From Efficacy to Effectiveness in the Secondary Prevention of Coronary Heart Disease

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It has been said that the dream of medicine for this millennium is that, as normal standard practice, the medical care of patients should be based on scientific evidence whenever possible and that this should be supported by randomized clinical trials and studies of effectiveness focused on the evaluation of final results (outcomes studies).[1]

For some diseases—such as cardiovascular disease—there is increasingly more evidence based on clinical trials, and that some of the questions regarding the efficacy of certain interventions have been very clearly answered, either in the form of positive or negative results. The following step should be to apply or "transfer" such research findings into clinical practice, a process which is both difficult and complex. Different studies suggest that between 30% and 40% of patients do not receive evidence-based health care, and that 20%-25% of health care is unnecessary or even detrimental.[2] It can be deduced from this that the strategies normally used to improve the quality of medical care—such as continuous medical education, clinical audits or others focused on the individual physician—are having a very modest effect. Thus, other options need to be investigated that would encompass a much broader spectrum of the health system, through the use of new information technologies, actively engaging physicians in activities focused on continuous improvement of medical quality, or nationwide implementation of clinical practice guidelines arrived at by consensus among the professionals themselves. The effectiveness of any new strategy will probably depend on local circumstances where the initiative is carried out and could hardly be extrapolated from other places with a different medical or sociocultural context. This is known as contextual evidence.[3] The physician has to assess, in addition to the results of clinical trials—"hard evidence"—other types of information, such as the sociocultural and psychological aspects of the patient as well as communication with the patient. This contextual evidence should be understood in order to narrow the gap between efficacy—what is useful in ideal conditions—and effectiveness—what works in clinical practice. The article describing the CAM project by Muñiz et al,[4] published in this issue of REVISTA ESPAÑOLA DE CARDIOLOGÍA, clearly addresses this subject and specifically evaluates an easily applicable intervention—a consensus of agreed minimums, and the preparation and dissemination of material to facilitate the fulfillment of these minimums—aimed to improve certain aspects of secondary prevention following acute coronary syndromes. The article describes a study involving 39 hospitals (distributed throughout Spain) where some significant changes were found in the physicians' attitudes over 1 year; the most noteworthy being the increase in the proportion of patients in whom cholesterol was determined in the first 24 h, height and weight measured, statins prescribed at discharge and recommendations given regarding tobacco and exercise; furthermore, an improvement was observed in recommendations for target values of low-density lipoprotein cholesterol (LDL-C). In addition, moderate changes were found regarding other aspects, such as treatment at discharge with angiotensin-conversion enzyme inhibitors (ACE inhibitors), platelet aggregation inhibitors or beta-blockers, although the baseline percentages were already very high. Despite the limitations recognized by the authors themselves, such as the lack of a control group or the voluntary involvement of the centers, this study shows that certain simple measures arrived at by consensus among the different professionals have an impact in clinical practice. In another study recently published in REVISTA ESPAÑOLA DE CARDIOLOGÍA—the PRESENTE study[5]—positive changes were also found regarding the control of cardiovascular risk factors with a simple educational intervention implemented at admis-

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sion. An interesting and innovative aspect of the CAM project is the concept of ideal patients, that is, those who, according to the minimums agreed among the researchers, should receive a given treatment or procedure. For example, in the baseline survey (results shown in Table 4), it was found that the percentage of ideal patients (excluding from the denominator those who had an absolute or relative contraindication to the drug) receiving beta blockers was 88.9%, ACE inhibitors 89.3%, platelet aggregation inhibitors 95.9%, and statins 68.6%, indicating that there is a potential for increases in prophylactic treatment of 11%, 11%, 6%, and 31%, respectively. After the intervention, when analyzing the third survey, these percentages were 7%, 10%, 2%, and 19%, respectively. In a study carried out in a smaller region, i.e. in four hospitals in Catalonia and their associated primary care centers,[6] data on prophylactic treatment following a first myocardial infarction were also analyzed 2 years after discharge (in 1999), taking into account the absolute and relative contraindications for the drugs. Specifically, it was found (data not published in the article) that the real potential increase that should be gained from treatment with beta-blockers was 22%, ACE inhibitors 18%, platelet aggregation inhibitors 7%, and lipid-lowering drugs 18%. It would be interesting in the future to analyze these estimators more rigorously and consensually, because these are the ones that really indicate what efforts have to be made to achieve the optimum objectives, also known by some authors as community standards.[7]

Another interesting aspect of the agreed minimums developed in the CAM project is that data regarding the target levels and doses of lipid-lowering drugs should be stated in the discharge report, as well as the target doses of ACE inhibitors or beta-blockers, when indicated. This is important because it is not enough to simply prescribe the drug; the dose must be adjusted to obtain the maximum benefit. For example, even if the patients had been receiving lipid-lowering drugs, the greatest benefit would have been obtained if they had succeeded in reducing the amount of total cholesterol or LDL-C to the therapeutic levels recommended today. This information can be very useful as a reminder to the physician who will be treating the patient outside the hospital context. Unfortunately, the percentage of patients who were provided with this information in the last survey was low, with only a very modest improvement compared to the baseline survey, especially in regard to beta blockers and ACE inhibitors. Thus, whereas 92.9% and 90.4% correctly received beta-blockers and ACE inhibitors, in only 27.1% and 29.1% of patients was the target dose stated, respectively. It would be of interest if future studies, outside the hospital context, evaluated the percentage of treated patients who really receive the desired dose of these drugs.

The CAM study offers us a model for a simple and easy-to-apply intervention in patients with acute coronary syndromes at admission and discharge. The next step is to assess whether these indicators persist over time and, in tandem, to evaluate strategies to improve secondary prevention in coronary patients followed up outside the hospital context, either by external cardiologists, the primary care physicians or both.

In this regard, it is worth mentioning here that one of the projects financed by the Fondo de Investigación Sanitaria (Health Research Fund) is a coordinated multicenter project (Evaluation of the efficacy of a comprehensive program of secondary prevention of cardiovascular disease in primary care [PREseAP study]) to evaluate, through an intervention study in randomized centers, a comprehensive program for secondary prevention of cardiovascular disease (coronary disease, ictus and peripheral vascular disease) in primary care, in 40 centers in 7 autonomous communities.[8]

Without doubt, once the results of the evaluation of these strategies are obtained and implemented in practice, we will be succeeding in improving "the transfer" of the results of clinical trials to clinical practice, improving the quality of medical care in patients with coronary syndromes, and improving its prognosis.

REFERENCES

1. Campbell W, Scanlon DM. Bridging the GAP between research and practice. The role of continuing medical education. JAMA 1997;277:155-6.
2. Grol R, Grimshaw J. From best evidence to best practice: effective implementation of change in patients' care. Lancet 2003;362:1225-30.
3. Van Weel C. Examination of context of medicine. Lancet 2001; 357:733-4.
4. Muñiz J, Gómez Doblas JJ, Santiago Pérez MI, Teresa Galván E, Cruz Fernández JM, Castro Beiras A. Efecto de un programa sencillo de educación de los profesionales en el cumplimiento de medidas de prevención secundaria en el momento del alta hospitalaria tras un síndrome coronario agudo. Proyecto CAM. Rev Esp Cardiol 2004;57:1017-28.
5. de Velasco JA, Oya M, de Teresa E, en nombre del grupo de investigadores del estudio PRESENTE. Programa de intervención para mejorar la prevención secundaria del infarto de miocardio. Resultados del estudio PRESENTE. Rev Esp Cardiol 2004;57:146-54.
6. Grupo de Investigación del estudio PREMISE. Prevención secundaria del infarto de miocardio y calidad de vida relacionada con la salud. Med Clin (Barc) 2002;119:9-12.
7. Pearson T, Peters TD. The treatment gap in coronary artery disease and heart failure: community standards and the post-discharge patient. Am J Cardiol 1997;80:H45-52.
8. Fondo de Investigación Sanitaria. Evaluación de la eficacia de un Programa Integral de prevención secundaria de la enfermedad cardiovascular en Atención Primaria: estudio PREseAP (Exp. PI031421) (non punblisted).