Cost-effectiveness of relapse prevention cognitive therapy for bipolar disease: 30-month study
Lam D C, McCrone P, Wright K, Kerr N

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 cognitive therapy in addition to standard care (mood stabilisers and psychiatric follow-up) in the prevention of relapses of bipolar disorder.

Type of intervention
Secondary prevention.

Economic study type
Cost-benefit analysis.

Study population
The study population comprised adult patients with DSM-IV bipolar I disorder who had had at least two episodes in the past 2 years, or three episodes in the past 5 years, who were not suicidal and who did not have a substance use disorder.

Setting
The setting was secondary care. The economic study was carried out in London, UK.

Dates to which data relate
The dates of the effectiveness and resource use data were not specified. No price year was reported.

Source of effectiveness data
The effectiveness data were derived from a single study.

Link between effectiveness and cost data
The resource use information was collected from the same patient sample as that which provided the clinical effectiveness data.

Study sample
A total of 103 patients were included in the study. Of these, 51 received cognitive therapy in addition to usual care and 52 received usual care. Further details of the study sample were not provided in this paper. Full details of the clinical trial were reported elsewhere (Lam et al. 2003 and 2005, see 'Other Publications of Related Interest' below for bibliographic details).

Study design
The study was a single-centre, randomised controlled trial. The patients were randomised to treatment group using a computer-generated random sequence stored in opaque sequentially numbered envelopes. The patients were followed up for 30 months but loss to follow-up was not reported. Independent assessors who were blind to the patients’ treatment allocation collected the outcome data.

**Analysis of effectiveness**

The primary health outcomes used were the number of days without a bipolar episode, relapse rates and hospital admission rates for bipolar episodes. The paper did not report whether the analysis was performed on an intention to treat basis. There were no statistically significant differences between the two patient groups in terms of the demographic and clinical characteristics at baseline.

**Effectiveness results**

For the first 365 days, patients receiving cognitive therapy experienced a mean of 26 (standard deviation, SD=46.0) days with a bipolar episode compared with 88.4 (SD=108.9) days for those receiving usual care (95% confidence interval, CI, of difference: 27.31 to 96.99).

Over the 30 months, patients receiving cognitive therapy experienced a mean of 95.3 (SD=152.1) days with a bipolar episode compared with 201.0 (SD=95.3) days for those receiving usual care (95% CI of difference: 32 to 189).

The relapse rate was 64% (30 out of 47) in the cognitive therapy group compared with 84% (43 out of 51) in the usual care group. This difference remained statistically significant after controlling for previous number of bipolar episodes and medication compliance over the 30 months (hazard ratio 0.50, 95% CI: 0.29 to 0.85; p=0.012).

The hospital admission rate was 38% (18 out of 47) for the cognitive therapy group compared with 47% (21 out of 45) in the usual care group. This result was non significant.

**Clinical conclusions**

The authors concluded that the addition of cognitive therapy to usual care reduced bipolar relapses.

**Measure of benefits used in the economic analysis**

The use of assumed threshold values (range: 0 to 50 in 10 increments) for the value of a bipolar-free day enabled estimated net benefits to be ascertained for all participants (formula given). A regression analysis was then used to determine the mean difference between the two treatments. A total of 1,000 regression coefficients were generated using bootstrapping. These were used to generate a cost-effectiveness acceptability curve.

**Direct costs**

The direct costs to the NHS were included in the study. These covered the costs of psychiatric inpatient care, general inpatient care, community services and medication costs. Resource use was based on actual resource use by the patient group that provided the clinical effectiveness evidence. The unit costs of medication were taken from the British National Formulary, while the unit costs of hospital care were taken from the Unit Costs of Health and Social Care published by the Personal Social Services Research Unit. The unit cost of cognitive therapy was estimated to be one hour of psychologist time. A breakdown of resource use and unit costs was included. No clear price year was reported. No discounting of costs incurred after the first year was reported.

**Statistical analysis of costs**

The unit cost data were treated deterministically, while the total cost-differences were treated stochastically. A regression model was used to deal with expected non-normality of the cost data. Then, non-parametric bootstrapping (1,000 resamples) was undertaken to deal with skewness and 90% CIs were subsequently constructed for cost-differences.
Indirect Costs
No indirect costs were included in the study.

Currency
UK pounds sterling (€).

Sensitivity analysis
Two one-way sensitivity analyses were carried out. Cost-benefit acceptability curves were created to assess the impact of variation in the unit cost data and the threshold value of a bipolar-free day. The base-case costs were increased by 50% and decreased by 50% in these analyses.

Estimated benefits used in the economic analysis
The estimates of net benefits used in the analysis were not reported.

Cost results
Over 30 months, the total mean cost of treatment was 10,352 in the cognitive therapy group and 11,724 in the usual treatment group.

Over 12 months, the total mean cost of treatment was 4,383 in the cognitive therapy group and 5,356 in the usual treatment group.

Synthesis of costs and benefits
Sensitivity analyses showed that, in the worst-case scenario, there was a 75.2% chance that cognitive therapy in addition to usual care was cost-saving in comparison with usual care when a zero value was placed on a bipolar-free day.

Authors’ conclusions
The addition of cognitive therapy to usual treatment reduced the number of bipolar days and was cost-saving.

CRD COMMENTARY - Selection of comparators
This study compared the addition of cognitive therapy to usual care (i.e. mood stabilisers and psychiatric follow-up) for the treatment of bipolar disorder. This comparator was chosen as it represented usual care in the authors' setting. However, you should consider how this relates to usual practice in your own setting prior to applying the study results.

Validity of estimate of measure of effectiveness
The clinical effectiveness evidence was taken from a randomised controlled trial, which was an appropriate study design. The two patient groups were similar in terms of their baseline characteristics, which mean that differential outcomes cannot be attributed to differences in the patient groups. However, the paper did not report all of the clinical trial details. This makes it difficult to ascertain the internal validity of the trial. The reader should refer to the main clinical paper if they wish to further assess the validity (Lam et al. 2003 and 2005).

Validity of estimate of measure of benefit
The measure of health benefit was the net benefit, which was presented as the monetary value of a bipolar episode-free day. The authors estimated the value of a bipolar-free day using assumed threshold values. The results were presented in the form of a cost-effectiveness acceptability curve. Whilst the net benefit approach is valid, the methodology relies on the effectiveness results obtained and the estimated threshold values.
Validity of estimate of costs
The economic perspective of this study was that of the UK NHS. As such, all the appropriate costs relevant to this
perspective appear to have been included. Resource use was collected prospectively during the clinical trial. Details of
the mean and SD were presented for each cost category (inpatient, community services and medication), which will aid
generalisability. Statistical tests were conducted on total cost-differences, which had been obtained using what seems to
have been appropriate methodology (regression analysis to deal with expected non-normality and bootstrapping to deal
with skewness). The unit cost data from several years were used and no reflation to a specific year was reported. Future
reflation exercises will not be possible as no clear price year was reported. No discounting appears to have been
conducted, despite the costs being incurred during more than 12 months.

Other issues
The authors do not appear to have presented their results selectively and their conclusions reflected the scope of their
analysis. They did not compare their findings with those from other similar studies, as there was a lack of comparable
studies. The study was designed to reflect the position of the NHS and no attempt was made to apply the results of this
study to other countries. The authors acknowledged that their study was limited by the fact that resource use data were
based on patient reports, but noted that the time span for data recall was short enough for any inaccuracies to be
minimal.

Implications of the study
The authors recommended that further research be undertaken into whether bipolar-free days is a meaningful outcome
measure from the perspective of patients, their families and clinicians.

Source of funding
Funded from the South London and Maudsley Hospital's research and development fund.

Bibliographic details

PubMedID
15928361

DOI
10.1192/bjp.186.6.500

Other publications of related interest

Lam, D. Watkins, E, Hayward P, et al. Outcome of a two-year follow up of a cognitive therapy of relapse prevention in

Indexing Status
Subject indexing assigned by NLM

MeSH
Adolescent; Adult; Aged; Antidepressive Agents /therapeutic use; Bipolar Disorder /economics /prevention & control
/therapy; Cognitive Therapy /economics; Combined Modality Therapy; Cost-Benefit Analysis; Female; Health Care
Costs; Humans; Male; Middle Aged; Outcome Assessment (Health Care); Secondary Prevention