Cost effectiveness of day stay versus inpatient radiofrequency (RF) ablation for the treatment of supraventricular tachyarrhythmias

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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.

Health technology
Day-stay radiofrequency (RF) ablation for the treatment of supraventricular tachyarrhythmias

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Patients with supraventricular tachycardia related to either accessory atrioventricular pathway (AV) or dual AV nodal pathways.

Setting
Hospital. The economic study was carried out in Perth, WA, Australia.

Dates to which data relate
The effectiveness and resource use data for the intervention group were collected between 18 March 1993, and 29 November 1993. The effectiveness and resource use data for the comparator were collected between 14 August 1992 and 16 November 1992. The price year was 1994.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was undertaken retrospectively on the same patient sample as that used in the effectiveness analysis.

Study sample
No power calculations were reported. A total of 50 patients was included in the study, 25 forming the intervention group with an average age of 40 (range: 19 - 69) years, and another 25 making up the comparator group with an average age of 41 (range: 9 - 75) years.

Study design
This was a non-randomised study with historical controls, carried out in a single centre. The mean (SD) duration of
follow-up was six (three) months for the intervention group and 17 (one) months for the comparator group.

**Analysis of effectiveness**
The analysis was based on intention to treat. The primary health outcomes used in the study were the successful ablation (asymptomatic follow-up), and complication rates. The groups were shown to be comparable in terms of gender, age, and type of supraventricular tachycardia.

**Effectiveness results**
The rate of success for the intervention and control groups was, respectively, 96% (24 out of 25 patients) and 84% (21 out of 25). No complications were present in either group.

**Clinical conclusions**
In most instances same day discharge is possible and reasons for overnight admission most often become apparent during, or immediately after, the procedure.

**Measure of benefits used in the economic analysis**
The rate of successful treatment was used as the measure of benefit in the economic analysis.

**Direct costs**
Costs were not discounted since the costs until discharge were covered in the cost analysis. Most quantities of resource use were not reported separately from costs. Costs items were reported separately. The hospital costs measured were procedural costs, ward costs, and preadmission and investigation costs. The cost estimation was based on actual data from the institution, published data (Medicare charges were used for unit cost of laboratory investigations) and assumptions (regarding times of reuse of intracardiac and ablation catheters). The costs were adjusted to the 1994 price year by using the Consumer Price Index published by the Australian Bureau of Statistics. The costs were calculated from the date of the preadmission visit to the date of discharge. The date of the price data was 1994. The costs associated with overheads and equipment were excluded from the analysis.

**Statistical analysis of costs**
Mean and standard deviations were reported, and Student’s t test was performed.

**Indirect Costs**
Not considered.

**Currency**
Australian dollars (Aus$).

**Sensitivity analysis**
Not conducted.

**Estimated benefits used in the economic analysis**
The expected rate of success for the intervention was 96%, whereas that for the comparator was 84%.

**Cost results**
The mean total cost per patient for the intervention was Aus$1,876 (SD, Aus$595). The mean total cost per patient for the comparator was Aus$2,354 (SD, Aus$642). The p value of the difference was less than 0.01.

**Synthesis of costs and benefits**
The costs and benefits were not combined since the intervention turned out to be the dominant strategy.

**Authors’ conclusions**
Day-stay ablation is a safe and cost-effective alternative to inpatient RF ablation for most patients with supraventricular tachyarrhythmias.

**CRD COMMENTARY - Selection of comparators**
The reason for the choice of comparator is clear.

**Validity of estimate of measure of benefit**
The internal validity of the estimate of effectiveness can not be guaranteed due to the relatively small sample size.

**Validity of estimate of costs**
Quantities of resource use were not systematically reported separately from the prices and overhead and equipment costs were omitted from the analysis. Adequate details of the methods of cost estimation were given. Charge data were used in some cases rather than true costs. The study lacked a prospective cost analysis.

**Other issues**
The results of this study were found to be similar to those presented in a study from the USA. The difference found in terms of level of costs was explained by the differences in the health care practice between the two countries. The results were not presented selectively. Given the lack of a prospective design and sensitivity analysis, the results may need to be treated with some caution.

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