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Editorial

Strengthening Primordial and Primary Prevention of Cardiovascular Disease to Increase Life Expectancy

Potenciar la prevención cardiovascular primordial y primaria para aumentar la esperanza de vida

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The article by García González published in the *Revista Española de Cardiología* demonstrates that life expectancy (LE) in Spain has increased by more than 6 years over the last 20 years, and that slightly more than half of this increase is due to the reduction observed in the mortality associated with cardiovascular disease (CVD).[1] This article is important for at least 2 reasons. First, because living longer, and better as well, has been an aspiration of the human being since the dawn of time; thus, the improvement in LE is closely related to the "Millennium Development Goals" of the United Nations, and LE is one of the most important indicators in the evaluation of health care policies. Second, because it illustrates the magnitude of the health gains that can be achieved by means of appropriate interventions against CVD.

The findings of García González agree with those obtained in other developed countries, in which the decrease in mortality due to CVD has also been accompanied by substantial increases in LE.[2,3] However, one characteristic that is specific to Spain is that the decrease in mortality due to stroke has contributed more to the gain in LE than the reduction in mortality attributable to ischemic heart disease or other heart diseases.

The gain in LE associated with the control of CVD has been somewhat greater in women (3.8 years) than in men (3.3 years). This circumstance is due to the concentration of the CVD burden, especially that of stroke, in more advanced age groups and the fact that more women reach those ages. Thus, the reduction in mortality due to CVD corresponds to 90% of the gain in LE in the oldest age groups.

As in other countries of the Mediterranean basin, the risk of ischemic heart disease in Spain has traditionally been low. We recorded a certain increase in the mortality due to this condition in the sixties and seventies, but since then it has decreased continuously to date.[4] In the case of stroke, in the middle of the last century Spain presented an intermediate mortality rate among the European countries, but the incidence has decreased uninterruptedly over the past 50 years; now, the rate of stroke mortality is lower than that attributed to ischemic heart disease.[5,6] No doubt these 2 phenomena have contributed to the fact that Spaniards, especially Spanish women, have one of the longest LE in the world.

Certain recent analyses have enabled us to understand the reasons for the reduction in mortality due to ischemic heart disease.[7] Approximately half of the decrease has been due to reductions in the incidence of risk factors, particularly with regard to cholesterol levels and arterial blood pressure. The other half corresponds to improvements in the treatment of the disease, especially in the management of acute coronary syndromes and in secondary prevention. A similar analysis has not been published concerning the decrease in stroke mortality, although the control of cardiovascular risk factors may also have contributed. Nevertheless, the mortality due to stroke began to decrease before the widespread use of antihypertensive therapy and the availability of specific treatments for stroke, which indicates that improved living conditions of the population, access to health care services, and general patient care have been key factors in the commencement of the reduction.

There is still a great deal of potential for reducing the mortality due to CVD and for increasing LE in Spain. This is true for several reasons. In the first place, there are considerable geographic differences in the mortality due to ischemic heart disease and stroke, which is traditionally higher in the regions of southern Spain and the island communities. Specifically, the mortality attributed to ischemic heart disease and stroke in 2008 in the autonomous community with the highest rate was approximately twice that of the community in which the mortality was lowest.[8] There are similar variations in the distribution of risk factors such as obesity, cholesterolemia, and the metabolic syndrome.[9,10] Thus, a substantial improvement in mortality due to CVD can be achieved by reducing the mortality in regions with the highest rate to the level of those with low rates by reducing the differences in major risk factors exposure. Secondly, the percentage of the population with ideal cardiovascular health is very low. To be more precise, less than 1% of the adult Spanish population is a nonsmoker whose body weight is within normal range, who engages in physical activity and maintains a healthy diet. Moreover, less than 9% are nonsmokers with optimal arterial blood pressure, cholesterol, and blood glucose values

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(in the absence of drug therapy).[11] To improve cardiovascular health to ideal levels, it is necessary to promote primordial prevention interventions, that is, to prevent the onset and development of risk factors at early and middle ages by means of appropriate public health strategies. This is important because once the risk factors have developed it is difficult to reduce the risk to the initial levels. Primordial prevention of CVD requires changes in the conditions of the social environment to make it easier to avoid starting to smoke, to eat less but healthily, and to remain physically active throughout life. This is not an easy task because it means engaging in a battle against strong industrial sectors; but it is possible with sufficient political courage and citizen support.[12]

On the other hand, it is necessary to improve the control of cardiovascular risk in the clinical setting. It is estimated that approximately 78% of the adults in the United States aged 20 years to 80 years are candidates for at least one of the preventive interventions included in the major clinical practice guidelines. If all of these individuals had access to the interventions, the incidences of myocardial infarction and stroke would be reduced by 63% and 31%, respectively.[13] The application of all the preventive interventions could lead to a gain in LE of 1.3 years over the next 30 years.[13] The interventions that can offer the greatest benefits are the treatment of high-risk individuals with acetylsalicylic acid, control of prediabetes, weight loss in obese patients, control of arterial blood pressure in diabetics, and reduction of low-density lipoprotein cholesterol in individuals with ischemic heart disease.[13] Some of these interventions are quite cost-effective, particularly treatment with acetylsalicylic acid and antihypertensive drugs in high-risk individuals and statin therapy for secondary prevention of CVD. On the other hand, although the benefits of smoking cessation in the overall population are smaller in quantitative terms, the interventions designed for this purpose are the only approaches that result in net cost savings over 30 years.[13]

The management of acute coronary syndromes and stroke should also be improved, as is indicated in the national strategies for health care for these 2 conditions in the Spanish National Health System. However, these interventions will have a relatively minor impact on LE. For example, 26% of the patients with an acute coronary syndrome die before they reach the hospital, and they constitute 78% of all those who die within the first 28 days.[4] For all of them, secondary prevention arrives too late. Although it is possible to accelerate the arrival of patients at the hospital (for example, a greater awareness of and a better approach to the warning symptoms and signs of myocardial infarction and stroke,[14] improved transport systems, etc.) and perform out-of-hospital treatment, the possible gains in this area have fairly narrow limits, even in the most highly developed countries. Thus, primordial prevention and primary prevention (control of existing risk factors) of CVD offer the best possibilities of achieving a benefit.

Other arguments in favor of primordial prevention are the limitations of the health care system itself for managing the risk factors linked to lifestyles, and especially the biological factors such as hypertension or a high blood glucose level. One third of the Spanish adult population is hypertensive.[15] Thus, more than 10 million individuals require continuous health care, mainly in the primary care setting. This constitutes an enormous effort on the health care and social level, with only modest results, because barely three fourths of the hypertensive individuals are adequately managed. This occurs because 40% of them are not aware of their condition and scarcely 50% of the treated hypertensive patients control their arterial blood pressure (23% of all the hypertensive individuals).[15] This effort can be made less of a challenge with appropriate strategies for the care of the chronically ill patient which, among other things, should increase the use of information and communication technologies and enable the patient to manage his or her own clinical situation. However, although these interventions can effectively improve risk factor control, they probably cannot offset the avalanche of patients with hypertension and diabetes who will gain access to the health care system in the coming years if the current epidemic of obesity is not controlled.[9] Thus, to continue to increase LE, it is essential to strengthen primordial and primary prevention of CVD by means of public health strategies.

CONFLICTS OF INTEREST

None declared.

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