Critical limb ischaemia in patients over 80 years of age: options in a district general hospital

Humphreys W V, Evans F, Watkin G, Williams T

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
Vascular reconstruction in critical limb ischaemia patients.

Type of intervention
Treatment.

Economic study type
Cost-utility analysis.

Study population
Elderly patients (over 80 years of age) with critical limb ischaemia.

Setting
The practice setting was a hospital. The economic study was carried out in Wales, UK.

Dates to which data relate
Effectiveness and resource use data were collected between 1984-1994. The price year was not specified.

Source of effectiveness data
Evidence for final outcomes was derived from a single study.

Link between effectiveness and cost data
The costing was performed on the same patient sample as that used in the effectiveness analysis, although it was not explicitly specified whether it was performed prospectively or retrospectively.

Study sample
Power calculations were not used to determine the sample size. A total of 115 patients were included in the study. 33 (29%) had primary amputations whilst 82 (71%) had reconstructions. The total number of reconstruction operations was 114 and the total number of primary amputation operations was 36.83% of reconstruction patients and 70% of primary amputation patients were independent before the operations.

Study design
This was a cohort study, carried out in a single centre. The mean follow-up period was 3 years. No loss to follow-up was reported.
Analysis of effectiveness
The principle (intention to treat or treatment completers only) used in the analysis of the clinical results was not stated. Primary health outcomes were operative mortality, mean survival, failed survivor reconstructions, secondary amputations, and social consequences for those independent before operation and alive after operation.

Effectiveness results
The primary health outcome figures for the reconstruction group (amputation group figures are in parenthesis) were:

1. Operative mortality: 9 of 82, or 11% (15 of 33, or 45%);
2. Failed survivor reconstructions: first 28 of 73, or 38% after revision;
3. Secondary amputation: 21 of 73, or 29%;
4. Mean survival: 34 months (6 months if operative deaths were included; 25 months in others);
5. Social consequences for those independent before operation and alive after operation in:
   a. The same home: 45/68, or 66% (5/15, or 33%);
   b. Nursing/residential home: 15/68, or 22% (8/15, or 53%);
   c. Relative's care: 8/68, or 12% (3/15, or 45%).

Only 50% of reconstructed patients survived 3 years.

Clinical conclusions
There was a high proportion of primary graft failures compared with other series with lower mean age group.

Measure of benefits used in the economic analysis
Rosser pre- and postoperative quality of life (QOL) valuations were assessed, and collected from the patients by a specialist clinical nurse.

Direct costs
Costs were not discounted despite the study having a follow-up period longer than one year. Direct costs were calculated, but were only revealed in their operational and final total(s). Quantities and costs were not analysed separately. The cost items were not systematically reported separately. The cost analysis covered the operative costs (including reoperations and secondary amputation) and long-term costs including the costs of change of habitation (nursing home or residential home) and aids to daily living. The perspective used was that of the health service and community. The date of the price data was not specified.

Indirect Costs
Not considered.

Currency
UK pounds sterling (€).

Sensitivity analysis
Not performed.
Estimated benefits used in the economic analysis
Preoperative quality of life (QOL):

reconstruction = 0.27 (SD, 0.1);

amputation = 0.17 (SD, 0.04).

Postoperative QOL:

reconstruction = 0.41 (SD, 0.22);

amputation = 0.24 (SD, 0.19).

Note: QOL for patent graft reconstruction patients increased from 0.27 to 0.51 (t=6.8, P<0.001, Student's t test).

Cost results
The mean operative costs (including reoperations and secondary amputations) were 10,222 (reconstruction), and 6,475 (amputation) per patient. The average total cost of reconstruction was 13,546 versus 33,095 for amputation.

Synthesis of costs and benefits
A synthesis was not performed since reconstruction was the dominant strategy.

Authors' conclusions
Generally, younger patients with critical limb ischaemia should have reconstructive vascular surgery. The options available in the very elderly may not be as obvious, although the pre- and postoperative QOL figures may help that particular decision making process.

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

Validity of estimate of measure of benefit
The internal validity of the estimate of benefit may be weakened by the lack of randomisation.

Validity of estimate of costs
Resource utilisation was not reported separately from the costs. However adequate details of methods of cost estimation were given. The sources of cost data, the type of costing (prospective or retrospective), and the dates of the price data were not specified.

Other issues
In view of the lack of randomisation, sensitivity analysis, and statistical analysis of the costs, the results need to be interpreted with some caution. The issue of generalisability to other settings or countries was not addressed.

Implications of the study
A randomised controlled trial with the above information included would go some way in validating the results of this study.

Source of funding
None stated
Bibliographic details

PubMedID
7489165

Indexing Status
Subject indexing assigned by NLM

MeSH
Aged; Aged, 80 and over; Amputation /economics; Blood Vessel Prosthesis /economics; Hospital Costs; Hospital Mortality; Hospitals, District; Hospitals, General; Humans; Ischemia /economics /mortality /surgery; Leg /blood supply; Quality of Life; Treatment Outcome; Wales

AccessionNumber
21995001168

Date bibliographic record published
31/07/1999

Date abstract record published
31/07/1999