

Automatic arrhythmia with an adrenergic component: is it possible to improve with physical exercise?

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Introduction: Arrhythmias have several causes, including dysfunctions of the autonomic nervous system (ANS). On the other hand, physical exercise is recognized for regulating the ANS, chronically promoting a decrease in sympathetic activity. However, it is still not clear in the literature whether chronic physical exercise is capable of promoting improvements in automatic arrhythmias with an adrenergic component. **Objective:** to describe how a supervised cardiovascular rehabilitation program (RCS) promoted improvements in the arrhythmic condition and quality of life (QOL) of a patient with automatic arrhythmia with an adrenergic component. **Case Description:** This is a case report. Female, 85 years old, sedentary, diagnosed with automatic arrhythmia with an adrenergic component at the age of 19 after an episode of sudden discomfort. She continued undergoing clinical treatment throughout this time (66 years). In August 2021, she reported worsening of her arrhythmic condition, leading to excessive tiredness in activities of daily living (ADLs) such as walking and sweeping the house. The ECG- Holter showed 1,921 supraventricular arrhythmias (35% of the total QRS) of which 29,604 were isolated, 2,820 episodes of bigeminism, 3,777 in pairs and 3 sustained tachycardias. She used the following drugs: rosuvastatin 10mg, losartan potassium 25 mg, nebivolol 5mg, mirtazapine, desvenlafaxine succinate monohydrate and gabapentin. As a solution, it was recommended to perform ablation. However, the patient was referred to the RCS service in Salvador, BA before the procedure. The RCS program lasted 3 months with three weekly sessions carried out under electrocardiographic monitoring. In the first month, adaptive training consisted of handgrip exercises, inspiratory muscle training and neuromuscular exercises (Borg up to 11 and Omni from 1 to 2). In the following months, the intensity was increased, and cyclical exercise on an ergometric treadmill was added. After the RCS program, there was a 49% improvement in QOL (55 Vs 28 points) assessed by the Minnesota Living with Heart Failure Questionnaire. Symptoms of excessive tiredness in ADLs were resolved. A new ECG-Holter was requested, which showed a significant improvement in the complexity of the arrhythmia (no longer showing sustained ventricular tachycardias). As a result of the results obtained, the patient did not need to undergo the ablation procedure initially indicated. **Conclusion:** In this case report, we observed that an RCS program could promote improvement in an automatic arrhythmia with an adrenergic component, improving QOL.