INTERNATIONAL MULTI DISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT
eISSN 2394-6334 Impact factor: 7,854 Volume 12, issue 12 (2025)

ANALYSIS OF ATHEROSCLEROTIC CHANGES IN AORTA AND CORONARY VESSELS IN PEOPLE WHO DIED SUDDENLY FROM CARDIAC CAUSES

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Abstract: Atherosclerosis of the aorta and coronary arteries was studied in those who died at the age of 20-59 years: 40 practically healthy individuals and 40 with **Acute Coronary Insufficiency (ACI)**. Lipid spots in the aorta were larger in the healthy group, while stenoses of the coronary arteries were more frequent in those who died from ACI. In patients with cardiovascular diseases (CVD), atherosclerosis is more pronounced, with a larger area of lesions and an earlier onset, especially in individuals over 40 years of age.

Keywords: Atherosclerosis, aorta, coronary vessels, cardiovascular diseases, acute coronary insufficiency, lipid spot, fibrous plaques.

Актуальность. Cardiovascular diseases rank among the leading causes of death worldwide. In particular, cases of sudden cardiac death are one of the most serious problems for the healthcare system. One of the main morphological causes of such conditions is atherosclerotic changes in the aorta and coronary arteries. The early and latent course of atherosclerosis, which often develops without clinical symptoms, makes it difficult for doctors to diagnose and prevent the disease in a timely manner. Therefore, post-mortem morphological analyses are an invaluable source for determining the true prevalence of atherosclerosis, its structure, degree, and complications.

Purpose of the study*:* to study the dynamics of the prevalence of aortic and coronary artery atherosclerosis in the population of the Andijan region.

The objective: of the study was to study atherosclerotic lesions of the aorta and coronary arteries in the population of the Andijan region in practically healthy individuals and those who died from cardiovascular diseases.

The material for the study was the aorta and coronary arteries of deceased individuals aged 20-59, of whom 40 belonged to the group of practically healthy individuals and 40 to the group of those who died from acute coronary insufficiency.

Research methods. The vessels being studied were stained with Sudan IV. The area affected by atherosclerosis was determined by the visual-planimetric method. The presence or absence of lumen narrowing in the coronary vessels was visually determined.

Input

This study compares the degree of atherosclerotic damage to the aorta and coronary arteries in people who died suddenly from acute coronary insufficiency (ACI) with relatively healthy people in the Andijan region between the ages of 20-59.

Comparison of main results and groups.

The study revealed significant differences in the nature and prevalence of atherosclerosis between those who died due to acute atherosclerosis (patients) and relatively healthy individuals (control):

Total area of atherosclerosis and type of lesion:

The total area of atherosclerosis, as well as the area of ascending lesions (fibrous plaques, complications, calcification), is significantly larger in the aorta and coronary arteries.

For example, the total area of atherosclerosis in the abdominal aorta was 48.1% in patients and 30.2% in healthy individuals.

- In healthy individuals (control): Lipid spots (the initial stage of atherosclerosis) are more common and occupy a larger area compared to ascending lesions.

- Coronary artery stenosis (narrowing):

It manifests more frequently and strongly in those who have died due to POI. The average frequency of stenosis in all coronary arteries of the LC group was high.

• Fibrous plaques:

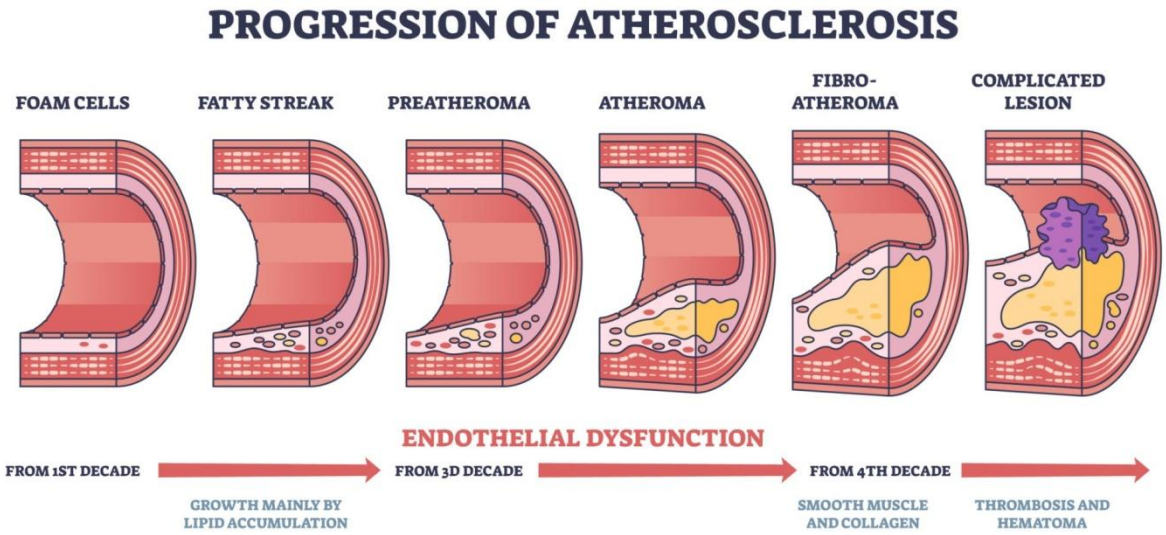
In those who died from the disease, the area of fibrous plaques in the aorta is 3.4-3.7 times higher than in the control group.

Age-related dynamics of atherosclerosis

- Development with age: Atherosclerosis increases with age in both groups.
- Lipid spots: In the control group, their area reaches its peak at the age of 30-39 years, then rapidly decreases by 50-59 years, which is probably associated with the transition to fibrous plaques.
- Fibrous plaques: after 40 years of age, a sharp increase in the area of fibrous plaques is observed in all examined vessels, which is also a decisive age for the emergence of statistically significant differences between the groups.

Complicated injuries and calcification:

- They appear in younger ages.
- Complicated damage to the abdominal aorta is detected after 30 years of age, and to the thoracic aorta only after 50 years of age.
- Calcinosis of the thoracic aorta is detected after 50 years of age (control group).



Conclusion:

1. Increased atherosclerosis in CVD: Atherosclerosis of the aorta and coronary arteries is more pronounced and develops earlier in individuals with cardiovascular diseases (CVD), especially with CVD, than in relatively healthy individuals.

2. The main difference in stages: In healthy individuals, the initial stages (lipid spots) predominate, while in patients, complicated, developed lesions (plaques, calcification, stenosis) are dominant.

3. Significance of prevention: The data obtained indicate the need for timely diagnosis and prevention of atherosclerosis to reduce the risk of cardiovascular complications, especially in individuals over 40 years of age.

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