EFFECT OF CANCELLING ELECTIVE CARDIOVERSION AND CATHETER ABLATION IN PATIENTS WITH ATRIAL FIBRILLATION

CP-139

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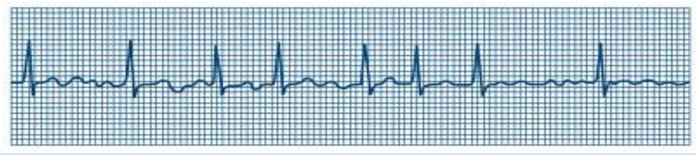
BACKGROUND

Atrial fibrillation (AF) is the most commonly occurring arrhythmia prevalent in 1-2% of the UK population.[1] Electrical cardioversion (ECV) and catheter ablations are elective non-pharmacological approaches used to restore sinus rhythm (SR) in patients with AF.[2,3] Patients require anticoagulation peri-procedurally to prevent thromboembolic events.

KEYWORDS:
Anticoagulation; atrial fibrillation; catheter ablations; cardioversion; direct-acting oral anticoagulants.



AIM AND OBJECTIVES

To evaluate the reasons for procedure cancellations in patients with AF, and investigate the impact on patient outcome post-procedure, including its association with waiting time and cost.

Objectives:

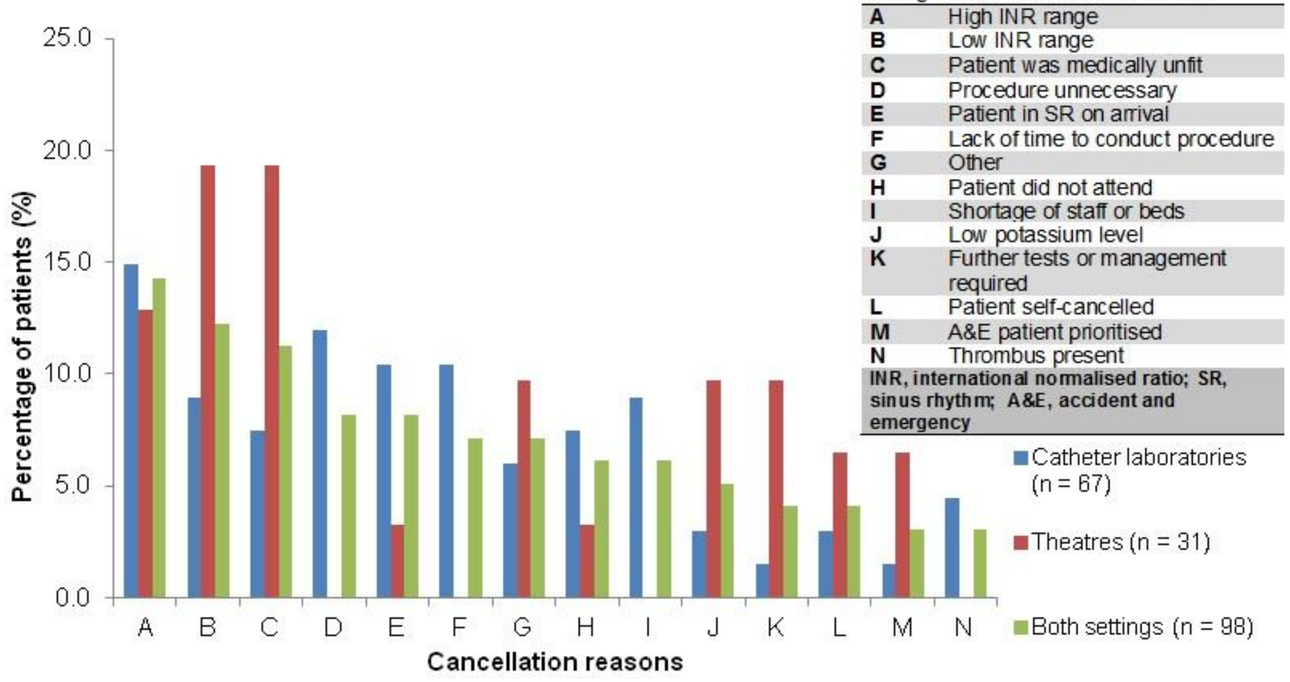
- Identify reasons for appointment cancellations
- Record length of waiting time and whether the patient reached SR
- Calculate the loss of revenues associated to cancelled procedures
- Identify potential solutions to improve the quality of service

MATERIAL AND METHODS

- A retrospective service evaluation was conducted at a UK teaching hospital.
- Appointments for ECV and ablation procedures from August 2012 to August 2013 were studied; 72 patients (cancellation group) experienced cancellations and 89 patients (control group) experienced none.
- 'Electronic Patient Records' and 'TOMCAT' computer softwares were used to obtain data. For the Mann-Whitney *U* and chi-squared tests, $p < 0.05$ was considered significant.

RESULTS

1. Cancellation Reasons



Categories of Cancellation Reasons	
A	High INR range
B	Low INR range
C	Patient was medically unfit
D	Procedure unnecessary
E	Patient in SR on arrival
F	Lack of time to conduct procedure
G	Other
H	Patient did not attend
I	Shortage of staff or beds
J	Low potassium level
K	Further tests or management required
L	Patient self-cancelled
M	A&E patient prioritised
N	Thrombus present

INR, international normalised ratio; SR, sinus rhythm; A&E, accident and emergency

Figure 1: Percentage (%) of elective patients experiencing a cancellation of an electrical cardioversion or a catheter ablation appointment in cardiac catheter laboratories, theatres and overall in both settings due to cancellation reasons identified.

Figure 1 shows that in both settings, the three most common occurring cancellation reasons were high INR range, low INR range and patient being medically unfit.

- 93/816 (11%) appointments were cancelled.
- 76/93 (82%) appointments were cancelled on the day of the procedure.
- 62/93 (67%) appointments required rescheduling. These patients waited a median of 19 days; the interquartile range was: 7-53 days.

2. Procedure Waiting Time

Table 1: Electrical cardioversion and catheter ablation procedure waiting time (weeks) for patients from point of referral by an appropriate practitioner.

	Control Group (*n* = 89)	Cancellation Group (*n* = 70)	Total patient sample (*n* = 159)
Procedure waiting time *Mdn* (IQR) (weeks)	9 (7 – 12)	12 (9 – 19)	10 (7 – 15)
Waiting more than 18 weeks *n* (%)	5 (6)	16 (27)	21 (13)

Mdn: Median; IQR: Interquartile range (25th Quartile – 75th Quartile).

Table 1 shows the cancellation group waited a longer time for their procedure ($U = 2318$ and $p = 0.006$) and were more likely to breach the 18-week wait (target set by national standards) [χ^2 (1) = 15.579 and $p < 0.001$] compared to the cancellation group.

3. Cost of Cancelled Procedures

Table 2: Cost (£) of cancelled electrical cardioversion and catheter ablation procedures that had not been replaced ($n = 85$) in catheter laboratories and theatres from 1st August 2012 – 31st August 2013.

Total cost (£)	Cost associated to INR ranges* (£)	Percentage (%) of total cost associated to INR ranges*
169, 070	44, 712	26

*This included subtherapeutic, inconsistent or missing international normalised ratio (INR) values.

4. Patient Outcome

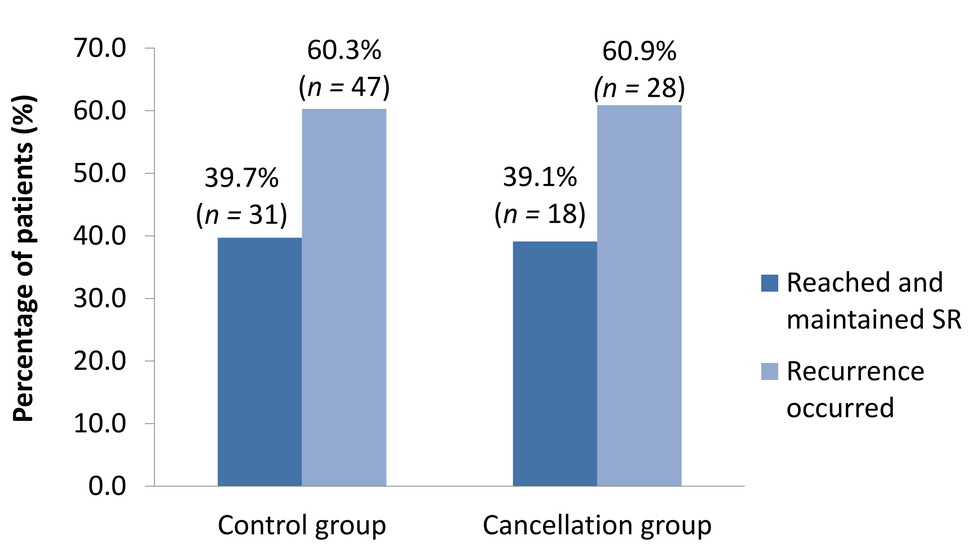


Figure 2: Comparison of the percentage (%) of control group patients ($n = 78$) and cancellation group patients ($n = 46$) who reached and maintained sinus rhythm (SR) or experienced a recurrence of an arrhythmia after their electrical cardioversion and catheter ablation procedures. NB. Not all patients followed up within the study period.

*Figure 2 shows n*o difference between the two groups with respect to reaching and maintaining SR or experiencing recurrences; χ^2 (1) = 0.005, $p = 0.946$.

CONCLUSION

ECV and catheter ablation cancellations create a financial burden for the department whilst also delaying potential symptomatic relief for the patient. Approximately ¼ of the loss in revenues were due to subtherapeutic INR. Prescribing direct-acting oral anticoagulants (DOACs), alongside pre-operative assessments, may prevent INR-related cancellations and this is an expanding area of use. Post-marking surveillance is still ongoing but the risk of poor patient adherence to treatment and post-procedure bleeding needs to be balanced with the potential gains to the department and patient.

Further work is required on identifying variables contributing to patient factors leading to increased waiting times.

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