Cost-effectiveness of sertindole among atypical antipsychotics in the treatment of schizophrenia in South Korea

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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 aim was to explore the cost-effectiveness of sertindole, compared with risperidone, olanzapine, and quetiapine, for the treatment of patients with schizophrenia, in South Korea. The authors concluded that sertindole could be considered for patients who had failed to respond to other atypical antipsychotic medications. The quality of the study was satisfactory, but the results were not well reported, making it difficult to assess the authors’ conclusions.

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

Study objective
The aim was to explore the cost-effectiveness of sertindole, compared with risperidone, olanzapine, and quetiapine, for the treatment of patients with schizophrenia.

Interventions
Sertindole at a mean dose of 16mg per day, on an in-patient or out-patient basis, was compared with, risperidone 4.1mg per day for out-patients or 5.25mg per day for in-patients, olanzapine 10.85mg per day for out-patients or 14.93mg per day for in-patients, and quetiapine 300mg per day for out-patients or 400mg per day for in-patients.

Location/setting
South Korea/primary and secondary care.

Methods
Analytical approach:
The analysis was based on a state-transition model, with six-month cycles. The time horizon was five years. The authors stated that a health care system perspective was adopted.

Effectiveness data:
The primary effectiveness data were from an indirect comparison, using the results of a meta-analysis of seven published randomised controlled head-to-head trials, with risperidone as the common comparator. These were identified by a systematic search of PubMed, EMBASE, The Cochrane Library, KMBase, and RISS for trials published between 1990 and 2011. The key effectiveness estimates were the risks of drug-induced adverse events, which were from the meta-analysis. Other clinical parameters included the compliance rate and the relapse rate, and these estimates were from published studies.

Monetary benefit and utility valuations:
The utility values were based on published utility weights, for the Korean population, for each state experienced in the treatment pathway. The estimates were obtained using the Korean version of the EQ-5D.

Measure of benefit:
The measure of benefit was quality-adjusted life-years (QALYs). Future benefits were discounted at an annual rate of 5%.

Cost data:
The direct health care costs included those of physician visits, medications, hospitalisations, laboratory tests, mental health care, and managing adverse events. The non-health care costs included time and travel for patients with schizophrenia. The direct health care costs were based on data from the 2010 Health Insurance Review and Assessment Service (HIRA) claims database, which provided health care cost and utilisation data. The non-health care costs were based on data from the 2005 Korea National Health and Nutrition Examination Survey (NHANES), and average wage and employment rates in Korea in 2010. The costs from the NHANES were inflated, using an estimated rate, to 2010 values. The costs were reported in Korean won (KRW). Future costs were discounted at a rate of 5%.

Analysis of uncertainty:
One-way sensitivity analyses were carried out to consider the impact of variations, in the key parameters, on the model results. A probabilistic sensitivity analysis was performed to assess the impact of simultaneous uncertainty, in the cost and effectiveness parameters, on the results.

Results
Treatment with sertindole was expected to cost KRW 10.51 million, compared with KRW 8.38 million for risperidone, KRW 12.86 million for olanzapine, and KRW 8.91 million for quetiapine.

The estimated QALYs were 1.27 with sertindole, risperidone, olanzapine, and quetiapine.

The incremental cost per QALY gained with sertindole treatment was KRW 710 million, compared with risperidone, and KRW 1,600 million, compared with quetiapine. Compared with olanzapine, sertindole was dominant as it was more effective and less costly.

Authors' conclusions
The authors concluded that sertindole could be considered for patients with schizophrenia who had failed to respond to other atypical antipsychotic medications, in South Korea.

CRD commentary
Interventions:
The interventions were described, with sufficient detail, including the mean dose, based on the HIRA (Korean National Health Service) guidelines. The medications were selected on the basis of their market share, which suggests that the usual practice was considered, but this may not have included all the appropriate comparators for an analysis of cost-effectiveness. These results may be generalisable to other settings.

Effectiveness/benefits:
The effectiveness data were from trials with good designs, and appropriate methods were used to synthesise the results from multiple pairwise comparisons of the options. The authors described the methods used to identify and select the trials from the published literature and it appears that the best available evidence was used. The authors described the source for the utility weights, the instrument used, and whose preferences were elicited. The methods used to estimate the utilities were appropriate, and it seems that the estimation of the QALYs was appropriate.

Costs:
The costs included in the analysis were consistent with the perspective stated. They were from sources that were very relevant to the study setting (South Korea). The authors reported the sources and the cost inputs, and these estimates were based on national guidelines. A detailed breakdown of the cost items was not provided for some costs, and this might hinder replication of the results for other settings. The authors described the adjustments made to the non-health care costs, which appear to have been appropriate. The price year, discount rate and currency were all reported.

Analysis and results:
An incremental analysis was appropriate for comparing the relative costs and effectiveness of sertindole, compared with the other available medications, in Korea. The authors used appropriate methods to assess the impact of uncertainty around the inputs to their model, but the results could have reported in more detail. The reporting of the main results was adequate, except that some differences, such as in the QALYs, may have been obscured by rounding. The authors acknowledged some of the limitations of their study. A conversion to US $ could have assisted in understanding the magnitude of the incremental cost-effectiveness ratios.
Concluding remarks:
The quality of the study was satisfactory, but the results were not well reported, making it difficult to assess the authors’ conclusions.

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