Cost-effectiveness of antidepressant treatment reassessed

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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
Antidepressant drugs.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Simulated cohorts with depression.

Setting
The practice setting appears to be that of the community. The economic analysis was carried out in Connecticut, USA.

Dates to which data relate
Effectiveness analysis and resource data appear to relate to 1997. No price year was stated.

Source of effectiveness data
Estimates for the effectiveness of TCAs and SSRIs were derived from a review of the literature, augmented by authors' assumptions.

Link between effectiveness and cost data
The costing was undertaken on the effectiveness study sample and appeared to be prospective.

Modelling
A decision analytic model was used to replicate and develop the results of a previous model around antidepressant effectiveness, revising key assumptions which drove the results.

Outcomes assessed in the review
The outcomes assessed included success rates for initial therapy for imipramine and paroxetine, and success rates for switched therapies (imipramine to paroxetine and vice versa).

Study designs and other criteria for inclusion in the review
Not stated. The authors identified a multi-centred placebo controlled trial, a review (likely to be systematic) and a large-scale meta-analysis of SSRIs versus TCAs.

Sources searched to identify primary studies
Not stated.

Criteria used to ensure the validity of primary studies
Not stated.

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

Number of primary studies included
For initial treatment completion rates the results of 62 SSRI versus TCA trials reported by Anderson and Tomenson (1995) were used. Three other studies were also used. The AHCPR guidelines referred to in this study reviewed 13 studies involving patients being switched from TCAs to non-TCAs.

Methods of combining primary studies
Data pooling was used for initial treatment completion rates. The number of completers was divided by the number entered into the trials. Meta-analysis was also used in at least one trial used by the authors.

Investigation of differences between primary studies
Not stated.

Results of the review
The initial success rate for imipramine was 46% and 58% for paroxetine. Alternative initial success rates were given for 3 scenarios (using assumptions SR2 and LT2 - see estimates below): IS1 = paroxetine (65.6%) and imipramine (38.4%), which is the break-even rate (or equal cost-effectiveness); IS2 = paroxetine (63.9%) and imipramine (55.7%); IS3 = SRI (69.2%) and TCA (66.6%). TABLE C

Methods used to derive estimates of effectiveness
Estimates of effectiveness under three scenarios for success rate of switched therapies and treatment duration were derived from authors' assumptions, by reference to data findings in the literature (see above) and AHCPR guidelines.

Estimates of effectiveness and key assumptions
The success rate of switched therapies was estimated for three scenarios (SR):

SR1, 28% for paroxetine to imipramine switch and 35% for imipramine to paroxetine switch;

SR2, 35% for paroxetine to imipramine switch and 44% for imipramine to paroxetine switch;

SR3, 41% for paroxetine to imipramine switch and 52% for imipramine to paroxetine switch.

Values were calculated on three assumptions for drop-outs: 60% of average, 75% of average and 90% of average. The assumptions thus created were all within the Agency for Health Care Policy and Research (AHCPR) guidelines for TCA to non-TCA switches (30-60%).
For treatment lengths three scenarios (LT) were considered:

LT1: if first treatment succeeds, 20 weeks + 52 weeks maintenance; if treatment fails, 12 weeks re-treatment + switch treatment (same length as first treatment); if first treatment fails the treatment is according to the authors’ previously reported (JB) model assumptions; if switch treatment fails, 12 weeks.

LT2: the same as LT1 except first treatment was for 34 weeks + 78 weeks maintenance.

LT3: the same as LT1 except first treatment was for 48 weeks + 104 weeks maintenance.

These assumptions were more consistent with AHCPR guidelines.

**Measure of benefits used in the economic analysis**
Benefits were expressed in terms of successfully treated patients.

**Direct costs**
Discount rates of 2, 5 and 10% were applied to costs in the sensitivity analysis of the study. Costings included medication (US wholesale prices), treatment delivery and GP visits. The costing perspective was unclear.

**Statistical analysis of costs**
Not performed.

**Currency**
UK pounds sterling (GBP), mainly converted from US dollars at a rate of 1 = $1.60.

**Sensitivity analysis**
One-way sensitivity analysis varied different study assumptions including drug costs, dosages, treatment delivery and failure costs, relapse probability, retreatment success probability and GP maintenance visits. No prices were stated.

**Estimated benefits used in the economic analysis**
Benefits were expressed in terms of reduced costs per successfully treated patient (see synthesis of costs and benefits below).

**Cost results**
Total intervention costs were not reported.

**Synthesis of costs and benefits**
Costs per successfully treated patient under three scenarios were:

IS1, 897 (paroxetine) and 897 (imipramine);

IS2, 836 (paroxetine) and 696 (imipramine);

IS3, 765 (paroxetine) and 577 (imipramine).

These results were based on the authors’ best estimates of success after switched treatment and duration of treatment.
Authors' conclusions
A policy of using TCAs as a first-choice antidepressant, according to the model, with SSRIs reserved for those patients not doing well initially, appears more cost-effective than the reverse sequence.

CRD COMMENTARY - Selection of comparators
The selection of paroxetine and imipramine was justified. You, as a user of this database, should determine if the chosen alternatives are relevant to your own setting.

Validity of estimate of measure of benefit
The measures of benefit within the analysis were reported in terms of costs per successfully treated patient and were derived from a review of the literature. Although the authors used what appear to be good quality sources, they did not report their search strategy. Data pooling was the primary method of synthesising the results but a large-scale meta-analysis was also employed.

Validity of estimate of costs
Adequate details of cost estimations were given although the chosen perspective was not clear and no price year was given.

Other issues
The results of this study reverse previous findings by the authors. Due to the simplifying assumptions made by the authors, they acknowledge that the results should be treated with a degree of caution as relaxing some of the assumptions would involve a much more complicated model. The AHCPR guidelines did not include information regarding patients switched from SSRIs to TCAs, an area in which the authors see a requirement for more research. The issue of relapse rates across treatments is also an area which needs investigation, as the cost-effectiveness results are sensitive to this variable which could not be addressed adequately in the model used by the authors.

Implications of the study
According to the authors large prospective randomised cost-effectiveness studies are needed.

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Other publications of related interest

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