

# New model of secondary cardiovascular prevention for patients after acute coronary syndromes in Poland with regard to Norwegian experiences

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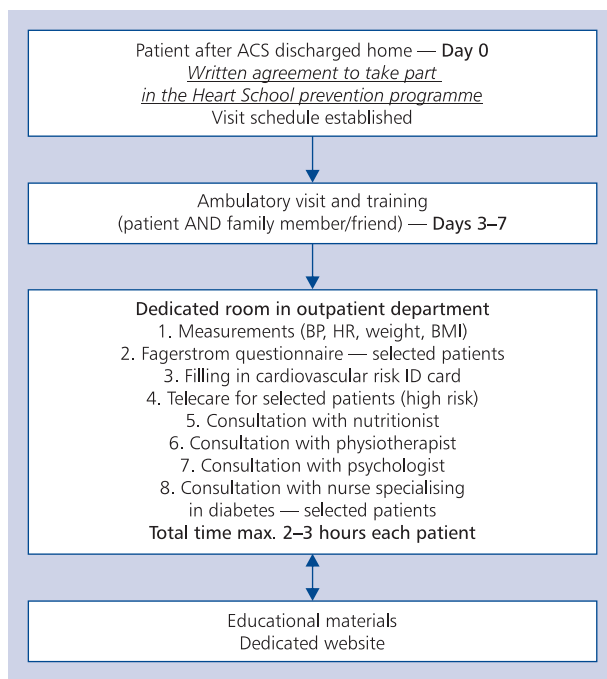
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At present Poland is well saturated with invasive cardiology centres that are equally distributed across the country. The national percutaneous coronary intervention (PCI) database (ORPKI) identifies as many as 155 such centres in 2015, which makes it well in line with the European Society of Cardiology (ESC) recommendations of at least one catheterisation laboratory per 300,000–1,000,000 inhabitants [1, 2]. The well-planned development and organisation of invasive cardiology in the last two decades has brought Poland to the third place in Europe in terms of number of primary PCI in ST elevation myocardial infarction (STEMI) per million inhabitants per year and has led to the fulfilment of all criteria required by the “Stent for Life” initiative [3]. The quality of percutaneous treatment of patients in Poland has improved and grown in numbers, and has followed international trends in the adoption of modern PCI techniques and utilisation of novel devices and medications [4]. Nevertheless, the incidence rates of new onset myocardial infarction (MI) are still higher in Poland than in Western Europe [5, 6]. At the same time, some disturbing data on the long-term outcome of patients after MI in Poland have been published [5]. Although the in-hospital mortality in acute MI has decreased in recent years in all age groups, the mortality after discharge and up to one year is still high (up to 21% in those treated conservatively; overall 10.1%), but this depends on the mode of treatment (lowest in patients treated initially with PCI — 6.5%). These recent data confirm that both primary and secondary prevention measures in general are ineffective and fail in their current form to bring us closer and faster to European counterparts, and more effort and a nationwide approach need to be made to improve them.

Current ESC STEMI guidelines provide only general measures in secondary prevention like lifestyle changes (diet and weight control or smoking cessation) and focus mainly on pharmacotherapy [1]. A more detailed approach, however, is discussed in the 2012 ESC prevention guidelines [7]. These stress the necessity of a population-based approach to secondary prevention as recommended by the National Institute for Health and Care Excellence and underline the role of sustained contact with patients and their adherence to prevention schemes, triggering motivation, establishing cooperation with non-governmental organisations with a special focus on nurses’ coordinated programmes with healthcare providers and helping to launch self-help patient groups. The most important conclusion from the above-mentioned guidelines is the fact that all of these pay off in terms of cost-effectiveness analysis. Specific Polish recommendations on prevention were published in 2013 and provide a detailed approach to patients after acute coronary syndromes (ACS), bypass surgery, and heart failure. Both cardiac rehabilitation and education are advised at different phases of these prevention programmes [8]. The authors of this proposed optimal and complex model of secondary prevention underline the fact that such measures have already been positively tested in the Polish population in

the EUROACTION project [9]. Nevertheless, further studies revealed that the implementation of secondary prevention guidelines in patients after hospitalisation for coronary artery disease in Poland noted a modest improvement only in blood pressure control [10]. In fact, the proportion of patients after unstable angina or PCI who were advised in the prevention programme decreased significantly in Poland in 2012 compared to 2006. What is also interesting, the proportion of oral advice given by medical personnel decreased in favour of printed materials handed out to patients. It seems that a modern substitute was chosen more often since it is always easier to give out booklets than to actually speak to the patients and answer their questions. In the end, the prevalence of cardiovascular risk factors in Poland is still based on quite old data from the WOBASZ study, but hopefully new data will become available soon to see if any changes have occurred during the last decade [11].

All of the above mentioned led to the development of a unique secondary prevention programme of a Patient Club in south and eastern Poland in 2011 adopted by 13 interventional cardiology centres [12]. The idea of patient educational meetings held 1–2 months after ACS or PCI, which encompass not only lectures and advice given by doctors and nurses but also cardiopulmonary resuscitation training and hands-on PCI simulation with an opportunity to meet patients from different centres and socialise during Nordic walking sessions or once a year during a Central Patient Club in Krakow have proven to be successful in terms of reduction of hazardous habits and increasing healthy lifestyle changes. The initial experience of the Polish Patient Club was discussed with our Norwegian partners during a two-day seminar held in Krakow on March 27–28, 2015. Oslo University Hospital (OUS), Ullevål, Oslo, Norway has developed a secondary prevention programme for patients hospitalised for ACS. They arrange monthly Heart School meetings for patients and their relatives who have experienced an ACS, lasting for one day. Information about the Heart School programme and coronary heart disease in general is given by a specially trained nurse at the beginning of this meeting. A cardiologist then presents information about coronary heart disease, risk factors, treatment with PCI, and coronary arterial bypass surgery. The most frequently used cardiovascular medications, how they work, and the most common side effects are also discussed by a pharmacologist. The participants are encouraged to be active and present their own questions, experiences, and worries. Then a nutritionist gives advice about dietary matters, and a physiotherapist informs the patients about physical activity after ACS. At the end of day an equally matched person has some time to discuss any issues that were not mentioned earlier. Early after discharge from the hospital, patients are also invited to participate in a group-based exercise training programme guided by a physiotherapist, 2–3 times a week for 8–12 weeks, based on the Norwegian Ullevål model [13]. Patients with increased risk for recurrent coronary events



**Figure 1.** Heart School programme of secondary prevention; ACS — acute coronary syndrome; BMI — body mass index; BP — blood pressure; HR — heart rate

are referred to the Department of Preventive Cardiology, OUS for further evaluation of risk factors and intervention.

Based on Polish and Norwegian experiences, a new optimal model of patient education after ACS treated in interventional cardiology centres was introduced and was unanimously approved by patient representatives from cardiology departments participating in the Patient Club initiative during the Polish–Norwegian seminar in Krakow. The suggested Heart School model that we introduced focuses on intense educational programme for patients and their family members at an early stage after hospital discharge (Fig. 1). We believe that the optimal timing for such intervention is 3–7 days after PCI for ACS. Earlier education in hospital may not be effective due to the stressful situation caused by ACS and the lack of time by medical staff during discharge, as well as the patient's desire to return home as quickly as possible. On the other hand, later educational intervention (four weeks and later) may be insufficient due to the fact that patients may already return to their bad habits and feel safe in terms of further morbidity. The Patient Club meetings were certainly beneficial but insufficient in terms of optimal timing of the intervention. The Heart School is a comprehensive approach to proper education for secondary prevention in cardiovascular diseases. We do not contradict the already existing rehabilitation schemes provided by the ESC

nor any Polish authors but wish to enhance and fill in the missing gaps. The first innovative Heart School has already been launched in Poland and we hope that the model will spread and evolve based on physicians' and patients' feedback. We plan to publish the first scientific data on its benefits in 2016.

**Conflict of interest:** none declared

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