Rethinking management of risk factors in secondary prevention of cardiovascular disease

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GENERAL DISCUSSION:
Rethinking current concepts and strategies
I got back on my feet again, and when I came home, I wasn’t really frightened anymore. After my heart attack, I took steps to improve my lifestyle. I managed to stop smoking all by myself and wanted to exercise more. Together with my dog or with my wife I go for a walk or a bicycle ride every day. That is enjoyable and keeps me fit. Exercise has become second nature to me. Since I lost quite a lot of kilos with the weight reduction programme in RESPONSE 2 (Weight Watchers) I notice that I have more energy. Of course, I have to take pills now, that is also part of it. I benefited a lot from the consultations with the nurse during the cardiac rehabilitation. She encouraged me to participate in the lifestyle programmes, on my own I would not have done it. I know what’s good for me now, much better than before all this happened. ’
(Mr P. Sanders, 63 years old)
Rethinking nurse-coordinated care

Based on this thesis, a number of concepts, definitions and strategies in secondary prevention merit rethinking. First, nurse-coordinated care as described in the current scientific literature covers concepts that are broad and heterogeneous. One of the central findings of our meta-analysis is that trials investigating nurse-coordinated care rarely adhere to or report on the definition of such care coordination. Our meta-analysis therefore provides a number of recommendations to assist researchers and clinicians when designing future nurse-coordinated care studies. These recommendations include consistently applying a (generally accepted) definition of nurse-coordinated care and selectively including proven effective components of the nurse-coordinated interventions, as opposed to letting included components be based on usual care and local expertise and preferences. Additionally, nurse-coordinated care should not refer to the coordination of the nurse’s own work, but the nurse’s role in facilitating multidisciplinary teamwork.

The success of the RESPONSE-2 trial also highlights an important pitfall. While demonstrating that care coordination with selected lifestyle programmes leads to a clinically important improvement in lifestyle risk factors, the control of two central biometric risk factors, LDL-cholesterol and blood pressure, was disappointing. The RESPONSE-1 trial successfully focussed on pre-defined targets for these risk factors, with clearly defined actions and/or interventions (medication assessment and titration, and referral). The use of these components was reflected in more patients achieving risk factor target levels at follow-up. In RESPONSE-2, we aimed to evaluate referral to lifestyle programmes on top of the already investigated effective components found in RESPONSE-1. However, the study protocol of RESPONSE-2 did not emphasize treatment to target for blood pressure and LDL-cholesterol to the same degree as RESPONSE-1. This might explain the modest rates of targets being met in the patients attending the nurse visits. Our experiences after conducting two large RCTs and one comprehensive meta-analysis highlight the importance of not only clearly defining intervention components, but also implementing detailed protocols next to training and monitoring to ensure adherence to the pre-defined interventions.

Rethinking secondary prevention

To reduce the impact of cardiovascular disease and to improve secondary prevention, the European Society of Cardiology (ESC) takes responsibility for education and training of health care professionals. Guideline implementation is a part of the ESC education programmes to support health care professionals in clinical practice. The Euro Heart Survey Programme, of which the EUROASPIRE surveys are part of, monitors to what
extent clinical practice adheres to guideline recommendations. The registries are part of a so-called ‘quality loop’: research is the cornerstone, leading to the development of (European) guidelines, followed by education as part of guideline implementation, and finally, the adherence to guideline recommendations are evaluated in international surveys. For secondary prevention, the EUROASPIRE surveys have been conducted to evaluate adherence to the guidelines since 1995.

The results of the EUROASPIRE surveys show that despite dissemination of evidence-based guidelines, the integration into routine clinical practice is disappointing. The rate of adherence is likely to be influenced by several factors. Health care systems in European countries differ, and subsequently the interpretation of the guideline will not always be uniform. As an example, the physician to nurse ratio is an important factor, with wide variation across countries, as well as the extent to which relevant treatments are reimbursed. It should be taken into account that health care professionals may not be familiar with or might not agree with the new guidelines. For this reason, it is of importance that national professional associations critically appraise the European guidelines. Furthermore, the guideline may not sufficiently take into account that lifestyle recommendations should not ignore the complexity of lifestyle modification. To what extent and in which circumstances will lifestyle related risk factor targets be sufficiently realistic?

When interpreting the EUROASPIRE survey findings and using these to evaluate secondary prevention and the contribution of these surveys to the so-called ‘quality loop’, a number of points should be kept in mind. Participants were identified retrospectively from diagnostic registers and encouraged to participate in the survey. Such (motivated) patients may therefore not be a representative sample of all patients with coronary heart disease. Non-participants are more likely to have unhealthy lifestyles and poorer health status. Hence, the selection of participants may lead to overestimation of the quality of current clinical practice in secondary prevention of coronary heart disease, and even in these patients the quality of secondary prevention leaves much to be desired. Furthermore, the target population consisted of consecutive patients less than 70 years of age (EUROASPIRE I, II) and less than 80 years of age (EUROASPIRE III, IV). Given the ageing population of post-industrial nations and consequently, the growing number of elderly people with cardiovascular diseases, age limits in cardiovascular disease study populations are outdated.
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Lifestyle modification, future directions

Unexpectedly, based on our findings, in a subset of patients (i.e., immediate quitters) smoking cessation support may be less urgent than currently assumed. Current prevention guidelines advise smoking cessation counselling in all (pre-event) smokers, regardless of characteristics of quitting. However, after evaluating smoking cessation in two large randomised trials in secondary prevention, this recommendation needs to be reconsidered. Our findings support a strategy in which clinicians can differentiate between immediate and late quitters. In the RESPONSE-1 and RESPONSE-2 trials, an unequivocal finding was that additional relapse prevention, through nurse counselling or a community based, comprehensive smoking cessation programme seems unnecessary - or even counterproductive - in immediate quitters.9 Based on the RESPONSE-2 trial, with the benefit of hindsight, our findings suggest that in a large group of patients who quit immediately after hospitalisation for coronary heart disease, a smoking cessation or relapse prevention programme was not needed. Especially patients who have a higher level of education, who suffered from a first event, and ‘immediate quitters’ after hospitalisation have low recurrence rates in the absence of support programmes. Patients who quit smoking are more frequently motivated to participate in other lifestyle programmes, such as a physical activity programme. Motivations for this may be the wish to reduce withdrawal symptoms through exercise or to manage weight gain secondary to smoking cessation. While there is insufficient evidence to recommend exercise as a smoking cessation strategy10, our findings suggest that participation in a smoking cessation programme in immediate quitters should not have a higher priority than an exercise programme in terms of overall risk factor management. Furthermore, there is strong evidence to recommend exercise as an aid for reducing tobacco withdrawal and cravings.10 Our results support a comprehensive approach to lifestyle risk modification and suggest that we should rethink the currently prevalent ‘single risk factor approach’. Future research should investigate how to optimally select patients for dedicated prevention programmes directed at smoking cessation and/or physical activity.

To date, all modern secondary prevention trials have focused on success rates in reaching (pre-defined) target risk factor levels. However, improvement of one lifestyle-related risk factor often results in deterioration of another lifestyle-related risk factor - a finding that is consistently underreported in most major prevention trials. Therefore, outcome measures in future trials should apply a more rigorous standard to define successful outcomes. We recommend that such outcomes should incorporate pre-defined thresholds for ‘no deterioration’ in other risk factors (not targeted by the evaluated intervention) as a new standard in outcome measures. Alternatively, the outcome measure should reflect a quantitative estimation of overall risk. Other investigators have evaluated a ‘medical’ approach to improve healthy lifestyles in
secondary prevention of coronary heart disease. The OPTImal CArdiac REhabilitation (OPTICARE) trial assessed the effects of two advanced and extended cardiac rehabilitation programmes compared with current standard cardiac rehabilitation in coronary patients. At 18 months, patients in the two intervention arms had higher health-related quality of life and were less anxious as compared with usual care. However, there were no differences between the groups in mortality risk reduction as measured by SCORE (intention-to-treat analysis). These findings highlight the importance of investigating non-medical interventions for lifestyle modification in coronary patients.

While nurse-coordinated referral to lifestyle programmes has been shown to successfully modify risk in the short term, longer follow-up data are needed to evaluate whether the positive effects persist after discontinuation of the programme. To address this issue, we are currently collecting follow-up data in RESPONSE-2.

In conclusion, nurse-coordinated care, including community-based lifestyle programmes, improves lifestyle risk factors, and is a valuable addition to the current usual care. Such programmes can easily be implemented on a large scale, due to extensive availability. When implementing nurse-coordinated care, clear definitions and targets are needed in such programmes, and both improvement and deterioration of risk factors should be included in the evaluation. Based on our data, the current preventive guidelines should be revised to reflect this.
References


