

Chapter 1

Introduction

1.1 What is the Atrial Fibrillation?

Atrial fibrillation, also abbreviated with AF or A-Fib, is an abnormal heart rhythm that happens when electrical impulses fire off in the atria (Figure 1.1), from different spots without being organized. Characterized by rapid and irregular beating, caused by the chambers of the heart twitching [1]. This arrhythmia is associated with an increased risk of stroke, heart failure and even dementia [2, 3]. Affects 5-10 per cent of elderly people.

The disease is classified by doctors based on how long it lasts or based on the cause. The treatment will be different for each kind [4]. The main one are:

- Paroxysmal Atrial Fibrillation (holiday heart syndrome): an episode of AF, the duration of whose may be a few minutes or a few days, but which tends to be below the week. Usually a treatment is not needed;

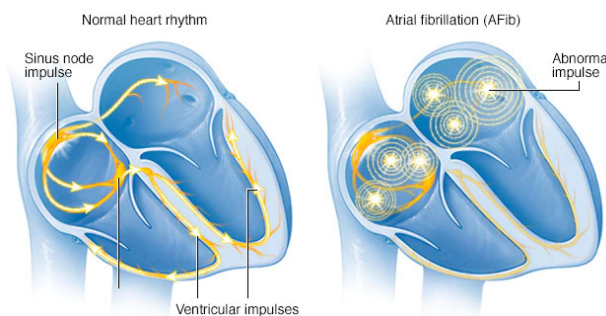


Figure 1.1: A normal heart beat on the left, an AF heart beat on the right. Image from mayoclinic.org

- Persistent: the disease lasts longer than a week and it can stop on its own, or a specific medicine or treatment is needed. If the latter does not work, doctors opt for the electrical cardioversion, which is a low-voltage current used to reset the normal rhythm;
- Permanent: also called chronic, cannot be treated. The doctor decides for a long term medication to reduce the odds of associated health conditions.

1.2 Causes and symptoms

There are many possible causes of the condition, some are controllable, others are not. Cardiovascular factors play a big role: high blood pressure, heart valve disease, congenital heart disease and even previous heart surgery. But difficulties in breathing are a key factor too, in other words obesity, obstructive sleep apnea [5]. Alcohol consumption and tobacco smoking are associated with an increased risk of developing atrial fibrillation [6, 7]. Other factors are genetics, ageing, a sedentary lifestyle and diabetes [8, 9].

The person often feels an abnormal beating that starts to become longer and constant. There could be heart palpitations, shortness of breath, chest pain, lightheadedness, or fainting [10]. But the biggest problem is that often these kind of episodes are asymptomatic [3], in fact sometimes first diagnosed when patients present a stroke [11].

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