

Unstable angina pectoris

Unstable angina pectoris (NAP) is an **acute coronary syndrome** without ST elevation' on ECG.

ACS, Unstable Angina pectoris:



Atherosclerosis of the coronary artery causing obstruction of 70% or more, resulting in angina pectoris.

Among **acute coronary syndromes** (ACS) we include:^[1]

1. unstable angina pectoris;
2. acute myocardial infarction without ST segment elevations (NSTEMI);
3. acute myocardial infarction with ST segment elevations (STEMI).

These conditions are an acute manifestation of ischemic heart disease and need to be addressed urgently. A patient with NAP must be hospitalized in a coronary unit.

Etiopathogenesis

The pathophysiological essence of all ACS is intracoronary thrombosis superimposed on a superficially damaged (rupture, erosion, fissure), unstable atherosclerotic plaque. In the case of NAP, the resulting obstruction of the coronary artery is incomplete, so myocardial necrosis **does not occur**, so the levels of cardiospecific markers do not **increase**.^[2]

The causes of NAP include:^{[1][3][4]}

- non-occluding thrombosis encroaching on an unstable atherosclerotic plaque;
- progressing atherosclerotic process;
- progressive neointimal hyperplasia with the emergence of restenosis;
- focal epicardial coronary artery spasm (**Prinzmetal's AP**);
- inflammation of the coronary artery wall;
- a number of extracardiac mechanisms (tachycardia, thyrotoxicosis, fever, anemia, hypoxemia, hypotension).

Clinical forms and classification

Clinical forms of NAP ^[1]	
1	quiet AP – manifests at rest, usually lasts longer than 20 minutes
2	newly established AP – at least III. class CCS
3	deteriorated existing AP – at least to III. CCS grade
4	post-infarction AP

Classification of AP degree according to CCS (Canadian Cardiovascular Society) ^{[2][1]}	
CCS I	AP only during heavy exertion, sports activities, fast or long-lasting load
CCS II	AP when walking uphill, patient ascends to 1st floor and above without pain/stopping
CCS III	AP even when walking on the level, the patient does not go up to the 1st floor without pain/stopping
CCS IV	AP while walking around the apartment, resting angina

Clinical symptoms

Patients report **pressure/tightening/burning pain in the chest (angina)**, the pain can radiate to the neck, lower jaw, upper limbs, back and abdomen. The pain usually subsides within 20 minutes. In addition, anxiety, nausea, vomiting, sweating, dizziness, a feeling of fainting, a feeling of shortness of breath may be present.

Diagnosis

- **History:** risk factors (smoking, hyperlipoproteinemia, DM, hypertension)?, positive family history?, CHD?, previous MI?, exertional AP?, coronary angioplasty?, intracoronary stent?, aortocoronary bypass? other diseases? permanent medication? allergies?^{[4][1]}
- **Physical examination:** mostly normal. Tachycardia and increased blood pressure (sympathetic activation) may be present.^[4]
- **Nitroglycerin test:** Nitroglycerin is given for chest pain. If the pain subsides within 2 minutes, it is probably angina pectoris. Pain relief after more than 10 minutes is non-specific.^[5]
- **ECG:** ST segment depression, T wave inversion, new A-V block?, new bundle branch block?. Outside of an anginal attack, the ECG is usually completely normal. If the ECG picture is normal even during an angina attack, this usually indicates against NAP (possibly against acute ischemia).^[4]
- **Biochemical markers of myocardial necrosis:** are negative in NAP (myocardial necrosis does not occur in NAP).^{[4][2]}
- **Selective coronary angiography:** should be performed in all patients with NAP. For hemodynamically stable patients, we perform it early, i.e. within 48–72 hours. We perform it immediately in hemodynamically unstable patients. Diagnostic coronary angiography can be followed by PCI (percutaneous coronary intervention) or CABG (coronary artery bypass grafting).^{[2][1]}

Differential diagnosis

Differential diagnostics should exclude:

- other causes of chest pain (STEMI, NSTEMI, ischemia of non-coronary origin, aortic dissection, aortic aneurysm, pericarditis, myocarditis, pulmonary embolism, pneumothorax, vertebrogenic algic syndrome etc.).^{[6][4]}

Treatment

A patient with NAP must be hospitalized in an intensive care unit with permanent monitoring of vital signs and ECG (preferably in a coronary unit).

introduction of i.v. cannulas recording of a 12-lead ECG

Initial treatment of a patient with ACS. Taken from ^[1] .
continuous monitoring of vital functions and ECG
oxygen delivery 4–8 l/min
blood sampling for the determination of markers of myocardial necrosis
analgesedation (opiates)
ASA 150–300 mg i.v. or p.o. ^[7]
heparin 5000 j i.v./enoxaparin 1 mg/kg s.c./i.v.
clopidogrel 300–600 mg i.v. (consider IIb/IIIa inhibitors)
metoprolol i.v. according to the clinical condition

- **Antithrombotic treatment:** ASA, clopidogrel, IIb/IIIa inhibitors.
- **Anticoagulation treatment:** heparin, low molecular weight heparin.
- **Antiischemic treatment:** β -blocker (metoprolol), nitrate, calcium channel blocker (amlodipine, felodipine).
- **Hypolipidemic treatment:** statin.

Links

Related Articles

- Angina pectoris
- Prinzmetal's angina pectoris
- Heart-attack
- Ischemic heart disease

External links

- Unstable angina pectoris (TECHmed) (<https://www.techmed.sk/nstemi-infarkt-myokardu-a-instabilna-angina-pectoris/>)

References

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