Routine cardioversion for patients with atrial fibrillation

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In this issue, Sandler's paper (see pages 86–8) reinforces the growing body of evidence that should lead to the demise of the routine use of direct current cardioversion (DCCV) for patients with atrial fibrillation. This interesting paper highlights several issues surrounding DCCV within the context of a service re-design within a district general hospital. Despite a state-of-the-art service, the success of DCCV was limited, with sinus rhythm maintained in between the stated 20% (22/110) or even optimistically 40% (22/55) at around one year. I would suggest that this is unacceptable and that we would not allow any other procedure with significant associated morbidity to be undertaken with such a low chance of succeeding.

It may be that these figures are actually very good compared with data from other centres, given that this service was designed specifically to reduce the delay in receiving DCCV. It would be interesting, therefore, to have more data on the types of patients receiving cardioversion, and whether there are any factors that may predict both initial and long-term success. It is clear, for example, from other data that the current National Institute for Health and Clinical Excellence (NICE) recommendations to utilise cardioversion for patients with heart failure need revising.[1]

Patient selection

If we look at the results in some detail it is clear that the whole issue of patient selection and management prior to the procedure remains to be elucidated. In common with other centres, a high number of procedures were cancelled due to low International Normalised Ratio (INR) measurement. The current recommendation is for the INR to be maintained between 2.5 and 3.0 for six weeks prior to cardioversion. This is very difficult to achieve. Problems arise when the INR, having been stabilised using one monitoring system, is measured using a different monitoring system on admission. Surely the issue is not what the absolute INR value is, which can vary by 0.5 INR units even between reliable systems,[2] but rather whether there is clot in the left atrium. If we are to reduce the overall numbers of patients undergoing cardioversion would it not be safer, and more effective, to undertake high-resolution scanning to detect clot, rather than relying on indirect markers such as INR?

Sandler provides no data on outcomes other than sinus rhythm, thus we do not know if any direct harm was attributable to the procedure itself. Even without these data, however, only around half of patients were in sinus rhythm six weeks after the procedure. Thus, even in a state-of-the-art facility designed to minimise delay in receiving the procedure, only half of patients had a successful outcome at six weeks, with possibly only 20% at one year. No mention is made here of management of oral anticoagulation in these patients, and whether the patients lost to follow-up had significant morbidity or not. Given that other studies have demonstrated worse outcomes in terms of morbidity, such as hospital admissions and pulmonary symptoms, attributable to anti-arrhythmic drugs, this may be the cause of loss to follow-up.[3]

Is it acceptable?

The time has come, therefore, for those of us who manage patients with atrial fibrillation to question whether routine cardioversion is acceptable. Sandler outlines the current NICE criteria for consideration of

restoration of sinus rhythm as "symptomatic, younger patients, those presenting for the first time with lone AF, those with AF secondary to a treated/corrected precipitant and those with congestive heart failure". We have already seen that heart failure is not an indication for cardioversion, and it may be that, with time, the other indications drop off also.

I would argue that cardioversion should currently only be considered for patients with acute onset of atrial fibrillation, probably within 24 hours, or for patients who remain symptomatic despite optimal medical therapy. I would re-iterate that even in these scenarios, successful cardioversion cannot automatically lead to discontinuation of oral anticoagulation therapy. As it stands, I would recommend continuing oral anticoagulation therapy for at least one year following successful cardioversion. If sinus rhythm is maintained at one year, it may be worth a trial without anticoagulants, however, regular review would be absolutely essential

Conflict of interest

None declared.

Editors' note

Please see the article 'Whatever happens to the cardioverted' by David A Sandler on pages 86–8 of this issue.

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