

# Radiofrequency catheter ablation

**Radiofrequency catheter ablation (RFA)** is the definitive non-pharmacological treatment for arrhythmias; follows the electrophysiological examination. This is a procedure with which we can specifically influence the pathological electrical activity of a certain area of the cardiac myocardium. Selective radiofrequency ablation aims to destroy the arrhythmogenic focal deposit in the myocardium or break the reentry circuit.

## Mechanism of radiofrequency ablation

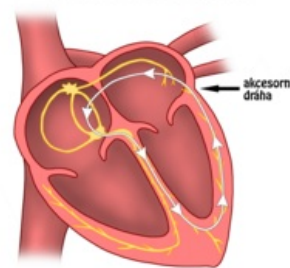
**Radiofrequency energy** represents high-frequency alternating electric current, for the purposes of catheter ablation, we use a current with frequencies of 500-1000 kHz.

- We introduce the ablation catheter via the vein or femoral artery under X-ray control into the heart cavities (the ablation catheter is connected to a radiofrequency ablator and a multi-channel ECG recorder).
- The passage of electric current through the myocardium accelerates the movement of ions, which generates heat. Temperatures above 46 ° C result in denaturation of proteins, coagulation necrosis develops, which then heals with a non-cytogenic scar. Commonly used temperatures are 60-70 ° C for 40-50 seconds.
- We verify the effectiveness of RFA by electrophysiological examination.

## Indication

Principle of orthodromic AV reentry tachycardia: the excitement reaches the chambers in a physiological way (via the AV node), from which, however, the accessory pathway in the septum between the left atrium and left ventricle (James's bundle) returns to the atrium, creating a reentry circuit leading to tachycardia. Interruption of this circuit would be the essence of RFA,

MECHANISMUS ORTODROMNÍ REENTRY TACHYKARDIE



- **Supraventricular tachyarrhythmias (SVT),**
  - AV nodal reentry tachycardia (AVNRT),
  - AV reentry tachycardia (AVRT),
  - Risk SVT (with hypotension, unconsciousness, after failure of antiarrhythmic treatment),
  - Atrial fibrillation,
  - Flutter atrium,
- **Ventricular tachycardia (ventricular tachycardia, VT),**
  - Monomorfnní komorová tachykardie,
  - Bundle-branch reentry komorová tachykardie.

## Complications

The complications of radiofrequency ablation are generally low. These can be:

- complications at the site of vascular puncture (vascular damage, bleeding, hematoma, painful swelling);
- damage to the cardiac conduction system;
- infection;
- heart wall damage;
- thrombus formation (in the vessel or heart)

## Links

### Související články

- Electrophysiological examination
- Flutter atria
- Atrial fibrillation

### References

- 
- 1. KAUTZNER, Josef. Katetrizační ablace srdečních arytmií. *Kardiologická revue*. 2006, roč. 0, vol. Suplementum, s. 4, ISSN 1801-8653.
- DÍTĚ, P., et al. *Vnitřní lékařství*. 2. vydání. Praha : Galén, 2007. ISBN 978-80-7262-496-6.

