

The control of cardiovascular risk factors – an essential component of the rehabilitation of patients with ischemic heart disease. What are the current targets?

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Abstract

Cardiovascular diseases continue to cause the highest mortality in Europe, among both men and women. Ischemic heart disease is responsible for most of these deaths. An important role in decreasing mortality and improving the prognosis of patients diagnosed with this disorder is played by cardiovascular rehabilitation programs. The short hospitalization period of patients with acute coronary syndromes who undergo revascularization procedures (in-hospital rehabilitation) becomes extremely useful to determine the cardiovascular risk factors underlying the development of these diseases and to implement lifestyle changing measures. Patients with ischemic heart disease included in rehabilitation programs will not only have the advantage of an increased exercise capacity, but they will also be monitored by qualified medical personnel for the evolution of cardiovascular risk factors. We aim to summarize the objectives to be targeted regarding these risk factors in the presence of a patient with ischemic heart disease included in cardiovascular rehabilitation programs.

Key words: *cardiovascular risk factors, cardiovascular rehabilitation,*

1. Introduction

Cardiovascular diseases continue to cause the highest mortality in Europe, among both men (41%) and women (49%) (1) while remarkable progress has been made over the past 25 years to reduce inequalities between the different European regions in terms of socioeconomic conditions (2). Ischemic heart disease is responsible for most of these deaths (1). An important role in decreasing mortality and improving the prognosis of patients diagnosed with this disorder is played by cardiovascular rehabilitation programs (3). The short hospitalization period of patients with acute coronary syndromes who undergo revascularization procedures (in-hospital rehabilitation) becomes extremely useful to determine the cardiovascular risk factors underlying the development of these diseases and to implement lifestyle changing measures. Patients with ischemic heart disease included in rehabilitation programs will not only have the advantage of an increased exercise capacity, but they will also be monitored by qualified medical personnel for the evolution of

cardiovascular risk factors. At the same time, compliance and persistence to the recommended medication, which acts on these factors and has cardioprotective effects (antiplatelet drugs, statins, beta-blockers, angiotensin converting enzyme inhibitors/sartans) are important (4). The main cardiovascular risk factors are smoking, unhealthy diet, hypertension, diabetes mellitus, dyslipidemia, obesity, metabolic syndrome, sedentary lifestyle and psychosocial stress. Ideally, the so-called “new cardiovascular risk factors” and associated diseases, especially autoimmune disorders, should also be taken into consideration (4,5,6).

The new European guidelines that address classical risk factors propose extremely ambitious targets for patients with very high cardiovascular risk, this risk class being specific to patients with ischemic heart disease. In what follows, we will summarize the objectives to be targeted regarding these risk factors in the presence of a patient with ischemic heart disease included in cardiovascular rehabilitation programs.

Hypertension

Currently, this extremely important risk factor causes the highest cardiovascular mortality (7). All patients with blood pressure values higher than 140/90 mmHg should be advised to make lifestyle changes, as well as to follow drug therapy. In the case of patients aged over 80 years, treatment should be initiated only if the systolic blood pressure value is higher than 160 mmHg (8). Thus, it is recommended to consume less than 1500 g salt/day, optimally less than 1000 g/day, which can contribute to decreasing systolic blood pressure by up to 5-6 mmHg (9). At the same time, regular physical exercise, either aerobic or resistance exercise, may induce a decrease in systolic blood pressure between 4 and 8 mmHg (9). European recommendations regarding the therapeutic targets that should be reached by combining lifestyle changing measures with drug therapy are less than 130 mmHg for systolic blood pressure, but not less than 120 mmHg, for the general population (8). For patients aged over 65 years and those with chronic kidney diseases, the target is less than 140 mmHg, but not less than 130 mmHg, if these values are tolerated. For all patients with hypertension, the diastolic blood pressure value should be less than 80 mmHg, but not less than 70 mmHg (8).

Dyslipidemia

The main therapeutic target that will be taken into consideration for the treatment of dyslipidemia will be LDL cholesterol, because both primary and secondary prevention studies have demonstrated that the lower its value, the lower the risk of cardiovascular events (4,10). The targets that should be reached are: LDL cholesterol < 3 mmol/l (< 116 mg/dl) for subjects with a low risk, LDL cholesterol < 2.6 mmol/l (< 100 mg/dl) in the case of moderate risk, LDL cholesterol < 1.8 mmol/l (< 70 mg/dl) in the presence of high cardiovascular risk, LDL cholesterol < 1.4 mmol/l (< 55 mg/dl) or a reduction of at least 50% of the initial value in subjects with a very high risk (10).

Diabetes mellitus

Obviously, patients with diabetes mellitus should strictly follow the specific dietary measures recommended by the diabetologist.

Systolic blood pressure values will be lower than 130, but not lower than 120 mmHg, and diastolic blood pressure values will be lower than 80 mmHg (without decreasing below the value of 70 mmHg) (11). Glycated hemoglobin will be reduced to less than 7% (11).

Obesity and metabolic syndrome

Patients with coronary diseases will be informed that both overweight and obesity are associated with an increase in the risk of death caused by cardiovascular diseases (4).

Mortality of any cause is reduced when the body mass index is 20-25 kg/m² (in persons aged < 60 years), and an additional reduction of weight does not lead to a decrease in cardiovascular risk (4).

At the same time, patients should know the fact that reaching and maintaining normal weight also has a favorable effect on other cardiovascular risk factors (hypertension, dyslipidemia, diabetes mellitus) (4). For overweight and obese adults, counseling and calorie restriction are recommended to reach and maintain weight loss (12).

Recently, it was demonstrated that regardless of the body mass index value, persons with metabolic syndrome have a higher risk of developing ischemic heart disease than their healthy peers (13).

In contrast, regardless of the presence of metabolic syndrome, overweight and obese persons had a higher risk of coronary diseases than normal weight persons (13). These findings entail the concept of “metabolically healthy obesity”, which encourages obesity fighting strategies in the population (13).

Smoking

Many patients with acute coronary syndromes are smokers. They should be made aware of the implication of smoking in the pathogenesis of ischemic heart disease. Quitting smoking is the most effective cardiovascular prevention method in terms of cost-effectiveness ratio (4).

This is why during the entire rehabilitation program, the so-called strategy of the “five Aces” should be applied: A-ASK – the patients will be inquired on the occasion of each visit to the doctor about their smoking status; A-ADVISE – all subjects will be advised to quit smoking; A-ASSESS – determining the degree of dependence and willingness to quit smoking for each individual; A-ASSIST – establishing together with the patient smoking-quitting strategies, including a deadline for quitting smoking, behavioral counseling and pharmacological support; and A-ARRANGE – developing a follow-up program (4). In order to emphasize the importance of quitting smoking, we will give the example of the results of a meta-analysis published in 2018 (14). Its data demonstrate that men who smoke about a cigarette per day have a 48% higher risk of coronary disease than non-smokers and a 25% higher risk of stroke (14). Estimates are even higher for women: 57% for ischemic heart disease and 31% for stroke compared to never smokers (13). In fact, the conclusion is that persons who smoke about a cigarette per day have about 40-50% of the cardiovascular risk associated with smoking 20 cigarettes per day (14).

Stress

Regarding the psychosocial status of patients with coronary diseases, the ESC guidelines on cardiovascular disease prevention recommend establishing the presence of diseases such as anxiety, depression, as well as of a lower socioeconomic status, workplace or family stress, type D personality, social isolation (4). The presence of these conditions contributes to decreasing adherence to cardiovascular rehabilitation programs and drug treatment. The fact that the cardiovascular rehabilitation team must include a psychiatrist and a psychologist is well known. All these patients should receive counseling from them.

Healthy diet

All patients must be advised to adopt a healthy diet, rich in vegetables, fruit, walnuts, integral cereals, plant proteins and fish, and poor in trans fats, red meat and processed red meat, refined carbohydrates and sweetened beverages (4). Obviously, in establishing concrete measures, the dietician as a member of the rehabilitation team will also take into consideration the presence of hypertension, diabetes mellitus, dyslipidemia, obesity.

Sedentary lifestyle represents one of the most important cardiovascular risk factors, which is why by including patients with coronary diseases in long-term exercise training programs, this factor will be effectively fought.

Conclusion

In conclusion, including patients with coronary diseases in cardiovascular rehabilitation programs can contribute to reaching the therapeutic targets indicated by guidelines on the control of cardiovascular risk factors responsible for the development of these diseases.

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