Uninterrupted warfarin for periprocedural anticoagulation in catheter ablation of typical atrial flutter: a safe and cost-effective strategy


Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
The objective was to examine the clinical and economic impact of warfarin versus heparin for patients undergoing catheter ablation for typical atrial flutter. The authors concluded that uninterrupted warfarin was safer and more cost-effective than changing to low molecular weight heparin. The methods appear to have been appropriate and the results were presented clearly. The conclusion reflected the scope of the study.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The objective was to examine the clinical and economic impact of warfarin versus heparin for patients undergoing catheter ablation for typical atrial flutter.

Interventions
Uninterrupted warfarin was compared with low molecular weight heparin (LMWH). Patients in the LMWH group stopped warfarin five days before the procedure and received subcutaneous enoxaparin (1mg/kg) twice a day. After the procedure, they received two doses of either 5 or 10mg of warfarin. Patients in the uninterrupted warfarin group received warfarin, with a target international normalised ratio of between two and three, continuously before and after the procedure.

Location/setting
UK/secondary care.

Methods
Analytical approach:
This economic analysis was based on a cohort study of 101 patients. The time horizon was the length of the hospital stay. The authors did not state the perspective.

Effectiveness data:
The clinical estimates were from one cohort study, which used an intention-to-treat approach. The first 51 (median age 65 years and 76.5% men) of 101 consecutive patients were allocated to the LMWH group and the next 50 (median age 67 years and 82% men) were allocated to the warfarin group. The primary clinical endpoint was access-site complications, which included pain, bruising, lump, bleeding, or any other site-related problem that needed treatment. A secondary endpoint was the success rate for the procedure.

Monetary benefit and utility valuations:
None.

Measure of benefit:
No summary benefit measure was used. The key clinical endpoint was the percentage of patients with access-site complications.
Cost data:
The economic analysis included the costs of medicines and transoesophageal echocardiogram. The unit costs were from official UK sources. The data on resource use were from the sample of patients enrolled in the clinical study. All costs were reported in UK pounds sterling (£).

Analysis of uncertainty:
A statistical analysis of the difference in the clinical and economic outcomes between the groups was conducted.

Results
With LMWH, 56.8% of patients had access-site complications versus 36% with warfarin. Four patients on LMWH and none on warfarin required hospital readmission due to bleeding-related complications, while three on LMWH and 11 on warfarin underwent transoesophageal echocardiogram before the procedure.

The total costs were £125 for LMWH and £108.5 for warfarin patients (p<0.0001).

Authors’ conclusions
The authors concluded that uninterrupted warfarin was safer and more cost-effective for anticoagulation in catheter ablation for typical atrial flutter, compared with changing to LMWH before the procedure.

CRD commentary
Interventions:
The two options were appropriately selected in that they were both commonly used anticoagulation therapies.

Effectiveness/benefits:
The clinical evidence was from a cohort study. This design is open to bias in patient selection, as the authors acknowledged, but they tried to minimise any selection bias by using consecutive patients.

Costs:
The authors did not state the perspective of the economic analysis, so it is not clear if all the relevant costs were included. The cost categories and resource quantities were reported clearly and the sources of data were provided. These factors improve the transparency of the analysis. The price year was not reported.

Analysis and results:
The costs and benefits were not synthesised as there was no summary measure of benefit. The findings were clearly reported. The authors compared the results of their analysis with those from other studies.

Concluding remarks:
The methods appear to have been appropriate and the results were presented clearly. The conclusion reflected the scope of the study.

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