Catheter Ablation of Atrial Fibrillation

Dr Matthew Wright CCT Cardiology MRCP MB BS PhD is a cardiologist at Guy’s Hospital and St Thomas’ Hospital.

Atrial fibrillation (AF) is the most common form of sustained heart arrhythmia, with an estimated 1.7% of the general population in the UK affected. The prevalence increases with age, meaning that 8.5% of people will have AF by the age of 65, and 12% by the age of 80.

Atrial fibrillation is responsible for a quarter of all strokes, and managing the condition is complex, it requires risk analysis taking into account the appropriate use of anticoagulation, management of associated medical conditions such as hypertension and diabetes, and control of the patient's symptoms.

The natural progression of AF is one of the main factors that lead to paroxysmal AF (self-terminating, with episodes lasting less than a week), to persistent AF (electrical or pharmacological cardioversion needed to return to sinus rhythm, and episodes lasting longer than a week). The rate of progression from paroxysmal AF to persistent AF varies, but up to 30% of patients are in persistent AF within 5 years. All treatments aimed at maintaining sinus rhythm have been demonstrated to be more effective when patients are in paroxysmal rather than persistent AF, so early recognition and definitive treatment is essential.

The latest guidelines

The latest evidence on CHA2DS2-VASc scoring system to provide the risk for anticoagulation therapy needs to be similar to bleeding complications.

Although Warfarin, and the novel oral anticoagulants, has no major bleed, the HAS-BLED score is used with AF and the risk should be on anticoagulants.

Risk factor Score

- Congestive heart failure/LV dysfunction
- Hypertension
- Age ≥ 75
- Diabetes mellitus
- Stroke/TIA/thrombo-embolism
- Vascular disease
- Age 65-74
- Sex category (i.e. female sex)
- Maximum score

The latest guidelines

This site uses cookies to store information on your computer, to improve your experience. One of the cookies this site uses is essential for parts of the site to operate and has already been set. You may delete and block all cookies from this site, but parts of the site will not work. To find out more about the cookies this site uses and how to delete them, please see the privacy notice.

I accept cookies from this site.

Continue
For patients with persistent AF, long term success is related to its duration (patients with AF duration of less than two years do better), the left atrial diameter (the smaller the better), and the degree of organisation as measured by the coarseness of AF on a standard ECG (the 'coarser' the better).

Studies have also shown that for patients with both atrial flutter and AF, those undergoing an AF ablation as opposed to just ablation of typical atrial flutter do much better. It is therefore important for patients with atrial flutter to be assessed for AF with Holter monitoring, as these conditions co-exist in 30% of cases.

However, despite the strong evidence for the effectiveness of catheter ablation for patients with AF, the success rates are still not as good as those for other supraventricular tachycardias, such as AVNRT, and Wolff Parkinson White syndrome, where long-term cure rates are over 95%. Patients often require multiple procedures to have a long term freedom from AF.

The major reason for recurrence of AF in patients with paroxysmal AF who have undergone a catheter ablation is due to the pulmonary veins electrically reconnecting across previously ablated tissue. Over the last four years there has been considerable research into improving the ablation procedure using a number of technologies. Catheter contact is critical to forming stable lesions, yet until recently there was no way that the operator could objectively assess what contact force was being applied.

The latest catheter technology incorporates force sensing technology so that the operator can judge the contact at each individual lesion. Studies have already shown that there is a wide variation in operators with respect to force applied during ablation. It is hoped that by providing information on contact force, that success rates will improve further. (Early studies suggesting that this is indeed the case.) Bupa Cromwell Hospital uses the very latest in mapping and catheter technologies (figure 3), and has a very experienced team managing every aspect of the patient’s care.

In summary, the outlook for patients with AF is much brighter. Management of patients requires integrated care however, with appropriate risk assessment of stroke and bleeding risk, thorough assessment of symptoms with ambulatory and exercise monitoring, cardioversion, and assessing whether they are suitable for AF ablation.

For further information about our services please contact our GP Liaison Team on +44 (0)20 7460 5973.