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2 – Chest Pain in Primary Care

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Most deaths from Acute Myocardial Infarction occur in the first hours of disease onset, with 40-65% of cases in the first hour, and approximately 80% in the first twenty-four hours. (1,2) Thus, most of the deaths occur outside the hospital environment. (3) Early recognition and effective treatment of complications become the cornerstones of successful treatment. This role is often in the hands of the primary care doctor, who should make the diagnosis quickly to define the release or admission of the patient for early treatment.

Initial Evaluation

Algorithms for diagnosis and management of patients with chest pain in primary care have not yet been created. Therefore, differentiating ischaemic pain and non-ischaemic is often difficult. In addition, patients with chest pain of ischaemic origin may present themselves as being clinically well. Thus, the initial approach always should consider the hypothesis of a cardiac cause.

Acute coronary syndrome presents a range of symptoms that suggest acute myocardial ischaemia, including unstable angina and acute myocardial infarction (AMI).

Angina is usually described as deep and poorly localized pain or pressure in the chest or upper limbs. It is reproducible in situations of stress and physical activity, improving with rest and sublingual nitroglycerin. Unstable angina occurs at rest and begins only in the recent history of the patient and gets worse over time. AMI is defined as changes in the ST segment and positive laboratory markers of myocardial necrosis (troponin).

In the consultation clinic, the first goal will be to determine which patients need to be referred for further testing (troponin, angiography, stress testing etc.). Although individual characteristics cannot rule out diagnosis, when the characteristics are combined, some signs and symptoms have increased diagnostic accuracy. Patients over 60 years of age, diaphoresis, pain radiating to the shoulder, neck, arm, or jaw, and a history of angina or previous AMI are strong candidates to be referred. It is also necessary to pay attention to subjective terms used in the claims. Often, patients describe pain as discomfort, indigestion, tightness etc.

The presence of co-morbidities, such as diabetes or smoking, dyslipidaemia and hypertension, are weak predictors of SCA in patients over 40 years old and even weaker in patients over 65 years of age. Nevertheless, the question of the presence of these co-morbidities remains an important component of diagnosis.

CLASSIC RISK FACTORS
1. Smoking
2. Systemic Arterial Hypertension
3. Diabetes Mellitus
4. Low HDL
5. High LDL
6. Family history of premature heart disease
7. Sedentary lifestyle
8. Obesity (IMC>30kg/m ²)
9. Age: Men > 45 years and Women >55 years

A recent study listed and validated some clinical factors and reached the conclusion that patients with four or five of these factors would need emergency care. The factors are:

- a) Age greater than 55 years in men and 65 in women
- b) Prior vascular disease
- c) Pain worsens with exercise
- d) Pain not worsened by palpation
- e) Patient believes that the pain is of cardiac origin

Differential Diagnosis

The following are the main causes of chest pain together with their typical symptoms:

1) Acute Myocardial Infarction:

- Chest pain radiating to the upper limbs
- Auscultation of B3
- Hypotension

2) Chest Wall Pain (at least two):

- Localized muscle tension
- Poignant pain
- Reproducible pain on palpation
- Absence of coughing

3) Gastro-oesophageal Reflux Disease

- Retrosternal burning pain
- Regurgitation
- Bad taste in the mouth
- Improvement after a week with proton pump inhibitor

4) Panic Syndrome / Anxiety

- Presence of prior panic attack (fear or sudden panic) in the last four weeks

5) Pneumonia

- Egophony
- Other changes during a physical examination (auscultation / percussion)
- Fever
- Clinical History

6) Pericarditis

- Pain worsens with inspiration and improves with the trunk facing forward
- Pericardial rub
- Diffuse ST segment elevation and depression of the PR interval without T wave inversion

7) Heart Failure

- Pulmonary oedema in chest radiography
- Clinical Impression / historical

8) Pulmonary Thromboembolism

- High pretest probability in the Wells criteria

9) Acute Aortic Dissection

- Chest pain and / or back pulse and different blood pressure in the upper limbs

Diagnosis of SCA in the Pre-hospital Period

Pre hospital period comprises two basic moments:

- a) the onset of symptoms (acute chest pain) until the decision to seek care
- b) the decision to seek care until arrival at hospital.⁴

Conducting a direct clinical history which investigates the characteristics of current symptoms (time of onset, duration, intensity, relationship to effort or rest) and the presence of established coronary artery disease are shown as the main measures to be taken.

An electrocardiogram (ECG) should be performed as soon as possible and also at the site of care (as it reduces by 34% the door-to-needle time and 18% the door-to-balloon time).

Despite the importance of the early AMI approach there is no evidence available in the pre-hospital setting for the use of drugs. If the service is performed by a qualified team (doctor and equipped ambulance) after the clinical and electrocardiographic diagnosis, medication use follows the same recommendations of hospital care.

ECG

It is suggested that an ECG of 12 leads up to 10 minutes after the arrival of the patient, and a new ECG up to a maximum of 3 hours in patients with suspected SCA (even with a normal initial ECG) or at any time in the event of recurrence of pain or clinical instability (recommendation degree I - Evidence Level B / D).

The presence of ST elevation (≥ 1 mm and at least two contiguous leads) or new left bundle branch block immediately indicates a coronary recanalization processes through thrombolytics or primary angioplasty.

In the case of normal or unspecific ECG with typical chest pain, treatment may be initiated or delayed, especially if there is momentary absence of pain. Use of aspirin (300 mg / VO) is indicated in these cases. The referral for further examination is critical.

Take Home Message

- When treating a patient with a chest pain complaint, we must remember that their care should be a priority, with diagnostic strategy already pre-defined by the service.
- The initial goal will be to discard acute coronary syndrome, without forgetting the catastrophic causes.
- Physical examination and history should be thorough.
- Patients with ECG changes or typical pain should be admitted.

Original Abstract

<http://www.woncaeurope.org/content/ab583%C2%A0-%C2%A0-%C2%A0-%C2%A0-chest-pain-and-coronary-insufficiency-primary-care>

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