Multiple use of fibres in the visual laser ablation of the prostate
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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
Multiple use of fibres in visual laser ablation of the prostate (VLAP) versus single use (no re-use) of fibres in VLAP.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Patients admitted for routine TURP with a mean maximum urinary flow rate of less than 14.0 ml

Setting
Hospital. The economic study was carried out in Taunton, UK.

Dates to which data relate
Not reported.

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 clinical analysis.

Study sample
No power calculations were performed. 34 patients were included in the study, and seven were treated with a new fibre. Twenty-seven patients were treated with re-used fibres, 6 being treated with fibres being used for the second time and 21 being treated with fibres being used for a third time or more.

Study design
Cohort study, carried out in a single centre. The duration of follow up was 12 months after the operation. The loss to follow up was 6%.

Analysis of effectiveness
The analysis of effectiveness was based on intention to treat. The primary health outcomes used were a decrease in symptom score (using an American Urological Association symptom score), an increase in mean urinary flow rate (mL/s), a decrease in mean ultrasonographic residual volume of urine (mL), and complication rate.

**Effectiveness results**
The decrease in symptom score for patients treated with new fibres was 13.8 (7.4 SD). Patients treated with second use fibre had a decrease in symptom score of 16.8 (SD 7.8). The range of scores for patients treated with third use and more was from 2, for sixth use, to 16.2, for the third use. The group of patients with new fibres being used had an increase in urinary flow rate of 1.9 (6.4 SD) mL/s, whereas the second-use-of-fibre group had a corresponding figure of 2.8 (5.0 SD) mL/s. The corresponding range for patients treated with third use and more fibres was from 0.7 for the third to 11.6 for the fourth use. In terms of decrease in residual volume, the mean values were 58 (25 SD) mL and 59 (65) mL, respectively. The corresponding range for patients treated with third use and more was from 1 for the fifth to 284 for the sixth use. The incidence of urinary tract infection was 15% for the study cohort, including one patient treated with a new fibre.

**Clinical conclusions**
There is no justification for a policy of single-use of fibres on the basis of efficacy. Provided the efficiency of the fibre is monitored by a power meter, the outcome for patients treated with a re-used fibre was equivalent to that obtained with the first use.

**Measure of benefits used in the economic analysis**
No summary benefit measure was identified in the economic analysis and only separate clinical outcomes were reported.

**Direct costs**
The quantities of new fibre used in the re-use of fibres group were reported. The cost measured was the cost of each fibre. No further details were provided.

**Indirect Costs**
Not considered.

**Currency**
UK pounds Sterling (£).

**Sensitivity analysis**
No sensitivity analysis was performed.

**Estimated benefits used in the economic analysis**
Not applicable

**Cost results**
The cost of the re-used fibre strategy was 4,550. The cost in the new-fibre (no re-use) group would have been 22,100. The average saving for every patient treated, as a result of re-use, was 516.

**Synthesis of costs and benefits**
A synthesis was not performed since the re-use policy was regarded as the weakly dominant strategy.

**Authors' conclusions**
The present results imply that the cost of the VLAP can be reduced simply by re-using the laser fibre until it fails to deliver sufficient power. Thirty-four patients were treated safely with seven fibres. The only complications were related to urinary tract infection which did not exceed the expected incidence after transurethral resection of the prostate (TURP).

**CRD COMMENTARY - Selection of comparators**
The reason for the choice of comparator was clear. Single use of fibres in VLAP was chosen as it represented the usual recommendation in the context in question.

**Validity of estimate of measure of benefit**
The internal validity of the results is weakened by the lack of randomisation and the small sample size.

**Validity of estimate of costs**
The cost analysis lacked adequate details. The dates when the study was carried out were not reported.

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

**Source of funding**
None stated.

**Bibliographic details**

**PubMedID**
8705218

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Aged; Aged, 80 and over; Equipment Reuse; Fiber Optic Technology; Health Care Costs; Humans; Laser Therapy /economics /instrumentation; Length of Stay; Male; Middle Aged; Prostatectomy /economics /instrumentation /methods; Prostatic Hyperplasia /economics /physiopathology /surgery; Treatment Outcome; Urination /physiology

**AccessionNumber**
21996000700

**Date bibliographic record published**
31/03/1999

**Date abstract record published**
31/03/1999