Escitalopram and duloxetine in major depressive disorder: a pharmacoeconomic comparison using UK cost data

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 examine the cost-effectiveness of escitalopram and duloxetine in the treatment of major depressive disorder (MDD) in the UK. The authors concluded that, from a UK societal perspective, escitalopram led to a reduction in costs and improved clinical outcomes in comparison with duloxetine in patients with MDD. On the whole, the analysis was well conducted and presented. The authors’ conclusions appear to be valid.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The aim was to examine the cost-effectiveness of escitalopram and duloxetine in the treatment of major depressive disorder (MDD) in the UK. The population included patients aged 18 to 65 years with moderate to severe MDD.

Interventions
A selective serotonin reuptake inhibitor (SSRI), escitalopram 20mg per day, was compared with a serotonin-noradrenaline reuptake inhibitor (SNRI), duloxetine 60mg per day. Treatment was given for 24 weeks.

Location/setting
UK/secondary care.

Methods
Analytical approach:
This economic evaluation was based on a single study. The time horizon was 24 weeks. The authors stated that a societal perspective was adopted.

Effectiveness data:
The clinical data on treatment effect were derived from a 24-week, double-blind, multinational (nine European countries), fixed-dose, randomised controlled trial (RCT). The sample included 295 patients: 144 allocated in the escitalopram group and 151 in the duloxetine group. However, only 143 escitalopram and 146 duloxetine patients were included in the intention-to-treat analysis. The length of follow-up was 24 weeks. The key clinical outcome was the change in the Sheenan Disability Scale (SDS) score.

Monetary benefit and utility valuations:
None.

Measure of benefit:
The primary benefit measure was the change in the SDS score. Secondary benefit measures were treatment response, defined as a decrease in Montgomery-Asberg Depression Rating Scale (MADRS) score of 50% or more, and remission, defined as a MADRS score of 12 or less.

Cost data:
The economic analysis included the costs associated with physician visits, visits to other health care professionals, hospitalisations (in different wards), drugs, and sick leave. The unit costs were reported, but quantities of resources...
were not given. The resource use data were derived from the RCT using the full analysis set of patients who had at least one valid health economic assessment after the baseline measurement (113 escitalopram and 110 duloxetine patients). In particular, sick leave due to depression was assessed alongside the clinical trial using a questionnaire implemented at baseline, and at weeks 4, 12 and 24. The health care costs were derived from official UK sources such as National Reference costs or the Personal Social Services Research Unit. The costs of sick leave were estimated using National Statistics on average wage rates. All costs were in UK pounds sterling (£) and the price year was 2006. Instances of missing data and between-group comparisons were dealt with by means of statistical tests. A multivariate analysis was also carried out in order to investigate the impact of treatment choice on total costs as well as on sick leave.

Analysis of uncertainty:
The issue of uncertainty was addressed in three deterministic sensitivity analyses. In the first, specialist visits were reduced. In the second, the acquisition cost of duloxetine was set to zero (to reflect the most conservative case). In the third, the cost of sick leave was varied from £0 to £100 per day. A bootstrapped approach was used to generate 95% confidence interval (CI)s around the incremental costs and benefits.

Results
Escitalopram was the dominant strategy, i.e. it was more effective and less expensive than duloxetine. The improvement in MADRS total score was 1.7 (95% CI: -0.1, 3.4). The improvement in SDS total score was 2.4 (95% CI: 0.4, 4.1). The response rate improved by 5% (95% CI: -2.8%, 12.7%). The remission rate improved by 3.3% (95% CI: -5.7%, 11.8%).

The total costs were -£876 (95% CI: -£1,587, -£270), a cost saving. Of these costs, -£145 (95% CI: -£387, -£42) were for health care costs saved and -£731 (95% CI: -£1,399, -£153) were for sick leave costs saved. A statistically significant reduction in the duration of sick leave in the escitalopram group was observed in comparison with duloxetine.

The results of the sensitivity analysis confirmed that the base-case findings were robust. The multivariate analysis confirmed the strong and statistically significant impact of treatment on total costs.

Authors' conclusions
The authors concluded that escitalopram led to a reduction in costs and improved clinical outcomes in comparison with duloxetine in patients with MDD from a UK societal perspective. The significant cost-savings were mainly due to a substantial reduction in sick leave duration.

CRD commentary
Interventions:
The authors provided a justification for their selection of comparators, which was that escitalopram was the most selective SSRI available, while duloxetine was the most recently introduced SNRI.

Effectiveness/benefits:
The clinical data were derived from an RCT, the methods and findings of which were reported in a companion paper. An RCT is usually regarded as a robust and valid source of data due to the strengths of its design. Moreover, the current RCT had a multinational design and was based on intention to treat, which further enhances the internal validity of the clinical study. The benefit measures were disease-specific and therefore comparisons with the benefits of other health care interventions will not be possible. The calculation of a benefit measure that directly captured the impact of treatment on quality of life would have been interesting.

Costs:
The analysis of costs used a broad viewpoint and the categories of costs were consistent with the perspective. The sources of costs were reported for all items, and the unit costs were reported. The details on resource consumption were presented in an appendix. Typical UK sources of data were used. The price year was reported, which will permit reflation exercises in other years. Statistical analyses of costs were carried out.

Analysis and results:
A synthesis of costs and benefits was not required given the dominance of escitalopram over duloxetine. The issue of uncertainty appears to have been satisfactorily addressed in the sensitivity analysis. Specifically, the analysis attempted to investigate the impact of baseline factors and to identify potential cost drivers. The results of the base-case, the sensitivity analysis, and the multivariate analyses were clearly presented and discussed. The authors noted some limitations of their analysis such as the issue of missing data and the limited external validity of the study findings due to the strict inclusion criteria used in the RCT. It was also noted that resource consumption patterns were derived from nine European countries and might not be applicable to a specific health care setting such as the UK. Nevertheless, the multivariate analysis took account of inter-country differences.

Concluding remarks:
On the whole, the analysis was well conducted and presented. The authors’ conclusions appear to be valid.

**Funding**
Funding received from H. Lundbeck A/S.

**Bibliographic details**

**PubMedID**
18850765

**Other publications of related interest**


**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Absenteism; Adolescent; Adult; Antidepressive Agents /economics /therapeutic use; Antidepressive Agents, Second-Generation /economics /therapeutic use; Citalopram /economics /therapeutic use; Cost-Benefit Analysis; Depressive Disorder, Major /drug therapy /economics; Double-Blind Method; Duloxetine Hydrochloride; Female; Great Britain /epidemiology; Humans; Male; Middle Aged; Multivariate Analysis; Severity of Illness Index; Sick Leave /economics; Surveys and Questionnaires; Thiophenes /economics /therapeutic use; Young Adult

**AccessionNumber**
22008102086

**Date bibliographic record published**
02/03/2009

**Date abstract record published**
29/04/2009