Risk factors for cardiovascular diseases

The term **atherosclerosis** is derived from the Greek atheroscreen and sclerosis - hardening. It is a complex progressive chronic process affecting the vascular wall. It causes cardiovascular diseases - ischemic heart disease (ICHD), ischemic cerebrovascular disease and ischemic lower limb disease (ICHDK). The etiology of these diseases is **multifactorial**, which means that several factors (congenital and acquired) are involved in their onset and progression. These factors are generally referred to as risk **factors for atherosclerosis**.

The **INTERHEART** study, which was conducted in 52 countries around the world, found that **9 risk factors** are responsible for 90 to 92% of the first myocardial infarctions.

They are:

- smoking
- hypertension
- diabetes mellitus
- dyslipoproteinemia/hyperlipoproteinemia,
- central type of obesity
- lack of physical activity
- psychosocial factors
- insufficient consumption of fruit and vegetables
- excessive alcohol consumption

Cardiovascular diseases are the **leading cause of death** in the Western world.

In general, risk factors for cardiovascular disease can be divided into 3 groups:

- **non-modifiable personal characteristics**;
- **lifestyle factors**;
- **biochemical and physiological characteristics**,

Uncontrollable factors (non-modifiable personal characteristics)

- age (45 years or more for men and 55 years or more for women is considered at risk),
- male (women increase risk postmenopausal without estrogen replacement),
- family history: early coronary heart disease (in men under 55, in women under 65) or other manifestations of atherosclerosis in a first-degree relative,
- personal anamnesis: coronary heart disease or other manifestations of atherosclerosis or finding of an asymptomatic form of the disease.

Biochemical and physiological characteristics

- increased total plasma cholesterol (mainly LDL-cholesterol),
- low HDL-cholesterol,
- elevated triacylglycerols,
- high blood pressure,
- hyperglycemia, diabetes mellitus, carbohydrate metabolism disorder - hyperinsulinemia,
- central obesity,
- thrombogenic factors (increased levels of fibrinogen, factor VII, PAI-1),
- mild hyperhomocysteinemia.

New concepts

In recent years, a new concept has emerged that considers the increase in LDL-cholesterol as the only causal risk factor. Hypertension, smoking, and other factors are considered accelerators or triggers of atherosclerosis.

At present, the importance of new, modern risk factors is also being devoted. **HsCRP** is most commonly encountered, and atherosclerosis is considered an inflammatory repair procedure. The question is whether this is a real risk factor or just a marker of atherosclerosis or instability of the atherosclerotic plaque. Another factor is **lipoprotein (a)** - Lp (a). High **fibrinogen** levels are also a risk factor for coronary heart disease and its determination in clinical practice is currently being studied.

Links

- Hyperlipoproteinemia
- Coronary heart disease

- Lower limb ischemia
- heart-attack

Bibliography

- BENCKO, Vladimír, et al. Hygiena – učební texty k seminářům a praktickým cvičením. 2. vydání. Praha : Univerzita Karlova, 2002. 204 s. ISBN 80-7184-551-5.