Cost-effectiveness of combination therapy versus antidepressant therapy for management of depression in Japan

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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.

CRD summary
This study examined the cost-effectiveness of combination therapy (cognitive-behavioural therapy plus antidepressant therapy) versus antidepressant therapy alone. The authors concluded that combination therapy was a cost-effective alternative to antidepressant therapy, from the perspective of the health care system, and was dominant (more effective and cheaper), from the societal viewpoint. The study appears to have been well carried out and satisfactorily presented, thus enhancing the validity of the authors’ conclusions.

Type of economic evaluation
Cost-effectiveness analysis, cost-utility analysis

Study objective
This study examined the cost-effectiveness of combination therapy (cognitive-behavioural therapy plus antidepressant therapy) versus antidepressant therapy alone.

Interventions
The two strategies were antidepressant therapy alone versus combination therapy (cognitive-behavioural therapy plus antidepressant therapy). Antidepressant therapy alone consisted of weekly consultations with a psychiatrist and 40mg of paroxetine per day for three months. In the combination therapy option, 13 sessions of cognitive-behavioural therapy over three months were also provided. Other medications were given for maintenance for other six months, depending on patients’ response.

Location/setting
Japan/secondary care.

Methods
Analytical approach:
The analysis was based on a decision analytic model with a one-year horizon. The authors stated that the perspectives of the health care system and of society were adopted.

Effectiveness data:
The clinical data were derived from published evidence, including meta-analyses, randomised controlled trials (RCTs), and reports of expert panels. The approach used to identify these data sources was not fully reported. Efficacy data for combination therapy were all taken from RCTs or meta-analyses of RCTs, while a panel of eight Japanese psychiatrists was established to provide supplementary data on drug discontinuation. Treatment response was the key clinical input of the model.

Monetary benefit and utility valuations:
Utility valuations were derived from a published study in which patient-assigned health state utilities were reported by depression severity and antidepressant medication.

Measure of benefit:
The two benefit measures used were the rate of successfully treated patients and quality-adjusted life-years (QALYs).
Cost data:
The economic analysis from the health care perspective included the following cost categories: medications, consultant visits, psychotherapy sessions, and in-patient treatment. Unit costs were derived from published Japanese government sources. The societal perspective added the costs associated with productivity losses due to absence from work. These costs were estimated using national data. Resource use data were derived from published sources and the panel of Japanese experts. Costs were in Japanese yen (JPY).

Analysis of uncertainty:
The issue of uncertainty was explored using a one-way sensitivity analysis, for seven scenarios, by varying each single parameter within the 95% confidence intervals. Also, a probabilistic sensitivity analysis explored the impact of varying multiple parameters.

Results
The expected proportion of successfully treated patients was 0.29 with combination therapy and 0.14 with antidepressant therapy. The expected QALYs for severe depression were 0.59 for combination therapy and 0.51 for antidepressant therapy. The expected QALYs for moderate depression were 0.749 for combination therapy and 0.71 for antidepressant therapy.

The total per patient health care costs were JPY 449,655 for combination therapy and JPY 422,244 for antidepressant therapy. This resulted in an incremental cost per successfully treated patient of JPY 182,740, an incremental cost per QALY gained for severe depression of JPY 342,638, and an incremental cost per QALY gained for moderate depression of JPY 913,700. This was fairly attractive, given the maximum threshold for cost-effectiveness in Japan of JPY 6.75 million per QALY.

The total costs per patient societal costs were JPY 3,106,484 for combination therapy and JPY 3,800,342 for antidepressant therapy. The combination therapy was simultaneously less expensive and more effective than antidepressant therapy.

The deterministic analysis showed that the most influential model input was the non-response rate following completion of the initial treatment. However, combination therapy remained cost-effective in the vast majority of cases. The probabilistic analysis indicated that, at the cost-effectiveness maximum threshold of JPY 6.75 million per QALY, the probability of combination therapy being cost-effective was 94.2% for severe depression and 76.0% for moderate depression.

Authors' conclusions
The authors concluded that combination therapy (cognitive-behavioural therapy plus antidepressant therapy) was a cost-effective alternative to antidepressant therapy from the perspective of the health care system, and was a dominant option, which means it was more effective and cheaper, from the societal viewpoint.

CRD commentary
Interventions:
The selection of the comparators was appropriate, as medical monotherapy was compared with a combination strategy. Dosages during the treatment and maintenance phases were reported.

Effectiveness/benefits:
The authors did not describe a systematic review or indicate if they had done a systematic review. However, most data were taken from RCTs or from meta-analyses of RCTs, indicating that the quality of of evidence was likely to be good. Issues related to the use of data from multiple sources in the decision model were not investigated, and little information was provided on the study used to derive utility valuations. The two benefit measures were appropriate as the first (the rate of successfully treated patients) was disease-specific and might be relevant for clinicians, while the second (QALYs) considered the impact of the disease on both quality of life and survival, and could also be compared with the benefits of other health care interventions.
The categories of costs included in the analysis were appropriate given the two perspectives adopted in the study. The authors justified the exclusion of costs associated with drug-related adverse events, as they were similar across both treatment arms and did not influence the cost difference between the two treatments. Limited information on unit costs and quantities of resources used was provided. Instead, some costs were presented as macro-categories. Reflation exercises in other time periods may be difficult, as the price year was not reported. Costs are likely to reflect the country-specific setting and might not be transferable to other health care systems. Costs were varied both in the deterministic and in the probabilistic sensitivity analyses.

Analysis and results:
The analytic approach used to synthesise the costs and benefits was appropriate. The study results were clearly reported. Different areas of uncertainty were considered using valid approaches, the results of which were clearly presented and discussed. A justification for the selection of a relatively short time horizon was given and appeared to have been valid (the lack of valid long-term studies in the literature). The authors stated that this was the first Japanese study comparing combination therapy with antidepressant therapy alone.

Concluding remarks:
The study appears to have been well carried out and satisfactorily presented, enhancing the validity of the authors’ conclusions.

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