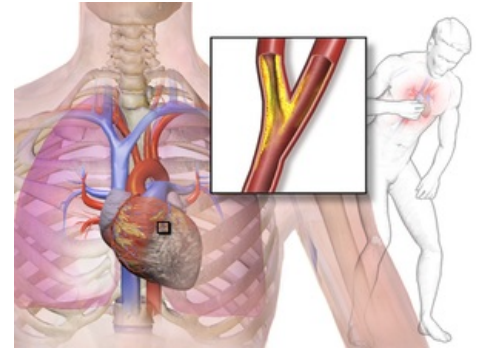# Angina pectoris

Angina pectoris (AP) is a form of ischemic heart disease, manifested by astringent chest pain that forces a person to stop physical activity.

Clinical manifestations

The clinical syndrome is characterized by *seizure-induced constipation [[chest pain] chest pain]]* ', often shooting into the neck and left upper limb. The cause is "transient ischemia" myocardium, which occurs in connection with physical activity, emotional stress or cold. Due to "atherosclerotic" or "spasm" coronary arteries, there is a "" disparity in the myocardium "" between oxygen supply and consumption. "After administration of" "nitroglycerin, the pain" "should have resolved within 5 minutes.

Clinically severe is a narrowing above 75%, which may not manifest at rest, because at rest the oxygen requirements of the heart muscle are sufficiently ensured. After the end of the load and the decrease of the myocardial oxygen requirements, the chest pain disappears. This is one of the differences from myocardial infarction. In myocardial infarction, chest pain persists regardless of physical activity.

Pathophysiology

Atherosclerotic Disability coronary artery or coronary artery spasm (stenosis over 70%) and physical exertion or emotional stress or cold cause a mismatch between oxygen supply and consumption. The result is myocardial ischemia.

The most severe stenoses include narrowing of the first centimeters of the *ramus interventricularis anterior* (RIA), *ramus circumflexus* (RC) of the left coronary artery, and narrowing in the first and third thirds of the right coronary artery.

🔍 *For more information see Atherosclerosis.*

Forms

Stable AP

Stable "angina pectoris" is a form of chronic ischemic heart disease. It is a *'transient'* of myocardial ischemia *'clinically manifesting'* retrosternal pain *'. It arises* 'during exertion' *(usually always the same size)* 'and recedes at rest' *(within 15 minutes). The cause of ischemia is insufficient influx of oxygenated blood with increased need. The subendocardial layer of the heart muscle suffers from hypoxia. The image on the ECG is depression ST.*

Diagram of cardiovascular supply

Diagnostics

'History' is essential for the diagnosis of stable AP. The key examinations are stress tests - *'exercise ECG and echocardiography'* , *'stress perfusion scintigraphy of the myocardium'* . In the case of ischemia, there is ST *'depression on the ECG. Echocardiography shows left ventricular myocardial contractility disorders. Stress perfusion scintigraphy shows the change in left ventricular myocardial perfusion. The problem of stress tests is their low specificity and sensitivity, and it is not appropriate to perform unnecessary exercise ECG in individuals with a very low pre-test probability of AP.* [1]
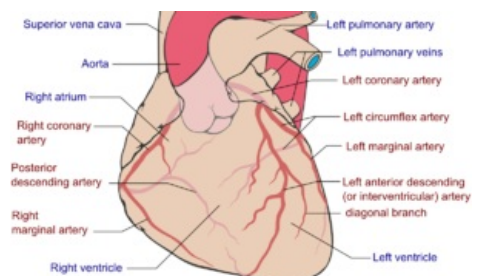
Unstable AP

Unstable angina pectoris is a new AP or pre-existing AP that has worsened in the last 30 days. It arises even at rest and has a longer duration. The cause is an acute change of the plaque - rupture of the sclerotic plaque and subsequent formation of thrombi.

Prinzmetalova AP

Prinzmetal's angina pectoris is an AP arising from the spasms of epicardial coronary arteries, where coronary spasm leads to transient occlusion of the artery. It arises at rest and the cause of spasms is not clear. Ischemia affects the transmural part and we monitor the elevation of ST on the ECG.

Mixed AP

Mixed AP is due to a combination of atherosclerotic narrowing and spasm.

Coronary Syndrome X

The diagnosis of '*coronary syndrome X*' includes patients with exertional angina pectoris and myocardial ischemia documented on ECG or thallium myocardial scintigraphy who have undergone coronary angiography. did not show stenosis, provocation tests of coronary spasms were negative and there was no pain relief after nitrate administration.

Classification

The four-level CCS classification from the Canadian Cardiology Society is used to classify the severity of AP, which is very similar to the NYHA classification for dyspnea. [2]

-	Classification of clinical severity of angina pectoris according to CCS	-	Grade I	Stenocardia is triggered only by extremely great effort.	- Stage II || Stenocardia is caused by greater, but in normal life, the usual exertion, such as climbing to a floor higher than the 2nd floor, walking uphill, etc.	- Stage III || Stenocardia is caused by little effort, such as walking on a plain, climbing to less than the 2nd floor, etc.	- Stage IV || Stenocardia occurs at minimal load or at rest.	-	CCS - Canadian Cardiology Society

Treatment and prevention of stable AP [1]

Influencing lifestyle

It is essential to influence the lifestyle - quit smoking, adjustment of eating habits, sufficient physical activity, reduction of overweight.

Drug treatment

The goal of treatment is to improve patients' prognosis, eliminate or alleviate symptoms, eliminate the underlying cause, which is "atherosclerosis".

Medicines that improve prognosis

- *'Antiplatelet drugs'* <u>(thrombosis prevention)</u> : ASA (75-200 mg / day, usually 100 mg / day) , dual antiplatelet - eg clopidogrel in very severe coronary atherosclerosis (75 mg / day)
- *'Beta-blockers'* <u>(reduction of myocardial demands)</u> : cardioselective: metoprolol, atenolol, betaxolol, bisoprolol; non-selective: carvediol
- *'Statins'* <u>(LDL-C reduction, prevention of progression and stabilization of atherosclerotic plaques)</u> : atorvastatin, simvastatin, rosuvastatin, ...
- *'ACE-I'*

Symptomatic medication

- *'Nitrates <u>(vasodilation - reduction of myocardial demands)</u> '* : ISDN, ISMN
- *'Calcium channel blockers <u>(dilatation of coronary arteries, reduction of myocardial contractility)</u> '* : amlodipine, verapamil
- *'Ivabradin'* <u>(TF reduction)</u>
- *'Trimetazidine'* <u>(reduced myocardial requirements)</u>

Invasive treatment

In the presence of hemodynamically significant stenosis, PCI is possible. If more than one artery or trunk is affected. coronaria sinistra *or in case of PCI failure, cardiac surgery with the formation of aortocoronary bypass is indicated.*

Links

Related Articles

- Treatment of coronary heart disease
- Stable angina pectoris
- Ischemic heart disease
- Heart-attack
- Chronic coronary heart disease
- Prinzmetal's angina pectoris
- Coronary circulation and its peculiarities

External links

- Angina pectoris - video on youtube.com (https://www.youtube.com/watch?v=pvsAo0WA7V0)
- Angina pectoris a EKG (TECHmED) (https://www.techmed.sk/nstemi-infarkt-myocardu-a-instabilna-angina-pectoris/)

Source

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- PASTOR, Jan.. *Langenbeck's medical web page* [online]. [cit. 23.04.2010]. <https://langenbeck.webs.com/>.

Used literature

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- MILOŠ, Staff. Stable angina pectoris. *Cardiology review* [online]. 2003, vol. 3, p. 185-189, Available from <http://www.kardiologickarevue.cz/pdf/kr_03_04_06.pdf>. ISSN 1212-4540.

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2. HRADEC, Jaromír – BULTAS, Jan. – IRON, Michael. Stable angina pectoris. *Cor Vasa* [online]*.* 2010, y. 9, vol. - , no. 52, p. 545, Available from <http://www.kardio-cz.cz/data/upload/Stabilni_angina_pectoris.pdf>. ISSN 1803-7712.