the number one cause of death, CV disease is responsible for more than 30% of deaths worldwide, with a preferential distribution in economically developed countries.[2] Given the modifiable character of certain known risk factors, the efficient application of preventive strategies and therapies might alter the natural course of the epidemiological transition worldwide and thereby reduce the global impact of CV diseases. However, we are far from reaching excellence in this regard.

The data of the EUROASPIRE IV registry[3] showed that only 51% of patients had stopped smoking between 6 months and 3 years after a coronary event, 43% had blood pressure (BP) readings above target values, 81% failed to achieve the lipid control targets, and 59% had not participated in any CV risk prevention program.[4] These data agree with results of the PURE study,[5] conducted in patients with atherosclerotic CV or cerebrovascular disease. In this study, there was a low prevalence of healthy lifestyles, with only half quitting smoking, 39% following a suitable diet, and 35% performing physical activity. The Spanish data from the EUROASPIRE IV registry were slightly better than the European average (Figure 1), with 73% of patients quitting smoking, 40% with suboptimal control of BP, and 59% failing to achieve the target levels of low-density lipoprotein cholesterol, results that concur with those published in the ENRICA and BARBANZA group studies.[6,7] Notably, a high percentage of patients in most studies were receiving the treatments recommended by the guidelines, but most patients failed to achieve the control targets for their risk factors, indicating the need to encourage both the attending physician and the patient to individualize the dose and type of drug, as well as to prompt lifestyle changes.

The European guidelines on CV prevention are aware of this need, as well as the importance of tailoring the preventive strategy to the baseline patient risk.[8] Accordingly, the guidelines establish specific recommendations for controlling each risk factor, stratifying the baseline risk in accordance with the SCORE (Systematic Coronary Risk Evaluation). system. Cardiac rehabilitation (CR) is currently a class I recommendation in all clinical practice guidelines, meaning that its use is based on a demonstrated benefit in multiple studies; nonetheless, CR continues to be underused. Thus, all of the data appear to support the need to strengthen comprehensive and multidisciplinary prevention programs in which both patients and their families participate, as well as ensuring an organizational model that integrates primary and specialized care.[9]

DIET AND WEIGHT

The review of Arós and Estruch[10] on the Mediterranean diet is recommended nutrition-related reading because it summarizes the global impact of the Spanish PREDIMED study.[11] This trial has indisputably emerged as a benchmark in CV prevention and the researchers involved continue to publish data on the preventive aspects of the diet (30 articles already on PubMed from 2014 and more than 110 overall).[12] Similarly, the SUN study,[13] showed a reduced incidence of metabolic syndrome with a "pro-vegetarian" diet.

Another interesting publication is the epidemiological study Di@bet.es, which showed a high percentage of obesity (body mass

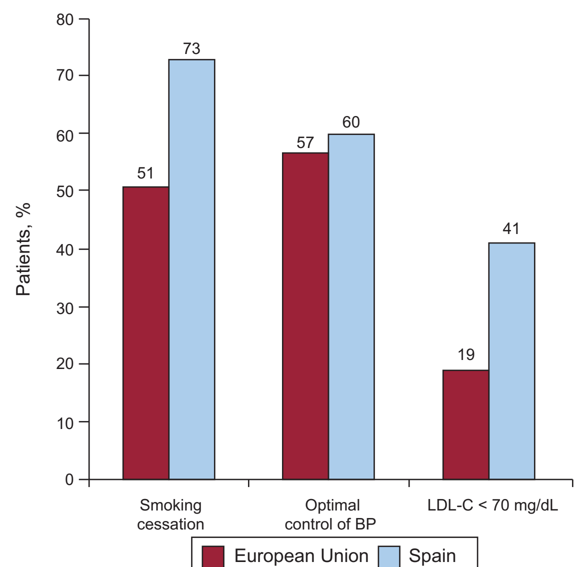

Figure 1. Distribution of patients with adequate control of cardiovascular risk factors after a coronary event, according to European Action on Secondary and Primary Prevention through Intervention to Reduce Events IV. BP, blood pressure; LDL-C, low-density lipoprotein cholesterol. Adapted with permission from Galve et al.[9]

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