Cardiovascular and Metabolic Science www.ancam.org.mx

Chapter 11

Vol. 33 Supplement 5
October-December2022

doi: 10.35366/108052

Chronic coronary syndrome

Síndrome coronario crónico

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INTRODUCTION

Coronary heart disease (CHD) is a pathological process with an accumulation of atherosclerotic plaques in the epicardial coronary arteries. It is a chronic, progressive condition that can remain asymptomatic until the occurrence of a plaque event (acute coronary syndrome, ACS.

Chronic coronary syndrome (CCS) encompasses pathological conditions produced by a chronic or repetitive mismatch between supply and demand in myocardial oxygen consumption. The most common cause of ischemia is atherosclerotic obstruction of the coronary arteries. Less frequent are microvascular dysfunction, vasospasm, congenital anomalies, or non-atherosclerotic myocardial injuries.[1,2] The main clinical manifestation of CCS is angina. The reproduction and the duration of the pain with exercise or stress allow this picture to be differentiated from ACS.

FORMS OF PRESENTATION:

Six forms of presentation are distinguished:[1]

1. Patients with chronic stable angina with or without dyspnea with suspected obstructive coronary disease (CAD). The study of these includes evaluation of symptoms, physical examination, comorbidities, and quality of life. It is fundamental to evaluate the pretest probability to choose an appropriate diagnostic method and to establish a prognosis for future CV events.[2]
2. Patients with a recent episode of heart failure or left ventricular (LV) dysfunction. CAD is the leading cause of heart failure.
3. Patients with stable symptoms after < 1 year of an ACS or revascularization.
   They should be followed for the first year after the event, and ventricular function should be evaluated 8 to 12 weeks later.
4. Patients after one year of ACS or revascularization. An annual clinical evaluation is recommended with emphasis on adherence to optimal medical therapy, ECG, and evaluation of ventricular function and silent ischemia every 3 to 5 years.[1,2]
5. Patients with angina and suspected microvascular dysfunction or vasospasm with non-obstructive CHD. They are associated with an unfavorable prognosis. The microvascular disease presents angina without significant obstructive lesions. Vasospastic events occur at rest and usually follow a circadian rhythm with transient ST changes.
6. Asymptomatic patients with CD detection by check-up: a careful assessment of CV risk is suggested.

DIAGNOSIS OF CHRONIC CORONARY SYNDROME

There are six essential steps:[1,2]

1. Take a detailed clinical history for the diagnosis of angina and its classification (typical, atypical, non-anginal chest pain). Then assess symptoms and signs using the Canadian Society of Cardiology classification.[1]

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How to cite: Velásquez-Zapata L, Díaz-Pérez Y, Varleta P, Acevedo M. Chronic coronary syndrome. Cardiovasc Metab Sci. 2022; 33 (s5): s458-s460. https://dx.doi.org/10.35366/108052

2. Concomitant diseases, quality of life, presence of anemia, arterial hypertension, valvular disease, hypertrophic cardiomyopathy, heart rhythm disturbances, peripheral vascular disease, thyroid disease, kidney disease, and diabetes must be registered
3. Perform resting ECG, laboratory tests (complete hemogram, kidney function, diabetes screening, lipid profile, thyroid profile), transthoracic echocardiography, and chest X-ray.[1]

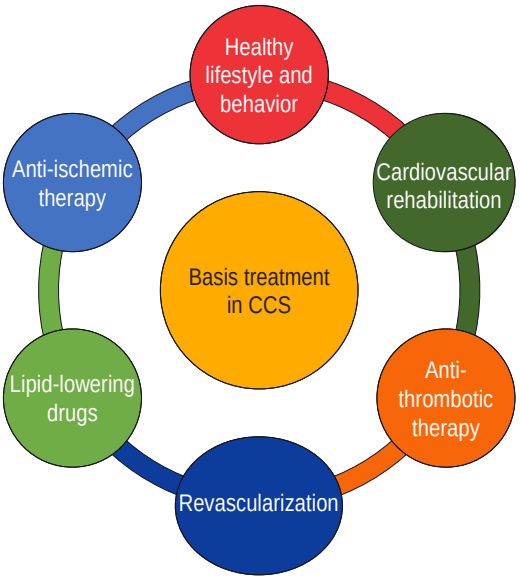

Figure 1: Basis of treatment in chronic coronary syndrome.
CCS = chronic coronary syndrome.

4. Assess the pretest probability (PTP) and the clinical likelihood of ischemic heart disease. When the PPT is < 15%, do not carry out further studies; between 15 and 65%, coronary computed tomography (CTA) is recommended; between 65 and 85%, consider CTA or another ischemia test, and if PTP > 85%, perform coronary angiography.[2,3]
5. The appropriate diagnostic test will depend on the PTP, the patient's comorbidities, and availability. In symptomatic patients in whom obstructive CAD cannot be ruled out, a non-invasive functional imaging test or coronary CT angiography should be performed. The stress test is recommended only in subjects to assess tolerance to exercise, the appearance of symptoms, arrhythmias, pressor response, and the risk of CV events. It can also be considered when non-invasive images are unavailable or in patients already treated to observe symptoms and or signs of ischemia on the ECG. Angio-CT is an alternative to coronary angiography if other non-invasive tests are not diagnostic. Coronary angiography is recommended in patients with high clinical probability, symptoms resistant to therapy, or mild effort angina. Invasive functional assessment should be carried out in cases with doubt about stenosis severity.[3]
6. Risk assessment of CV events based on clinical evaluation and studies performed for diagnosis.

Table 1: Lifestyle recommendations in chronic coronary syndrome.

Intervention	Recommendation ESC 2019	RRR (%)
Physical activity	30-60 minutes of moderate-intensity almost every day	27 mortality
Smoking cessation	Use of the 5As model	36 mortality
Healthy diet	High in vegetables, fruits, and grains. Saturated fats < 10% of total intake Reduce alcohol consumption to < 100 grams per week	31 MACE[10]
Weight loss	Achieve and maintain BMI ≤ 25 kg/m^2	33 MACE[1]

ESC = European Society Cardiology. RRR = relative risk reduction. BMI = body mass index. MACE = major adverse cardiovascular events.

TREATMENT

The main objectives are improving symptoms/quality of life and cardiac event-free survival. The treatment pillars are summarized in *Figure 1*.[1,2]

1. Lifestyle and healthy behavior: *Table 1*.
2. CV rehabilitation: consists in a supervised exercise program. Its benefits are multiple. It has been shown in meta-analyses that it can reduce CV mortality and hospitalizations. However, < 25% of patients are referred to these programs.[4,5]
3. Anti-ischemic therapy: β-blockade and calcium channel blockers are the first lines to reduce angina, but they have not shown an effect on survival. Short-acting nitrates are reserved as a rescue medication, while long-acting nitrates are used as the second line. Ranolazine could be used in patients with refractory symptoms despite therapy.[1,2]
4. Antithrombotic therapy: acetylsalicylic acid (ASA) is the mainstay of treatment for obstructive CAD. Dual antiplatelet therapy is maintained ± 12 months after an ACS. The use after one year of dual treatment therapy a reduction in the risk of CV events ≈ by 25-28%. The addition of the anticoagulant rivaroxaban at a dose of 2.5 mg BID plus ASA reduced the relative risk of events by 24%.[6]
5. Lipid-lowering agents: the LDL goal is < 55 or < 70 mg/dL in Europe and USA, respectively. Management includes lifestyle changes and additive intensive drug therapy with statins, ezetimibe, and PSCK9 inhibitors, in that order.[1,2,7]
6. Revascularization: the ISCHEMIA[8] study, and recently REVIVE,[9] showed equal survival in patients with optimal medical treatment versus coronary revascularization. This last strategy, however, achieves better symptom control.

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