Costs and effects of paliperidone extended release compared with alternative oral antipsychotic agents in patients with schizophrenia in Greece: a cost effectiveness study

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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 examine the cost-effectiveness of paliperidone extended release in comparison with other prescribed oral treatments for patients with schizophrenia and suffering from acute exacerbations. The authors concluded that paliperidone was more effective and less expensive than other commonly prescribed antipsychotic drugs from the perspective of the Greek National Health System. The study was well conducted and satisfactorily presented. The authors’ conclusions appear to be valid.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The objective was to examine the cost-effectiveness of oral paliperidone extended release in comparison with other prescribed oral treatments for patients with schizophrenia and suffering from acute exacerbations.

Interventions
Oral paliperidone (3mg, 6mg, 9mg, or 12mg per day) extended release was compared against olanzapine 10mg per day, risperidone 6mg per day, quetiapine 750mg per day, ziprasidone 80mg or 160mg per day, and aripiprazole 20mg or 30mg per day.

Location/setting
Greece/secondary care.

Methods
Analytical approach:
This economic evaluation was based on a decision tree model with a one-year time horizon. The authors stated that the perspective of the Greek National Health System was taken.

Effectiveness data:
The clinical inputs for the model were derived from a systematic search of the literature in the PubMed database, which includes MEDLINE. The search and inclusion criteria were described. The search identified randomised controlled trials (RCTs) and the methodological details of these were reported. The criteria used to select the estimates from those found in the literature were reported. There was a lack of head-to-head trials for the comparators and placebo was used as a common comparator. The trial results were adjusted to take into account the different placebo effects. The main clinical estimate was the response rate and this was taken from these trials. Discontinuation and relapse rates and adverse event data came from other studies that were not fully described.

Monetary benefit and utility valuations:
Not included.

Measure of benefit:
The summary benefit measure was the annual number of stable days (days with no symptoms).

Cost data:
The economic analysis included the costs of the drugs, hospitalisations, physician visits, mental health clinic visits, emergency room visits, home care, visits to social or group therapy, and visits to nutritionists. The data on resource consumption were derived from an expert panel of 10 Greek psychiatrists and six health economists, who were selected on the basis of the geographic distribution of the psychiatric units across Greece. The process used to reach a consensus among these experts was described in detail. The unit costs were derived from tariffs reimbursed by the Social Insurance Fund. The drug costs were estimated using their official retail prices and the average daily dose. Paliperidone was not marketed in Greece at the time of this study and so the maximum retail price in Europe was used based on the three available doses (3mg, 6mg, and 9mg). All costs were in Euros (EUR) and the price year was not explicitly reported.

Analysis of uncertainty:
A deterministic one-way sensitivity analysis was undertaken on the most uncertain model inputs, such as those derived from the expert panel, including the frequency and duration of relapses and resource use, due to adverse events, on stable days. An arbitrary range of ±10% was used.

Results
The mean number of stable days was 272.5 with paliperidone, 272.2 with olanzapine, 265.5 with risperidone, 260.7 with quetiapine, 258.6 with ziprasidone, and 260.5 with aripiprazole.

The annual cost per patient was EUR 7,030 with paliperidone, EUR 7,034 with olanzapine, EUR 7,082 with risperidone, EUR 8,321 with quetiapine, EUR 7,807 with ziprasidone, and EUR 7,713 with aripiprazole.

Paliperidone was the dominant strategy as it was both more effective and less costly than all its comparators.

The sensitivity analysis confirmed that the base-case findings were robust and paliperidone remained dominant or very cost-effective compared with the other treatments.

Authors’ conclusions
The authors concluded that extended release paliperidone was more effective and less expensive than other commonly prescribed antipsychotic drugs from the perspective of the Greek National Health System. They stated that future research should focus on data collection in clinical practice and comparisons with other countries.

CRD commentary
Interventions:
The rationale for the selection of the comparators was clear. The authors compared the commonly used antipsychotic drugs in Greece with the new oral atypical antipsychotic paliperidone extended release. A minimum market share of 4% was required for inclusion.

Effectiveness/benefits:
The clinical data were based on a systematic review of the literature, which should have ensured the inclusion of all relevant trials. The authors provided extensive detail on the inclusion criteria, and only RCTs were selected. This should ensure the internal validity of the analysis. Due to the lack of direct comparisons between the treatments, placebo was used as a common comparator, which is a valid method. Some details were provided for the RCTs selected. Only the most severe adverse events for each drug were considered and this was acknowledged as a possible limitation of the analysis. The measure of benefit was disease-specific and cannot be compared with the benefits of studies of other diseases.

Costs:
The economic analysis was well conducted. The categories of costs were consistent with the perspective of the public payer. Extensive information was provided on the unit costs and quantities of resources used. The data sources were clearly presented and the details were reported on the approach used to select the panel of experts. This approach should have ensured that the panel represented the experience within the Greek health care system, but the authors pointed out that it might be biased by personal experience with individual cases. The procedure used to reach a consensus among experts was reported. These features enhance the transparency of the economic analysis. The
provision of the price year would have been helpful for reflation exercises for other time periods. The authors noted that the use of the highest European price for paliperidone biased the economic results against the drug, which made their findings conservative.

Analysis and results:
The authors provided extensive information on the decision model, and explicitly reported the structure, pathways, and assumptions. The approach used to analyse the costs and benefits was appropriate and a synthesis was not required because one treatment dominated the others. A more comprehensive investigation of the uncertainty would have been more appropriate, but the findings appear to have been robust to variations in the assumptions. The authors noted some methodological limitations of their study, such as the use of a one-year time frame, which was due to the lack of reliable long-term evidence. Other potential limitations have already been reported.

Concluding remarks:
The study was well conducted and satisfactorily presented. The authors’ conclusions appear to be valid.

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