

Prevention of atherosclerotic cardiovascular disease is possible but poorly put into practice

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Atherosclerotic cardiovascular disease (ASCVD) is still a major cause of premature mortality, disability-adjusted life years, and increasing health care costs worldwide. The dynamics of the epidemic of ASCVD have been and still are very different between countries, and within a country between regions. This has been well documented in the World Health Organization MONICA (Multinational Monitoring of Trends and Determinants in Cardiovascular Disease) project¹ in which results from 2 regions from Poland were included.

Research units from Poland did also participate in the World Health Organization European Collaborative Group trial in which it was demonstrated that in middle-aged men, lifestyle changes were effective for the prevention of coronary heart disease (CHD) to the extent that they were accepted and put into practice.²

The potential of the primary prevention of ASCVD has been demonstrated in various randomized controlled trials and in cardiovascular community projects. Some of these projects such as the North Karelia Project³ resulted in impressive health benefits while other were less successful leading to criticism and debates.^{4,5} However, we need to remember that in intervention studies, differences in the incidence of ASCVD between intervention and control groups can only be expected to the extent to which the cardiovascular risk profile has been influenced differently between these groups.⁵

The potential of prevention of ASCVD has been summarized in guidelines by joint task forces of the European Society of Cardiology and other scientific societies from 1994 onwards with the last update in 2016.⁶ These guidelines on cardiovascular disease prevention in clinical practice contain numerous recommendations

regarding lifestyle adaptations and optimal control of the major cardiovascular risk factors. Surveys have been conducted to evaluate how well these guidelines are implemented in daily practice; among them the EUROASPIRE (European Action on Secondary and Primary Prevention Through Intervention to Reduce Events) surveys, launched in 1995, with Poland participating from the EUROASPIRE II survey in 1999 to 2000 until EUROASPIRE V in 2016 to 2017.^{7,8} In these surveys, it was demonstrated in patients with CHD and in those at high cardiovascular risk, that lifestyle adaptations and risk factor control are poorly implemented when compared with what is recommended in the guidelines.^{7,8} This was confirmed in a large group of coronary patients from 4 geographical areas in Poland (POLASPIRE).⁹

Over the last 2 decades, some improvements have been made, but the majority of targets are not reached especially when it comes to lifestyle adaptations.

The barriers to better results have to do with factors related to patients, practitioners, and to healthcare systems. Once identified, they should be tackled with strategies that should be evaluated as to their effectiveness, safety, and cost-efficiency. Innovative management programs were developed and tested, among them the EUROACTION (Nurse-coordinated Multidisciplinary, Family-based Cardiovascular Disease Prevention Program) program. It has been tested at the international level and the results were promising.¹⁰ In this issue of *Kardiologia Polska (Kardiol Pol, Polish Heart Journal)*, the results are presented from the Polish component to the EUROACTION; in addition, a long-term mortality follow-up is available in that study.¹¹ With a structured, nurse-led, comprehensive,

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primary and secondary prevention program, improvements were achieved in lifestyle and in risk factor control using a paired, cluster-randomized controlled trial design. These improvements were associated with a reduction in mortality. Although these results are encouraging, there is scope for improvement, especially when considering the results after 12 years when most of what had been achieved in the beginning was lost on the exception of some dietary habits. There is a need for a continuous support by a network of health professionals with expertise in smoking cessation techniques, exercise prescription, and dietary counselling. Physicians play a crucial role in drug prescription to control the major cardiovascular risk factors. It is surprising and alarming to see that among the patients with ASCVD in the intervention group of the Polish component to the EUROACTION, only 49% and 55% were on respectively antiplatelet agents and statins at 12-year follow-up; the advantage of these drugs for secondary prevention of ASCVD has been well documented. In order to close the gap between the potential of ASCVD prevention and the implementation of that knowledge into practice, there is a need for a sustainable interdisciplinary intervention not only during a short time period but integrated in a continuous follow-up of patients and high-risk subjects. Prevention of ASCVD should be implemented at all levels of society and in all healthcare settings. Healthcare workers should consider health promotion and preventive cardiology as a crucial part of their professional responsibilities and should be well trained in monitoring and advising adherence to healthy lifestyles and to long-term drug therapies. Increasing the health literacy of patients is another major challenge that can reinforce the patient-doctor relationship allowing the patient to participate in informed decision making.

The EUROACTION is not the only trial in which the effects of a nurse-coordinated preventive cardiology program was tested. In the Netherlands, advanced practice nurses did achieve results equal or better than general practitioners for the management of cardiovascular risk factors.¹² In the RESPONSE (Randomised Evaluation of Secondary Prevention by Outpatient Nurse Specialists) trial among patients after an acute coronary syndrome, a better control of cardiovascular risk factors was observed in the intervention group with also fewer readmissions.¹³ Maintaining healthy lifestyle habits may be a problem in many patients. Therefore, longer-term support for adherence may be needed. In the GOSPEL (Global Secondary Prevention Strategies to Limit Event Recurrence After MI) trial in patients after an acute myocardial infarction, a multifactorial intervention following a cardiac rehabilitation program was tested over a 3-year period. Compared with usual care, the intervention group

had improved healthy lifestyle habits and risk factor control maintained throughout the study period and the intervention was associated with less recurrent cardiovascular events.¹⁴ In other projects conducted in France, China, Spain, Brazil, Australia, and New-Zealand, nurse-led models, developed in an interdisciplinary way with other health care professionals, have shown to be effective in improving the implementation of guidelines on ASCVD prevention.¹⁵

In conclusion, there is considerable potential to prevent ASCVD through effective lifestyle interventions and a rigorous control of dyslipidemia, arterial hypertension, and dysglycemia in patients with ASCVD and in those at high cardiovascular risk. Having identified the barriers to a better implementation of evidence-based guidelines, one should overcome them using interdisciplinary intervention programs embedded in various healthcare facilities with a long-term regular follow-up.

ARTICLE INFORMATION

DISCLAIMER The opinions expressed by the author are not necessarily those of the journal editors, Polish Cardiac Society, or publisher.

CONFLICT OF INTEREST None declared.

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