

## Clinical Practice and Education

**Averting a pandemic health crisis in Europe by 2020: what physicians need to know regarding cholesterol management**Alberico L. Catapano<sup>a</sup>, Terje R. Pedersen<sup>b</sup> and Guy de Backer<sup>c</sup><sup>a</sup>Centre for the Study of Atherosclerosis, Marie Curie Training Centre for Cardiovascular Diseases, University of Milan, Milan, Italy, <sup>b</sup>Ullevål University Hospital, Oslo, Norway and <sup>c</sup>Department of Public Health, Ghent University and University Hospital, Ghent, Belgium

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**Background** Cardiovascular disease (CVD) represents a major cause of premature death, disability, and escalating healthcare costs throughout Europe. According to a recent report by the Stockholm Network (an independent European 'think tank'), major political, economic, social, and medical changes are urgently needed with respect to cholesterol management to help prevent CVD.

**Methods** To identify key cholesterol management issues that practitioners should consider to help prevent an impending European health crisis, our collective experience of policies and practices relating to CVD and cholesterol management in our respective countries was consolidated and used to develop this commentary.

**Results** Physicians and healthcare workers are uniquely positioned to make immediate and meaningful improvements in preventing and treating CVD if they recognize and address a handful of key clinical issues pertaining to cholesterol management. These issues include utilizing newer combination therapies and realizing the limitations of statins, improving compliance with cholesterol-lowering therapies, promoting a healthy lifestyle and diet, making treatment decisions based on patients' total CVD risk, fostering communication between primary and secondary providers, and soliciting governmental funding to implement disease management programmes.

**Conclusions** By promptly and effectively addressing these cholesterol management issues, physicians and other healthcare professionals have an unprecedented opportunity to help reduce CVD in Europe to lessen the personal, social, and economic impact of this devastating disease. *Eur J Cardiovasc Prev Rehabil* 14:340–345 © 2007 The European Society of Cardiology

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**Introduction**

In most European populations, cardiovascular disease (CVD) represents a major cause of premature death, disability, and escalating healthcare costs. According to the 2005 European Cardiovascular Disease Statistical report, CVD results in over 4 million deaths each year in Europe (over 1.9 million in the 25 countries comprising the European Union), and is associated with total costs of approximately €169 billion, €64 billion as a result of lost productivity and costs of care and €100 billion for direct

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represents one of three principal risk factors for CVD. A recent report entitled 'Cholesterol: the public policy implications of not doing enough' produced by the pan-European think-tank Stockholm Network, reviews the potential impact of current uncontrolled cholesterol levels on European economies, societies, and healthcare structures by 2020 [3]. This report was made possible partly by an educational grant from Merck Sharp and Dohme and Schering-Plough Corporation. The Stockholm Network report arrived at several important conclusions pertaining to cholesterol management in Europe. First, a wide treatment gap exists between the recommended target cholesterol levels and those typically achieved in everyday clinical practice, even though numerous national and international treatment guidelines are available to help guide physicians in effectively managing their patients' cholesterol levels. Second, there are newer cholesterol treatments now available that could help close this cholesterol treatment gap. Third, major political, economic, social, and medical changes are urgently needed with respect to cholesterol management as an essential part of a comprehensive strategy to prevent CVD. In the present article, we briefly explore some of the cholesterol management issues that practitioners should consider to help prevent a European health crisis.

**What can practitioners do to improve cholesterol management?**

Available clinical evidence shows a continuous positive relationship between coronary heart disease (CHD) events and cholesterol levels [4,5]. Elevated cholesterol levels, therefore, need to be treated aggressively to help prevent disability and death by lowering the patient's risk of developing primary or secondary clinical events as a result of CHD, ischaemic stroke, and peripheral artery disease. The 2003 European guidelines from the Third Joint Task Force of European and other Societies on Cardiovascular Disease Prevention in Clinical Practice on CVD prevention recommend that total plasma cholesterol should be below 5 mmol/l and low-density lipoprotein (LDL) cholesterol should be below 3 mmol/l [2].

Despite the mortality and morbidity benefits clearly demonstrated with lipid-lowering therapies, particularly with 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors (statins), physicians have either been reluctant to implement treatment guidelines, resulting in a substantial treatment gap between such best practice guidelines and real-life cholesterol management, or have implemented the treatment guidelines but have found that the use of statins has fallen short of delivering the efficacy needed. For example, the EUROASPIRE II study [6], undertaken in 15 European countries in 1999–2000, revealed that nearly 50% of patients on lipid-lowering therapy (primarily statins) were not achieving their total

cholesterol goal. Recent clinical trial evidence using intensive statin therapy is expected to result in even more aggressive goals for LDL-cholesterol and total cholesterol, particularly in patients with established CVD and in high-risk subjects.

In light of the findings of the Stockholm Network report, it is clear that much needs to be accomplished on a political, economic, social, and clinical practice level if we are going to effect substantial improvements in cholesterol management across Europe over the next two decades. Nevertheless, physicians and other healthcare professionals are at the front line of CVD management, and are uniquely positioned to make immediate and meaningful improvements in preventing and treating CVD if they recognize and address a handful of key clinical issues pertaining to cholesterol management. These issues are explored and discussed in the sections to follow.

**Compliance, concordance, and adherence with cholesterol-lowering therapies**

In general terms, compliance refers to the extent to which a patient's behaviour matches the advice given by a healthcare professional. The term is most often used in the specific context of whether a patient takes his or her medication regimens as directed, but can also pertain to other aspects of the physician–patient dynamic, including, for example, whether the patient attends clinic appointments as scheduled, makes recommended lifestyle changes including a healthy diet and regular exercise, and completes recommended diagnostic evaluations such as echocardiography and cardiac stress testing [7]. It is well recognized that many patients fail to comply with their doctor's recommendations to take their medication, particularly when the therapy is given for chronic, asymptomatic illnesses.

Non-compliance with cholesterol-lowering regimens may theoretically result from a host of reasons, including, for example, a lack of belief in the benefit of treatment, a lack of insight into the disease, a general dislike of taking drugs in general, a fear of adverse effects, inadequate follow-up or discharge planning, risks perceived to outweigh benefits, complexity of treatment, cost of medication, difficulty remembering to take the drug, lack of efficacy, poor relationship with their physician, and a lack of confidence in their clinician's decision [7–9]. The important question to consider is what can physicians do about improving patient non-compliance with lipid-lowering therapies. Several strategies are worth noting in this regard, depending on the reason(s) the patient is non-compliant, and these are summarized in Table 1 [8]. However, it should also be appreciated that, in addition to compliance issues relating to the use of lipid-lowering therapies, statins have limitations in terms of peak efficacy performance and the achievement of guideline cholesterol goals, as discussed in later sections.