Comparative cost analysis of collagen injection and fascia lata sling cystourethropexy for the treatment of type III incontinence in women

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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
Using fascia lata sling cystourethropexy versus perirethral collagen injection for surgical treatment of women with intrinsic sphincter deficiency (type III genuine stress urinary incontinence).

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Elderly women with intrinsic sphincter deficiency.

Setting
Academic institution. The economic study was carried out in Iowa City, USA.

Dates to which data relate
The data for the effectiveness analysis and resources used were collected between May 1994 and July 1995. 1995 prices were used.

Source of effectiveness data
The evidence for final outcomes was 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 study.

Study sample
Power calculations were not used to determine the sample size. There were 14 patients in the cystourethropexy group, and 14 age-matched patients in the collagen group.

Study design
The study was a non-randomized controlled trial with concurrent controls, carried out in single centre. The average follow-up period was 14.9 months for the cystourethropexy group, and 21.3 months for the collagen group.
Analysis of effectiveness
It is not clear whether the analysis of the clinical study was based on intention to treat or treatment completers only. The clinical outcomes were measured by average follow up, average operative time, average hospital stay, percentage of patients with one or no pad, percentage of completely continent patients, and complication rate. The patients completed two rating scales so that continence could be measured objectively and subjectively, preoperatively and postoperatively. Alternative groups were shown to be comparable in age and the number of prior procedures. There was no report of confounding variables.

Effectiveness results
The average follow up for the cystourethropexy group was 14.9 months (range: 10 - 22) and 21.3 months (range: 7 - 29) for the collagen group. The average operative time was 186 minutes for the cystourethropexy group and 57 minutes for the collagen group. The average hospital stay for the cystourethropexy group was 2.9 days, and 0 days for the collagen group. 85% of patients in the cystourethropexy group had one or no pad daily (collagen group: 40%). 71.4% of patients in the cystourethropexy group were completely continent compared with 26.7% in the collagen group (p=0.05). The complication rate for the cystourethropexy group was 14% (2 patients), and 7% (1 patient) for the collagen group. Wilcoxon's rank sum test was used to evaluate and analyse all data, but they were not reported systematically for the clinical outcomes in the paper.

Clinical conclusions
The study demonstrated a lower success rate for endoscopic collagen injection compared with previous studies. The authors stated that the reason for this difference is unclear. The success rate of sling cystourethropexy in this study was comparable to the reported rates in other studies. Sling cystourethropexy had a greater success rate than endoscopic collagen injection in this study.

Measure of benefits used in the economic analysis
The main measure of benefit was the success rate, namely the percentage of completely continent patients. The patients completed two rating scales in order for continence to be measured objectively and subjectively, preoperatively and postoperatively. Patients' assessments were used to evaluate the success rate. Follow up data were gathered by telephone interview by one of the authors.

Direct costs
Costs were not discounted. The costs were reported separately and were measured by room charges, the cost of supplies, pharmacy, radiology, laboratory, operating room, postoperative care, total hospital charges, physicians' fees and cumulative total expense. The costs were calculated from the payer's perspective. The cost data were extracted from the individual hospital billing statements. 1995 prices were used.

Statistical analysis of costs
Wilcoxon's rank sum test were used to evaluate and analyse all cost data.

Indirect Costs
Not estimated.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was carried out.
Estimated benefits used in the economic analysis
71.4% of patients in the cystourethropexy group were completely continent compared to 26.7% in the collagen group. The difference in complication rates between the two groups was statistically insignificant.

Cost results
The average total cost of fascia lata sling cystourethropexy was $10,382 against $4,996 for periurethral endoscopic collagen injection (p<0.001). The costs of adverse effects were not addressed.

Synthesis of costs and benefits
Costs and benefits were not combined in any specific measure, but the authors compared them so that, according to this comparison, fascia lata sling cystourethropexy was 2.1 times (P<0.001) more expensive than endoscopic collagen injection, but 2.67 times (P=0.05) more effective.

Authors’ conclusions
Fascia lata sling cystourethropexy may be a more cost-effective surgical treatment than periurethral endoscopic collagen injection for treating stress urinary incontinence in women with intrinsic sphincter deficiency when the greater success rate of the former procedure is considered.

CRD COMMENTARY - Selection of comparators
An implicit justification was given for the choice of the comparator. The comparator was a common health technology in dealing with intrinsic sphincter deficiency.

Validity of estimate of measure of benefit
The lack of randomization and sensitivity analysis, and the small sample size may have had detrimental effects on the power of the study.

Validity of estimate of costs
The resource quantities were not reported separately from the prices. Adequate details of cost estimation were given.

Other issues
The issue of generalisability to other settings or countries was not addressed. Future trials are needed which also consider quality of life issues.

Source of funding
None stated.

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Other publications of related interest
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