A Danish cost-effectiveness model of escitalopram in comparison with citalopram and venlafaxine as first-line treatments for major depressive disorder in primary care

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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 assessed the cost-effectiveness of escitalopram in comparison with generic citalopram and venlafaxine in the primary care treatment of major depressive disorder in Denmark. The authors concluded that escitalopram appeared to be cost-effective compared with generic citalopram, and similar in cost-effectiveness compared with venlafaxine. There were a few limitations to the methodology, so the authors’ conclusions should be considered with a degree of caution.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study assessed the cost-effectiveness of escitalopram in comparison with generic citalopram and venlafaxine in the primary care treatment of major depressive disorder in Denmark.

Interventions
Venlafaxine extended-release at a dose of 75 to 150mg per day and citalopram at 20 to 40mg per day, were each compared with escitalopram at 10 to 20mg per day.

Location/setting
Denmark/primary care.

Methods
Analytical approach:
A decision analytic model (decision tree) with a six month time horizon was constructed in order to compare the cost-effectiveness of the treatments. The authors stated that the perspectives were those of the health care system and of society.

Effectiveness data:
The evidence came from a wide range of sources including published literature, informed clinicians, and the authors’ assumptions. The main clinical parameters were remission, remission after titration, relapse rate, and adverse events.

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
The measure of benefit was the number of patients successfully treated and successful treatment was defined as the remission of symptoms at eight weeks and no relapse within six months after diagnosis.

Cost data:
The cost categories were the costs of medication, consultations with general practitioners and private psychiatrists, attempted and successful suicides, hospitalisation, and productivity losses due to absence from work. These losses were valued according to the human capital approach. The resource use and cost data were derived from official national and local sources. All costs were reported in Danish kroner (DKK) for the price year 2004.

Analysis of uncertainty:
One-way and multivariate sensitivity analyses were conducted on several clinical and cost parameters to assess whether the estimates used were robust. The parameter uncertainty for the drug-specific probabilities was further investigated by means of probabilistic sensitivity analysis using Monte-Carlo simulations and the ranges used were reported.

**Results**

Escitalopram was the dominant strategy when compared with citalopram (less costly and more effective).

The expected overall six-month remission rate for escitalopram was 64.1% at a total expected cost per successfully treated patient of DKK 22,323 from a health care perspective, and DKK 72,399 from a societal perspective. For citalopram the expected overall six-month remission rate was 58.9% at a cost of DKK 25,778 from a health care perspective, and DKK 87,786 from a societal perspective.

For escitalopram compared with venlafaxine, both their remission rates and costs were similar.

The sensitivity analysis demonstrated that these results were robust.

**Authors' conclusions**

The authors concluded that, in a Danish primary care setting, escitalopram appeared to be cost-effective when compared with generic citalopram, and similar in cost-effectiveness when compared with venlafaxine.

**CRD commentary**

Interventions:
The interventions were clearly reported including the dosage. However, no explicit justification was provided for the comparators used. It is therefore unclear whether all the relevant comparators were included in the analysis.

Effectiveness/benefits:
The effectiveness data were derived from published studies, but no systematic search of the literature was reported. Although the sources of the data were provided neither the methods used to identify these primary studies nor the inclusion criteria were reported. Therefore, it is difficult to ascertain whether the best available evidence was used.

Costs:
The costs appeared to reflect the perspectives stated, and the cost data appeared to be appropriate for the study population and setting. However, the analysis of the costs was not thoroughly reported. Only the summary costs were provided, without the resource use and unit costs, which limits the generalisability of the analysis. The price year was reported, which will facilitate future reflation exercises.

Analysis and results:
The authors conducted two parallel cost-effectiveness analyses because no head-to-head comparison data were available in the literature. However, this could have been tackled by running a Mixed Treatment Comparison analysis. By doing this, it would be possible to compare the effectiveness of the three drugs involved and consequently to conduct a single cost-effectiveness analysis including all the drugs, which would have been more appropriate. Nevertheless, the methods were generally well reported and the results for the non-dominated strategies were fully and clearly presented. Sensitivity analyses were conducted on the model parameters, which enhances the generalisability of the findings and makes the results more robust. The authors outlined some limitations to their study.

Concluding remarks:
There were a few limitations to the methodology, so the authors’ conclusions should be considered with a degree of caution.

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