The economic impact of using alfuzosin 10 mg once daily in the management of acute urinary retention in the UK: a 6-month analysis

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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
The use of alfuzosin in the treatment of acute urinary retention (AUR) related to benign prostatic hyperplasia (BPH). Placebo (watchful waiting) and immediate prostatectomy were used as the comparators.

Type of intervention
Secondary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients hospitalised after the first episode of AUR related to BPH.

Setting
The setting was unclear, but it was likely to have been secondary care in the UK.

Dates to which data relate
The principal parameters in the model were derived from a study published in 2005. The cost figures used in the model were from In-Patient Diagnostic-Related Group data 2002, inflated to equivalent costs in 2003.

Source of effectiveness data
The evidence for the effectiveness was derived from published literature, much of the data being derived from a single study (McNeill et al. 2005, see 'Other Publications of Related Interest' below for bibliographic details).

Modelling
A literature-based decision-analytic model was developed to assess the clinical outcomes and economic costs associated with alfuzosin, placebo and immediate prostatectomy.

Outcomes assessed in the review
The outcomes assessed were:

successful TWOC in the alfuzosin and placebo groups;

the probability of prostatectomy in the alfuzosin and placebo groups;
the probability of catheter "ad vitam"; and
the proportion of transurethral (TURP) prostatectomies.

**Study designs and other criteria for inclusion in the review**
The main study that provided data for successful TWOC was a randomised double-blind trial. However, no inclusion criteria were specified.

**Sources searched to identify primary studies**
Not reported.

**Criteria used to ensure the validity of primary studies**
Not reported.

**Methods used to judge relevance and validity, and for extracting data**
Not reported.

**Number of primary studies included**
Approximately 3 studies were included in the review.

**Methods of combining primary studies**
The primary studies were not combined.

**Investigation of differences between primary studies**
Not relevant.

**Results of the review**
The chance of a successful TWOC with placebo was 0.479, compared with 0.618 for a TWOC with alfuzosin.

The proportion requiring prostatectomy was 0.181 with placebo and 0.122 with alfuzosin.

The proportion with catheter "ad vitam" was 0.032.

The proportion of TURP if prostatectomy was performed was 0.68.

**Measure of benefits used in the economic analysis**
The authors did not use a summary benefit measure as the primary objective of the study was a cost analysis. In effect, a cost-consequences analysis was performed.

**Direct costs**
The health service costs were included in the analysis. The estimates of resource use were derived from the literature, while the costs were based on data from the NHS. Some costs were not readily available and three calculations, which utilised authors' assumptions, were employed. These were explicitly explained in the paper. Costs from 2002 were used and were inflated to equivalent costs in 2003 using an inflator factor of 1.035. Discounting was not carried out, but it was not relevant as the costs were incurred during less than 2 years.
Statistical analysis of costs
Mean values and ranges were provided.

Indirect Costs
The indirect costs were not included.

Currency
UK pounds sterling ( ).

Sensitivity analysis
A decision tree analysis and Monte Carlo simulation were used, allowing a probabilistic uncertainty analysis. The distributions of the uncertain model variables (cost and risks) determined the distribution of the model outcomes.

Estimated benefits used in the economic analysis
See the 'Effectiveness Results' section.

Cost results
Treating patients with alfuzosin during initial hospitalisation for AUR in the first 6 months after a successful TWOC generated a cost-saving of 349 relative to placebo. Savings related to immediate prostatectomy were 892. Both savings were significant, (p<0.05).

Undertaking a TWOC with no adjunctive medication was also cost-saving in comparison with immediate prostatectomy (543), with greater than 95% certainty.

If the number of patients having an immediate prostatectomy after failed TWOC was 42% instead of 24%, as used in the present base-case analysis, the savings with alfuzosin were even higher at 399 versus 349.

Synthesis of costs and benefits
The costs and benefits were not combined as the primary objective of the study was a cost analysis.

Authors' conclusions
Treatment with alfuzosin 10 mg once daily before and after a successful trial without catheter (TWOC) has both clinical and economic benefits. It decreases the need for emergency surgery for benign prostatic hyperplasia (BPH) and reduces treatment costs in the first 6 months.

CRD COMMENTARY - Selection of comparators
Although no explicit justification was given for the comparators used, they were explicitly reported and were appropriate for the study question. You should consider whether they represent widely used technologies in your own setting.

Validity of estimate of measure of effectiveness
The principal input parameters for the model were derived from a large, randomised, double-blind multi-centred study which was appropriate for the study question. Few other details were reported, as the randomised controlled trials was just one of a few studies taken from the literature.
Validity of estimate of measure of benefit
No summary benefit measure was used as the primary objective of the paper was a cost analysis. In effect, a cost-consequences analysis was conducted. Please refer to the comments in the ‘Validity of estimate of measure of effectiveness’ field (above).

Validity of estimate of costs
The perspective adopted in the study was explicitly stated. All the categories of cost relevant to the perspective adopted were included in the analysis. The costs and the quantities were reported separately. An appropriate sensitivity analysis was carried out. Since all the costs were incurred during less than 2 years, discounting was unnecessary and was not carried out. The price year was specified.

Other issues
The authors made appropriate comparisons of their findings with those from other studies. The issue of generalisability to other settings was not directly addressed. The authors did not present their results selectively. The authors’ conclusions covered clinical benefits when the stated objectives were a cost analysis. The evidence for effectiveness was not detailed in the report. The authors reported a number of limitations to their study, in particular, the relatively short follow-up of 6 months. They also acknowledged that they were unable to capture the benefits related to mortality avoided with the lower rate of prostatectomy in the alfuzosin group. Thus, the authors provided a comprehensive discussion of their results and highlighted relevant caveats.

Implications of the study
There were no recommendations for further research.

Source of funding
Funded by a research grant from Sanofi-Aventis.

Bibliographic details

PubMedID
16104911

DOI
10.1111/j.1464-410X.2005.05685.x

Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Adrenergic alpha-Antagonists /economics /therapeutic use; Adult; Aged; Decision Support Techniques; Drug Costs; Emergency Treatment /economics; Follow-Up Studies; Great Britain; Humans; Male; Middle Aged; Monte Carlo Method; Prostatectomy /economics; Prostatic Hyperplasia /complications /surgery; Quinazolines /economics /therapeutic use; Urinary Retention /drug therapy /economics /etiology