Counseling versus antidepressant therapy for the treatment of mild to moderate depression in primary care: economic analysis

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 counselling versus antidepressant therapy for the treatment of mild to moderate depression. Counselling comprised six 50-minute weekly sessions. Antidepressant therapy comprised dothiepin (150 mg taken at night), fluoxetine (20 mg taken once daily) and lofepramine (140 - 210 mg taken daily).

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population included patients aged 18 to 70 years suffering from major depression, as defined using research diagnostic criteria (RDC). Patients with psychosis, suicidal tendencies, postnatal depression, recent bereavement, or drug or alcohol misuse were excluded.

Setting
The setting was primary care. The economic analysis was conducted in the UK.

Dates to which data relate
The time during which the effectiveness and resource use data were gathered was not reported. The price year was not given.

Source of effectiveness data
The effectiveness data were derived from a single prospective study, whose main details were published elsewhere (Chilvers et al., see Other Publications of Related Interest).

Link between effectiveness and cost data
The costing was undertaken prospectively on the same group of patients as that used in the effectiveness study.

Study sample
Power calculations were performed in the preliminary phase of the study. These suggested that 400 patients in each arm were required. However, due to the slow recruitment, further power calculations were carried out on the basis of expected differences in the Beck score. Consequently, 44 patients per arm were required for a power of 80%, and 60 patients per arm for a power of 90%. One hundred and three patients were randomly assigned to either generic
counselling (n=52) or antidepressant drugs (n=51). Another 220 patients refused randomisation but chose their treatment: 80 in the antidepressant group and 140 in the counselling group. The patients' demographic and disease characteristics were reported for each study group.

**Study design**
The study was a prospective randomised controlled trial that was conducted in a general practice setting. The patients were randomly selected from 410 general practices in the Trent health region. In the randomised arm of the study, treatment was allocated by telephone and the randomisation strategy used blocks of four stratified by practice. The follow-up period was 12 months. The patients were randomised to either counselling or antidepressants. Patients refusing randomisation, but agreeing to participate in the patient preference trial, were given the treatment of their choice. The psychiatrist assessing the main outcome measure was blinded to the treatment allocation. The number of patients who completed the 12-month questionnaire was 34 in the antidepressant group and 31 in the counselling group among those randomised, and 46 (antidepressant group) and 137 (counselling group), respectively, among those not randomised.

**Analysis of effectiveness**
The basis of the primary analysis was treatment completers only. The sensitivity analysis included assumed values for randomised patients without outcome data, caused mostly by the patients' non-attendance at the 12-month general practitioner (GP) follow-up. The main outcome measures at 12 months were:

- the Beck depression inventory score, as completed by the patient;
- the time to remission, defined as an RDC score of less than 4 and a Beck score of less than 10;
- the global outcome, classified as good, moderate, poor or unknown, as assessed by a psychiatrist blinded to the treatment allocation;
- the RDC completed by the GP.

The global outcome was assessed using the RDC, Beck score and GP notes.

Some secondary outcomes were also assessed, but there were not relevant for the current economic evaluation.

The study groups were generally balanced at baseline. However, the patients who preferred counselling were less severely depressed than randomised patients or those who preferred antidepressants.

**Effectiveness results**
There were no statistically significant differences in any of the outcome measures used in the effectiveness analysis. The analysis also demonstrated that more patients opted for counselling.

**Clinical conclusions**
The authors concluded that the two treatments were equally effective for the treatment of patients with major depression.

**Measure of benefits used in the economic analysis**
The summary benefit measure was the psychiatrist's assessment of the global outcome, which was derived from the effectiveness study.

**Direct costs**
The NHS perspective was used. The direct costs were for antidepressants, counselling, GP consultations, psychiatric

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inpatient hospital stays and psychiatric outpatient hospital visits. All GP consultations, drugs prescribed and use of GP-arranged counselling were recorded from the patients' notes. Hospital psychiatric outpatient and inpatient visits were abstracted from case notes. The unit costs were obtained from a published study (Netten et al., see Other Publications of Related Interest), the British National Formulary and invoices from counsellors in the trial. The quantities were derived directly from the effectiveness study. The costs and the quantities were not reported separately. Discounting was unnecessary. The price year was not reported.

**Statistical analysis of costs**
The analysis of cost data included measures of location (mean and median), variability (interquartile range), shape of distribution (skew: coefficient of asymmetry of information) and precision (95% confidence intervals). Inferences were based on a comparison of arithmetic means given by the t-test and the non-parametric Mann-Whitney U-test.

**Indirect Costs**
The indirect costs were not included in the analysis.

**Currency**
UK pounds sterling (€).

**Sensitivity analysis**
A sensitivity analysis was conducted using assumed values for randomised patients without outcome data. The two scenarios considered were all missing patients achieved good global outcome and all missing patients achieved poor global outcome. The authors used the bootstrapping technique to confirm the validity of the results, based on a comparison of the mean costs using the standard t-test, and to account for possible sampling errors and to recognise uncertainty around the cost and effect data. A total of 2,000 iterations of resampled estimates were used in the simulation.

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

**Cost results**
There was no significant difference between the two randomised treatment groups in the cost of all depression-related health care for the 12 months following entry to the trial.

There was a significant cost-difference (counselling plus antidepressants) between the treatment groups when using the non-parametric test, 89.57 in the antidepressant group versus 115.92 in the counselling group, (p=0.031). There were also significantly higher GP depression-related consultation costs in the antidepressant group (70.20) versus the counselling group (56.54), (p=0.025).

For patients choosing their treatment modality, there was a significant difference between counselling and antidepressant groups in terms of the overall cost of depression-related health services. These costs were 335.63 (counselling group) and 263.41 (antidepressant group), respectively, when using the non-parametric test, (p=0.005).

No significant overall cost-differences between the randomised and patient preference groups were observed.

**Synthesis of costs and benefits**
Using conventional analysis, the authors found no significant difference between randomised treatment groups in either the outcomes or costs at 12 months.
When using net benefits and cost-effectiveness acceptability curves, the study provided more information for decision-makers.

If decision-makers were not willing to pay more for additional benefits, then there was little difference between the treatment modalities in terms of their cost-effectiveness, as there was around a 0.45 chance that the antidepressant would be cost-effective when compared with counselling.

If decision-makers did place a value on the additional benefit (K>0, where K was the maximum acceptable incremental cost-effectiveness ratio), then the antidepressant group was more likely to be cost-effective in comparison with the counselling group (probability of 0.75 for K = 500 and probability of 0.90 when K >2,000).

Sensitivity analyses showed that the counselling group was more likely to be less costly than the antidepressant group. When assuming good global outcomes for missing data, the chance that antidepressants were cost-effective for all values of K was lowered. However, the assumption of poor global outcomes lowered slightly the probability that antidepressants were cost-effective for K-values of less than 1,500, but increased the chance for K-values above 1,500.

Authors’ conclusions
The authors concluded that, according to the study results and following the indications of the net benefits and cost-effectiveness acceptability curves, the counselling intervention is a dominant cost-effective strategy in a small proportion of patients with mild to moderate depression. For a larger proportion of patients, the antidepressant intervention is the dominant cost-effective strategy. For the remaining group of patients, the cost-effectiveness depends on the value placed on an additional patient with a positive outcome by a decision-maker.

CRD COMMENTARY - Selection of comparators
A justification was given for the comparator used (i.e. routine prescribed antidepressants). The comparator was chosen because it represented the major treatment modality. You should consider whether this is a widely used technology in your own setting.

Validity of estimate of measure of effectiveness
The estimate of effectiveness ought to be internally valid given the use of a randomised controlled trial. The methods of sample selection and randomisation were reported in the primary trial. No clear justification was given for the end points used. The impact on quality of life would also have been appropriate for assessing the effectiveness of counselling versus antidepressants. Indeed, the authors estimated some quality of life aspects in the primary trial, but there was no statistically significant difference across the groups. The study sample was selected from a high number of GPs, thus it is likely to have been representative of the study population. The authors acknowledged that the sample size was low and levels of skewness in the data may have contributed to the non significant differences between the treatment groups.

Validity of estimate of measure of benefit
The authors did not derive a summary measure of health benefit and the main outcome estimated in the effectiveness analysis was used. This represents a disease-specific measure, which would be difficult to compare with the benefits of other health care interventions.

Validity of estimate of costs
A NHS perspective was used in the economic analysis and only the direct costs were included. The quantities and the unit costs were not reported separately. An appropriate statistical analysis was performed on the costs (and cost-effectiveness). A robust sensitivity analysis of the costs was also performed. The authors based their economic analysis on a stochastic approach. Discounting was unnecessary. The price year was not reported, thus making reflation exercises in other settings difficult. The source of the cost data was reported.
Other issues
The generalisability of the results was not discussed. The authors made appropriate comparisons of their findings with those from other studies. The study enrolled patients with mild or moderate depression and this was reflected in the authors’ conclusions. The results seem to have been presented selectively, but details on the effectiveness analysis were reported in the primary trial. The authors reported further limitations of their study.

Implications of the study
The authors recommended that further research should be implemented to understand the determinants of cost-effectiveness for specific groups of patients. Counselling and/or antidepressants could then be targeted to maximise the overall efficiency of resource use in the treatment of depression.

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Other publications of related interest


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