Same-day admissions and other cost-saving strategies for elective aortoiliac surgery
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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
Same-day admissions and other resource utilization methods for elective aortoiliac surgery (AoIS).

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Male and female patients who were admitted for surgery to undergo elective AoIS.

Setting
Hospital. The economic study was carried out in Pennsylvania, USA.

Dates to which data relate
The main effectiveness data were taken from a single study conducted in 1994-95. Resource and cost data were mainly derived from 1992-95 sources. The price year was not given.

Source of effectiveness data
The estimates of mortality rate, rate of complications, total length of hospital stay, length of stay in the intensive care unit and readmission rates within 30 days of discharge were derived from a single study.

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

Study sample
A cohort of 128 patients was included in the analysis. Seventy-one patients (Group I) were admitted for elective infrarenal AoIS before the day of surgery without any identifiable medical reasons to prepare them for operation (mean age: 70.1 years, 73% male, 92% Caucasian, 17% retroperitoneal incision, 65% epidural analgesia). Fifty-seven patients (Group II) were admitted on the day of surgery (mean age: 68.3 years, 70% male, 93% Caucasian, 27% retroperitoneal incision, 91% epidural analgesia). Power calculations to determine the sample size were not undertaken.

Study design
Nonrandomized trial with concurrent controls. The duration of the follow-up was not stated. There was no loss to follow-up.

**Analysis of effectiveness**
The analysis of the clinical study was based on intention to treat. The primary health outcomes were mortality rate, rate of complications, total length of hospital stay, length of stay in the intensive care unit and readmission rate within 30 days of discharge.

**Effectiveness results**
The mortality rate was 0% in both groups (p>0.05). The complication rates (p>0.05) for Groups I and II were:

- cardiac 1.4 versus 0%,
- pulmonary 9.9% versus 5.3%
- and renal 1.4% versus 0%.

The total length of hospital stay was 6.4 versus 11.2 days for Groups I and II respectively (p<0.0001). The length of stay in the intensive care unit was 1.2 days for Group I versus 2.3 days for Group II (p<0.0001). The readmission rates within 30 days of discharge were 5.6% versus 5.2% for Groups I and II respectively (p>0.05).

**Clinical conclusions**
Patients who require elective infrarenal AoIS can be admitted the day of surgery without increase in morbidity and mortality rates.

**Measure of benefits used in the economic analysis**
No single summary benefit measure was determined. As the intervention and comparator had statistically similar outcomes, the main benefit was reduction of costs (cost-minimization).

**Direct costs**
Hospital costs were included in the analysis. The quantities were analysed separately from the prices. The quantity/cost boundary adopted was the hospital. Discounting was not undertaken due to the short period of follow-up. The price year was not stated.

**Statistical analysis of costs**
Not stated.

**Currency**
US dollars ($).

**Sensitivity analysis**
Not undertaken.

**Estimated benefits used in the economic analysis**
Not applicable.
Cost results
Total costs for the intervention and comparator were not provided. The hospital costs per patient were $45,694 for Group I and $34,198 for Group II.

Synthesis of costs and benefits
A synthesis of the estimated benefits and costs was not provided since the comparator was both more effective and less costly, and was therefore the dominant strategy.

Authors' conclusions
Patients who require elective infrarenal AoIS can be admitted on the day of surgery and can undergo early discharge with significant hospital cost savings and without increase in morbidity or mortality rates.

CRD COMMENTARY - Selection of comparators
The reason for the choice of comparator is clear. Same-day admission is a proposed alternative strategy for elective AoIS. You, as a user of this database, should consider whether these are relevant health technologies in your setting.

Validity of estimate of measure of benefit
The estimate of measure of benefit used in the economic analysis was based on cost alone. The data have not been used selectively although the authors noted that there were some significant differences between the groups, for example in the number receiving epidural analgesia and those suitable for clinical pathway management. As no sensitivity analysis was conducted the results need to be treated with some caution.

Validity of estimate of costs
Resource quantities were not reported separately from the prices and only an overall cost per patient was provided in the cost analysis. Costs were not specifically itemised. The authors also noted that there was a shift of costs from the hospital to outpatient care which accounted for much of the cost saving. Real savings may therefore not have been achieved.

Other issues
The authors' conclusions are likely to be justified given the uncertainties in the data. The issue of generalisability to other settings/countries was addressed in terms of clinical pathway management as its potential may vary from one hospital to another.

Implications of the study
More research is required into different surgical techniques, using prospective analysis from the patient's perspective.

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