The treatment of major depressive disorders (MDD) in Thailand using escitalopram compared to fluoxetine and venlafaxine: a pharmacoeconomic evaluation

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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
The objective was to assess the cost-effectiveness of escitalopram versus fluoxetine and venlafaxine for the treatment of major depressive disorder. The authors concluded that escitalopram was more effective and less costly than the other two treatments. Overall, the study was based on adequate methodology. The authors’ conclusions appear to be appropriate for the scope of the analysis.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The objective was to examine the cost-effectiveness of three drug treatments for major depressive disorder.

Interventions
The interventions were: escitalopram, a selective serotonin re-uptake inhibitor (SSRI), at a dose of 10mg per day; fluoxetine, another SSRI, at a dose of 20mg per day; and venlafaxine, a selective serotonin and norepinephrine re-uptake inhibitor, at a dose of 75mg per day.

Location/setting
Thailand/primary care.

Methods
Analytical approach:
Two decision trees were used to model the treatment pathway and its associated costs. The time horizon was six months. One model compared escitalopram with fluoxetine, and the other compared escitalopram with venlafaxine. The authors stated that the health service provider and the societal perspectives were adopted.

Effectiveness data:
The effectiveness data were mainly obtained from published meta-analyses and no head-to-head comparison studies were available. The details of the literature review and the studies selected were not reported. The treatment relapse rates were estimated by the authors using a meta-analytic approach on data taken from published studies, the details of which were not reported. Some assumptions were made in order to overcome the lack of data for some inputs to the model and these were explicitly reported. The treatment effect of escitalopram compared with fluoxetine was assumed to be the same as the treatment effect of escitalopram compared with citalopram as there were no trials comparing escitalopram with fluoxetine. The primary outcome measure was the overall success of treatment, which was defined as remission after six months of treatment or a Montgomery and Asberg Depression Rating Scale score of 12 or less.

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
The authors did not derive a summary measure of benefit.

Cost data:
The economic analysis included the costs of medications, psychiatrist consultation, and hospitalisation. Productivity losses from work absenteeism due to major depressive disorder, lack of treatment efficacy, and adverse events were also analysed. The resource use data were derived from a survey and its details were not reported. Productivity losses were estimated using the human capital approach. The costs and resource use were reported separately. The costs were obtained from official national sources and they were reported in Thailand baht (THB) for the price year 2007.

Analysis of uncertainty:
The parameter uncertainty was investigated using one-way sensitivity analysis on the clinical and resource use parameters. Probabilistic sensitivity analysis using Monte Carlo simulations was also carried out. The prior assigned distributions were reported and a cost-effectiveness acceptability plane was generated.

Results
The overall treatment success rate was 69.32% for escitalopram and 64.56% for fluoxetine, in one model, and 73.76% for escitalopram and 70.64% for venlafaxine, in the second model. From the societal perspective, the total costs were THB 17,460 for escitalopram and THB 19,462 for fluoxetine in the first model and THB 15,994 for escitalopram and THB 17,762 in the second model. Escitalopram was, in both cases, dominant or the most effective and least costly treatment.

In the first model comparing escitalopram with fluoxetine, the results were only slightly sensitive to variation in the remission rate, remission rate after titration, and duration of hospitalisation. In the second model, comparing escitalopram with venlafaxine, the results were slightly sensitive to variation in the odds ratio for remission on escitalopram versus venlafaxine, the odds ratio for relapse on escitalopram and citalopram versus the everyday practice, and the number of psychiatrist visits.

The probabilistic sensitivity analysis demonstrated that escitalopram dominated fluoxetine in 99% of cases and it dominated venlafaxine in 88.2% of cases.

Authors' conclusions
The authors concluded that escitalopram was more effective and less costly than fluoxetine and venlafaxine.

CRD commentary
Interventions:
The interventions were clearly reported. The study appears to have been thorough in its coverage of the most commonly used interventions in the authors’ setting.

Effectiveness/benefits:
No systematic literature review was reported. Strong assumptions were made about the treatment effects. For example, the fluoxetine treatment effect was assumed to be the same as that for citalopram, but no statistics were presented to support this. The effectiveness data were mainly derived from published meta-analyses, which usually have a high level of internal validity. The uncertainty around the estimates used was also investigated thoroughly in the sensitivity analyses.

Costs:
The cost categories reflected the perspective stated. The methods used to collect the resource use data were not reported, but extensive sensitivity analyses were conducted to assess whether these estimates were robust. The unit costs and resource quantities were reported separately, enhancing the transparency of the cost analysis. The price year was reported, which will facilitate future reflation exercises.

Analysis and results:
The issue of uncertainty was extensively investigated by means of a deterministic and a probabilistic approach. The results of the base-case analysis and the sensitivity analysis were reported in sufficient detail. The limitations of this study were reported by the authors.

Concluding remarks:
Overall, the study was based on adequate methodology. Despite certain limitations, the authors’ conclusions appear to be appropriate for the scope of their analysis.

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