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Atrial fibrillyatsiya

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Abstract
This article discusses the classification, etiology, pathogenesis, clinical features, diagnostic methods, and treatment approaches of atrial fibrillation.
Keywords: Atrial fibrillation (AF), palpitations, dyspnea, ECG, Holter monitoring, laboratory tests, MRI, NOAC.

Introduction: Atrial fibrillation (AF) is the most common cardiac rhythm disorder, characterized by impaired coordinated contraction of the atria and irregular, often rapid heartbeats. This condition can lead to various dangerous complications in circulation, including stroke and heart failure.

Classification

Atrial fibrillation is divided into the following types:

Paroxysmal (transient): Episodes that terminate spontaneously within less than 7 days.

Persistent: Rhythm disturbance lasting more than 7 days and requiring pharmacological or electrical cardioversion.

Permanent: Fibrillation that persists despite treatment or when rhythm restoration is not pursued.

Long-standing persistent: Lasts longer than one year, but rhythm control may still be considered.

Etiology

The main causes of atrial fibrillation include the following factors:

— Cardiac causes —

Ischemic heart disease

Mitral stenosis or other valvular defects

Myocarditis, cardiomyopathies

Heart failure

— Non-cardiac causes —

Hyperthyroidism (elevated thyroid hormone levels)

Electrolyte imbalance (especially potassium and magnesium deficiency)

Chronic alcohol consumption (“holiday heart” syndrome)

Absence of an identifiable cause in an otherwise healthy heart (“idiopathic atrial fibrillation”)

Pathogenesis

AF often begins with the activity of ectopic foci, mainly due to disruption of signals controlling contraction of the left atrium.

As electrical impulses circulate within enlarged atria, proper synchronization is lost, and atrial myofibrils contract irregularly. This reduces the efficiency of blood ejection from the left ventricle.

Clinical Features

Symptoms of atrial fibrillation include:

Palpitations and a sensation of heart fluttering

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Dyspnea (shortness of breath), especially during physical activity
Fatigue and weakness
Occasionally dizziness or syncope (fainting)
In many patients, symptoms may be absent
In complicated cases: thromboembolic events (stroke)

Diagnosis

— ECG —
Presence of F waves and absence of P waves; ventricular contractions are irregularly irregular.
— Holter monitoring —
Used to detect episodic fibrillation.
— Laboratory tests —
Assessment of blood electrolyte levels and thyroid hormone levels.
— Echocardiography —
Detection of structural abnormalities.
— MRI —
Used when necessary to obtain detailed cardiac imaging.
Treatment
— Pharmacotherapy —
Antiarrhythmic drugs:
For restoration of sinus rhythm (procainamide, amiodarone)
For heart rate control (beta-blockers, verapamil, digoxin)

Anticoagulants:

For prevention of thromboembolic complications (warfarin, NOACs: apixaban, rivaroxaban)
Diuretics:
Help manage heart failure
— Invasive methods —
Electrical cardioversion (to restore rhythm)
Catheter ablation (elimination of ectopic foci)
Implantation of a pacemaker or defibrillator
Lifestyle Modification
Reducing salt intake
Avoiding alcohol and stimulants
Regulating physical activity
Interesting Facts
Statistics
Among people over 50 years of age, the lifetime risk of developing AF is approximately 25%.
The use of specialized “mobile ECG” devices for AF diagnosis is increasing.
The risk of stroke in patients with AF is five times higher than in the general population.
“New-generation” anticoagulants (NOACs) significantly improve patients’ quality of life and are easier to use.

Conclusion

Atrial fibrillation (AF) is an irregular heart rhythm in which the upper chambers of the heart (atria) contract rapidly and chaotically. This condition can lead to the formation of blood clots in the heart and increase the risk of complications such as stroke and heart failure. Some individuals with AF experience no symptoms, while others may have palpitations, shortness of breath, or dizziness. AF episodes may be temporary or permanent. Although AF itself is usually not life-threatening, treatment is essential to prevent stroke. Treatment options include medications, cardioversion (using electrical shock to restore heart rhythm), and catheter ablation (blocking abnormal heart signals). Atrial flutter is another rhythm disorder related to AF and is managed using similar treatment approaches.

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