Antidepressant pharmacotherapy: economic evaluation of fluoxetine, paroxetine and sertraline in a health maintenance organization

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
Selective Serotonin Reuptake Inhibitors (SSRIs) in antidepressant pharmacotherapy; (a) paroxetine, (b)sertraline, and (c) fluoxetine in the treatment of depression.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Patients with depression (BNO-9-CM 296.2 major depression -single episode) enrolled in a health maintenance organisation. Patients were aged between 18 and 65yrs. They had to have been dispensed an SSRI within 30 days of the office visit, their files had to contain information for at least 6 months before, and 12 months after, the date on which the initial prescription for an SSRI was dispensed, they had not to have taken antidepressant pharmacotherapy in the 6 months before starting an SSRI regimen, and were not to have been administered medication for psychiatric comorbid conditions, neurological deficits, or a substance abuse disorder in either of the periods mentioned above. Nor had the study patients to have used an intermediate care facility, or a skilled nursing facility in either of those periods.

Setting
Primary and secondary care. The study was carried out in the USA.

Dates to which data relate
Resource use data relate to the period between 1989 and 1994. The price date was 1995.

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

Link between effectiveness and cost data
Costing was undertaken on the same patient sample as that used for the effectiveness study.

Study sample
A total of 744 depressed patients enrolled in the health maintenance organisation were included in the study. No power calculations were carried out. The majority of the patients were female and the overall mean age was 39 years. There were 348 patients (mean age 40.2 years) in the fluoxetine group, 128 patients (mean age 34.4 years) in the paroxetine
group and 268 patients (mean age 40.3 years) in the sertraline group.

**Study design**
Retrospective cohort study. The observation period was 0-6 months before SSRI treatment initiation and 0-12 months after.

**Analysis of effectiveness**
The analysis of the clinical results was based on the treatment completers' data. Health care utilisation was used as a proxy for health status or health outcomes. Univariate comparisons showed the patient groups to be comparable in terms of health care service use during the period before the SSRI treatment initiation.

**Effectiveness results**
9.2% of the patients in the fluoxetine group needed titration between the first and the third prescription of the drug, compared to 18.8% of the patients in the paroxetine group and 22.4% of the sertraline group. 16.1% of the patients in the fluoxetine group needed titration during the first and final prescription for the antidepressant, as did 28.1% of the patients in the paroxetine group and 40.3% in the sertraline group.

**Clinical conclusions**
Patients prescribed paroxetine or sertraline were found to need dosage titration to a far greater extent than did patients prescribed fluoxetine.

**Modelling**
An econometric model using the ordinary least-squares method and log-transformed data was used to analyse the differences in costs between the strategies investigated. The model adjusted for differences in clinical, demographic (age, gender) and financial variables between patient groups. The cost difference between groups was analysed by using a dichotomous variable in the model which stood for pairwise comparisons of strategies (e.g. sertraline versus fluoxetine). In addition, the model controlled for type of initial prescriber (primary care or psychiatrist).

**Measure of benefits used in the economic analysis**
The frequency of dosage titration was used as a proxy for health outcomes.

**Direct costs**
Some costs and quantities were analysed separately. Direct depression related health care costs were measured, such as physician office visits, psychiatrist office visits, laboratory tests, hospital days, psychiatric hospital days, and antidepressants costs. 1995 price data were used. The costs associated with each strategy were estimated using a model. These data were derived from the computer archive of the HMO, and seem to reflect charges rather than true costs.

**Currency**
US dollars ($).

**Sensitivity analysis**
No sensitivity analysis was performed.

**Estimated benefits used in the economic analysis**
16.1% of the patients in the fluoxetine group needed titration during the first and final prescription for the
antidepressant, against 28.1% of the patients in the paroxetine group and 40.3% in the sertraline group.

Cost results
The incremental total cost per patient of paroxetine versus fluoxetine was $284.68 (p<=0.05). The corresponding figure for sertraline versus fluoxetine was $315.96 (p<=0.05). The figure for the comparison of sertraline versus paroxetine was not reported except as p>0.05.

Synthesis of costs and benefits
The costs and benefits were not combined since the fluoxetine strategy was dominant.

Authors' conclusions
The data revealed a significant increase in aggregate per capita health service expenditures related to the treatment of the depression, including increases in expenditures for antidepressant pharmacotherapy, for patients prescribed either paroxetine or sertraline compared with patients prescribed fluoxetine.

CRD COMMENTARY - Selection of comparators
A justification was given for the comparators used.

Validity of estimate of measure of benefit
Although the authors described the study as an economic evaluation, they did not state what the outcome measure for the effectiveness was nor, consequently, did they state the corresponding estimate of effectiveness/benefit obtained in the evaluation. The database reviewer has chosen as an estimate of benefit the reported frequency of titration associated with each strategy since the study documented an observed (positive) correlation between increases in aggregate and antidepressant pharmacotherapy per capita expenditures and the need for dosage titration with SSRIs. This choice of measure of effectiveness is, however, questionable. Although, the retrospective nature of the study design is a potential source of bias, the authors aimed at controlling for differences in mental health status by using, as a proxy, the depression treatment-related expenditure profile in each group for the period before starting an SSRI regimen.

Validity of estimate of costs
Indirect costs were not considered in the analysis and charges rather than true costs were used.

Other issues
As the authors stated, the study used a younger population with fewer comorbid diseases than would be found in the general population of depressed patients. Thus, a study using that population would yield results which would be unlikely to be generalisable to the corresponding general population.

Implications of the study
Further prospective studies designed to measure quality of life are desirable to perform an economic evaluation of antidepressant pharmacotherapies. The economic evaluation should also allow for all the relevant costs (rather than charges) associated with the relevant strategies.

Source of funding
None stated.

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Other publications of related interest

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