



Atrial Fibrillation Information Sheet

What is Atrial Fibrillation?

Atrial fibrillation is an abnormal heart rhythm during which the upper or filling chambers of the heart beat irregularly. Normally the pacemaker of the heart generates an electrical impulse, which is conducted or carried to the lower or pumping chambers of the heart via the electrical conducting tissues (wires) of the heart. This allows a natural sequence of contraction where the upper chambers (atria) beat first thus filling the lower chambers (ventricles). This sequence allows priming of the pumping chambers and contributes as much as 20% of the output of the heart. In atrial fibrillation, the heart's natural pacemaker, the sinus node, no longer generates an electrical impulse. Instead electrical activity occurs irregularly throughout both left and right atria. This irregular electrical impulse is conducted erratically to the ventricles, resulting in an irregular heartbeat which may be excessively fast and vary in volume from beat to beat.

Causes of Atrial Fibrillation

The commonest cause of atrial fibrillation is longstanding high blood pressure. Other common causes include valvular heart disease, weakened heart muscle due to coronary artery disease or cardiomyopathy (viral or unknown cause), degenerative disease of the electrical tissues of the heart, alcohol, hyperthyroidism or in many cases-idiopathic (no cause identifiable).

Symptoms of Atrial Fibrillation

When in atrial fibrillation the patient may feel his/her heart beating rapidly and irregularly (palpitation). Atrial fibrillation may cause chest pain, shortness of breath, dizziness, weakness or fatigue. In some patients there are no accompanying symptoms.

Is Atrial Fibrillation Dangerous?

If atrial fibrillation causes chest pain, shortness of breath, dizziness or congestive heart failure (water in the lungs), the arrhythmia may be dangerous and need to be corrected promptly. Usually however symptoms are not that severe and the arrhythmia may be dealt with less acutely. The major long-term danger of atrial fibrillation is an increased risk of stroke. The atria of the heart do not contract properly during atrial fibrillation. Blood flow is sluggish within the atria and this may lead to clot formation. If one of these clots breaks loose, it may travel to other parts of the body (embolism) resulting in stroke (cerebral embolism) or blockage of blood vessels throughout the body. Blockage of vessels to the limbs may cause inadequate blood supply (ischaemia) and endanger the limb. Similarly, blockage of a blood vessel in the abdomen may cause abdominal pain and bowel ischaemia, a condition that is life threatening.

What is the Treatment for Atrial Fibrillation?

In general the treatment of atrial fibrillation consists of:

- 1) medications to control the heart rate,
- 2) medications to restore normal sinus rhythm and
- 3) medications to thin the blood and prevent embolization. The need for chronic blood thinners can be predicted based on certain risk factors, which are detailed on the Atrial Fibrillation Decision Aide information sheet.
- 4) In some cases, efforts to restore the rhythm to normal sinus rhythm are carried out. These include various anti-arrhythmic medications or electrical means using external paddles under anaesthesia to deliver a synchronized shock to the heart. This procedure is called a Cardioversion.
- 5) In some cases anti-arrhythmic medications must be given long term to maintain normal sinus rhythm.
- 6) In some cases electrical studies of the heart are carried out along with a procedure to burn around the left atrium where the atrial fibrillation is coming from. This is called an atrial fibrillation ablation procedure.

