

Atrial fibrillation (AF) patient information



Providing information, support and access to established,
new or innovative treatments for Atrial Fibrillation

Glossary

Antiarrhythmic drugs Drugs used to restore or maintain the normal heart rhythm.

Anticoagulant Drugs which help to thin the blood.

Arrhythmia Heart rhythm disorder.

Atrial fibrillation (AF) Irregular heart rhythm.

Atrial flutter A rhythm disorder similar but more organised and regular than AF and often with faster heart rates.

Cardiologist A doctor who has specialised in the diagnosis and treatment of patients with a heart condition.

Cardioversion A therapy to treat atrial fibrillation or atrial flutter which uses an electrical shock across the chest to revert the heart back to a normal rhythm.

Catheter ablation A treatment which destroys small areas inside the heart which are causing the AF.

Dyspnea A medical term for shortness of breath.

Echocardiogram An image of the heart using echocardiography or soundwave-based technology. An echocardiogram (nicknamed “echo”) shows a three-dimensional shot of the heart.

Electrocardiogram or ECG (sometimes EKG)
A representation of the heart’s electrical activity in the form of wavy lines. An ECG is taken from electrodes on the skin’s surface.

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Electrophysiologist (EP) A cardiologist who specialises in heart rhythm disorders.

Heart failure The inability (failure) of the heart to pump sufficient oxygenated blood around the body to meet physiological requirements.

Rate control of AF A medical approach to treating atrial fibrillation which does not treat the AF itself, but rather attempts to slow the rapid ventricular response to the fibrillating atria (increased heart rate). Since a fast rate is what is most associated with symptoms, this provides symptomatic relief.

Rhythm The pattern of cardiac activity. Strictly speaking, the heart has both a rate (how fast it beats) and a rhythm (the pattern of activity). Rhythm includes the ratio of atrial to ventricular activity.

Sinus rhythm Normal rhythm of the heart.

Stroke A medical condition which is now referred to as a “brain attack” where the brain is deprived of oxygen. Blockage of blood flow can occur when a blood clot breaks free, travels through the circulatory system to the brain and gets lodged in a blood vessel long enough to cause damage to a section of the brain. Strokes can vary in severity from transient (TIA) to severe.

Syncope A medical term for passing out from lack of oxygen to certain areas of the brain.

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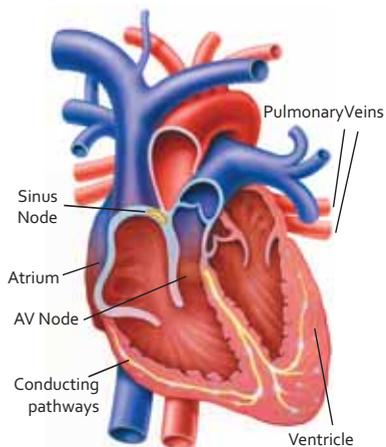
Introduction

Atrial fibrillation (AF) is the most common heart rhythm disturbance encountered by doctors. It affects approximately 400,000 people in Australia. It can affect adults of any age, but is more common as people get older. In the over 75 year old age group it affects about 10% of people. Left untreated or poorly monitored, AF can lead to serious complications such as heart failure and stroke.

The heart during normal rhythm (sinus rhythm)

The heart is a muscular pump, which delivers blood containing oxygen to the body. It is divided into two upper chambers (atria), which collect blood returning via the great veins, and two lower chambers (ventricles), which pump blood out through the aorta (main artery) to the rest of the body and through the pulmonary artery to the lungs. Normally, the heart beats in a regular, organised way, at a rate of 60-100 beats per minute at rest. This is because it is driven by the sinus node, a specialised group of cells situated in the atria, which emits electrical impulses. The sinus node is sometimes referred to as the heart's natural pacemaker. These electrical impulses spread through the atria and then into the ventricles via a connecting cable (the AV node). The sinus node controls the timing of the heart, according to the needs of the body. An example of this is during exercise, when the heart rate speeds up. When the heart is beating normally like this, we refer to it as sinus rhythm, or normal sinus rhythm.

The heart and normal conduction



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(Figure 1)

What is atrial fibrillation?

Atrial fibrillation (AF) occurs when chaotic electrical activity develops in the upper chambers of the heart or atria, and completely takes over from the sinus node. As a result the atria no longer beat in an organised way, and pump less efficiently. The AV node will stop some of these very rapid impulses from travelling to the ventricles, but the ventricles will still beat irregularly and possibly rapidly. This may contribute to symptoms of palpitations, shortness of breath, chest discomfort, light headedness, fainting or fatigue. The goal of treatment in AF is to restore the heart's normal rhythm and if this is not possible then to slow the irregular heart rate, to alleviate symptoms and prevent complications of AF related to stroke and heart failure.

Who gets atrial fibrillation?

There is no typical atrial fibrillation patient. Atrial fibrillation occurs in men and women, in all races, and can occur at any age. While it can run in the family, most people diagnosed with atrial fibrillation will not have a family history of the disease. Some events and diseases may make AF more likely, but it can also occur without warning.

What causes atrial fibrillation?

Atrial fibrillation is related to age; the older you get, the more likely you are to develop it. Men and women are equally susceptible to the disease. Atrial fibrillation is frequently noted after an open heart operation. Other conditions or diseases can also increase your risk of getting atrial fibrillation. This does not mean that atrial fibrillation always develops but the risk does increase.

Below are several conditions associated with atrial fibrillation:

- High blood pressure
- Coronary heart disease
- Mitral valve disease (caused by rheumatic heart disease, valve problems at birth, or infection)
- Congenital heart disease (abnormality of the heart present since birth)
- Pneumonia
- Lung cancer
- Pulmonary embolism
- Overactive thyroid
- Diabetes
- Sleep apnea

In addition, alcohol and drug abuse or misuse may predispose you to atrial fibrillation. While your risk of atrial fibrillation goes up with the problems mentioned, many people develop atrial fibrillation for no explainable reason.

Are there different types of atrial fibrillation?

Yes. Early in the disease, atrial fibrillation is often intermittent, meaning that it can come and go without warning and you may go long periods of time between spells. When atrial fibrillation first occurs, the early episodes may be brief and cause very mild symptoms. In fact, some people with this early-stage atrial fibrillation may not even know they have it.

AF falls into one of three categories that describe the progression of the disease, ranging from occasional episodes to the complete absence of a normal heart rhythm:

1. Paroxysmal AF – multiple episodes that cease within seven days without treatment
2. Persistent AF – episodes lasting longer than seven days, or less than seven days when treated
3. Longstanding permanent AF – continuous AF with more than a one year duration

How do I get to see the right doctor to treat my AF?

Initially you will usually consult your general practitioner who may arrange some investigations before possibly referring you to a cardiologist (heart specialist) – who may or may not have a specialist interest in heart rhythm disorders. After appropriate

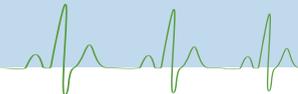
What are the symptoms of atrial fibrillation?

Some AF patients do not experience symptoms, however for those who do common symptoms are:

- Palpitations (or awareness of the heartbeat), which may be rapid
- Tiredness
- Shortness of breath
- Dizziness
- Chest pain

Some people with AF have no symptoms at all and it is only discovered at a routine medical examination.

The easiest way to detect AF is to feel the pulse!



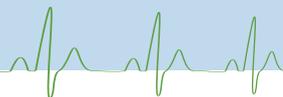
diagnosis, some patients will respond to medication and in this case it may be that no further treatment will be required.

You may be referred to a cardiologist who specialises in heart rhythm disorders, usually called an electrophysiologist (EP) – this type of doctor will offer ablation treatments, and some will perform large numbers of ablation procedures for atrial fibrillation. If you are seen by a general cardiologist you may be referred on to see an electrophysiologist, but if this is not offered you can request specialist referral from either your general practitioner or cardiologist. The outcomes from atrial fibrillation ablation, as with many other procedures, are generally better in more experienced hands. Before proceeding with ablation you should ask the electrophysiologist about his/her personal level of experience and results.

A team approach to atrial fibrillation ablation is important and you should also ask about the number of cases performed in the hospital where you will have the procedure. An electrophysiologist who has a specialist interest in atrial fibrillation ablation will usually perform over 50 procedures of this type per year.

To summarise, these are the services typically offered by each type of doctor:

- (1) General Practitioner - overall responsibility for patient care and prescription of medication. May offer simple investigations and monitoring of anticoagulation therapy.
- (2) General Physician/ Cardiologist – investigation of heart disease, initiation and monitoring of drug treatment, cardioversion.
- (3) Electrophysiologist – all aspects of heart rhythm diagnosis and treatment, including ablation procedures. Some electrophysiologists perform a high volume of ablation procedures for AF.



What are the risks of atrial fibrillation?

The main risk associated with AF is stroke. This occurs because the atria are fibrillating and not beating in a co-ordinated way. As a result, the blood in the atria can become stagnant and then does not flow through the heart smoothly. This causes blood cells to stick together and form a clot (an embolism) which can travel to the brain and result in a stroke.

Having an uncontrolled heart rate for long periods of time (weeks or months) can damage the heart and you should check with your doctor that your heart rate is controlled adequately. In extreme cases, often when the rate is very fast or when it happens in a damaged heart, AF can cause heart failure which means that the heart becomes weak as a result of the rapid rhythm. As the heart weakens, blood flows back into the lungs and affects the normal breathing pattern. Over time, AF is also associated with an increased risk of death, however in general AF is not considered a life-threatening disease in its own right. Why AF is associated with increased risk of death is not understood.

Tests/investigations

First, it is important to check that you do actually have AF. This is confirmed by a heart tracing called an electrocardiogram (ECG). The ECG may be a simple recording made in real time, or a continuous monitor, worn for 24 hours or more, to look for episodes of AF. Heart monitors are painless and allow your doctor to record your rhythm for several days during various activities in an attempt to diagnose the condition of AF. You will probably need to have an echocardiogram (an ultrasound scan of the heart) which can assess the structure and overall function of the heart and you may also need to have blood tests.

Treatment of atrial fibrillation

Many factors can influence the best therapy for your individual case. The good news for people with atrial fibrillation is that there are a greater range of treatments and more effective treatments than ever before.

Drug treatments

Currently, drugs are the most common treatment for AF and they have the aim of alleviating symptoms and reducing the likelihood of stroke. Commonly prescribed medicines include verapamil, metoprolol, diltiazem, flecainide, amiodarone, and digoxin. These drugs are used in two different ways, some are used to restore the normal heart rhythm, these are known as antiarrhythmic drugs. They work by blocking specific channels in the cardiac cell.

Beta blockers are commonly used to slow the heart rate and are effective in active patients with better exercise capacity. In some patients with infrequent sustained episodes of AF, flecainide (usually with metoprolol) may be given as a single dose at the beginning of the attack. This is known as the pill-in-the-pocket method. However, this is only safe when patients are carefully trained to undertake this procedure and practice it first in the hospital setting.

A booklet entitled Drug information for atrial fibrillation is available from the AF Association.

Non-drug treatments

In some individuals the episodes of atrial fibrillation are both severe and frequent, affecting their quality of life. If drug treatments do not work or cause unpleasant side effects, it may be necessary to offer a different solution.

For patients with persistent AF physicians may elect to perform a cardioversion, a procedure in which an electric current is delivered through special gel pads positioned on the chest wall. Cardioversion aims to shock the heart back into its regular rhythm.

For some, especially those with troublesome paroxysmal AF, a procedure called catheter ablation can be undertaken to treat AF. This is done by passing electrical wires to the heart through small tubes inserted into the vein at the top of the leg. Areas of the heart giving rise to AF can be ablated in order to restore normal sinus rhythm. Ablation eliminates electrical triggers initiating and/or modifies the substrate sustaining AF. Catheter ablation can successfully cure AF in up to 80% of patients though more than one procedure may be required to achieve this.

The Catheter ablation for AF patient booklet is available from the AF Association.

If open-heart surgery is required for a structural problem such as an abnormal heart valve in someone who also has AF then it is possible to perform ablation for AF at the time as the surgery.

Stroke prevention

In AF the chaotic electrical activity means that the atria (top chambers of the heart) no longer contract together but instead the muscle quivers like a bag of worms. A lack of efficient contraction means the blood within the atria becomes stagnant and can form clots. These clots can travel anywhere in the body, but most worryingly, they can travel to the brain and cause a stroke. The risk of stroke in AF is five times greater than in the normal sinus rhythm (regular heart rhythm). This is why people with AF need to have their blood thinned to reduce the risk of clots forming and thus reduce the risk of strokes.

What blood thinning options are available for doctors to use?

Clots are made up of two main components from the blood. These two components are (i) fibrin, a long protein that binds together to form a mesh and (ii) platelets, small cell particles that stick to the mesh and help to hold it together once they become active. The blood can be thinned to different degrees by attacking each of these components. Drugs like warfarin and heparin act to stop the formation of fibrin and are known as anticoagulants, whilst aspirin and clopidogrel are drugs that stop the activation of platelets and are known as antiplatelet agents.

Anticoagulants

By inhibiting the formation of the fibrin network, warfarin and heparin act to thin the blood very efficiently and can reduce the risk of stroke by up to 60%.

Warfarin

Of the available oral anticoagulants warfarin is by far the most commonly used. Warfarin acts on the liver to prevent the formation of the proteins that go on to create fibrin. As our bodies have stores of these proteins that last a few days, warfarin will only start to thin the blood efficiently after a few days. When you first start taking warfarin you will attend the anticoagulant clinic weekly as they adjust your dose to suit you. Most people find once they are established on warfarin their INR is pretty stable and they need only attend the clinic every six-eight weeks. However you have to watch out for things that can affect your warfarin level to keep it stable, such as alcohol, certain food items and other medication, including cough remedies, herbal cures and many other over-the-counter medications. In short you are fine to have a couple of paracetamol for a headache but anything else you should seek the advice of your doctor or chemist.

New oral anticoagulants

A number of new oral anticoagulants are now approved for use in Australia. These include dabigatran, rivaroxaban and apixaban. These drugs are at least as effective as warfarin for preventing stroke in AF, and do not require monitoring by INR blood tests. A common property is a lower risk of causing intracranial haemorrhage.

Antiplatelets

Aspirin and clopidogrel act in slightly different ways to prevent the activation of platelets. As they affect the platelets that are circulating in the blood they are effective almost immediately. However as platelets are not so vital for clot formation in the atria they are less effective than anticoagulants at preventing strokes.

Antiplatelet agents are not usually used to prevent stroke in AF but may provide a little protection against this if you are on them for some other reason.

Which drug is best for me?

The choice of which drug is best for you depends on (i) your personal risk of stroke and (ii) if any intervention like cardioversion or ablation is planned.

A more detailed booklet on Blood thinning in atrial fibrillation is available from the AF Association.



AF Association

MEMBERSHIP APPLICATION

Register to become a member of
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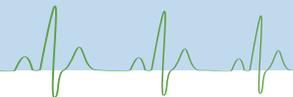
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Please remember that this publication provides general guidelines only.
Individuals should always discuss their condition with a healthcare professional.
If you would like further information or would like to provide feedback please contact AF-A.

