Cost-effectiveness and budget impact of long-acting risperidone in Portugal: a modeling exercise


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
This study examined the cost-effectiveness and budget impact of long-acting risperidone (LAR) as first-line treatment of schizophrenia compared with conventional haloperidol depot and oral risperidone. The authors concluded that treatment with LAR might be cost-effective from the perspective of the payer, with limited budget impact in Portugal. The study was well conducted, but the sources of clinical data were not described. The authors’ conclusions appear to be valid, but future studies will be required to confirm these results.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study examined the cost-effectiveness of long-acting risperidone (LAR) as first-line treatment for schizophrenia. A budget impact analysis was also carried out.

Interventions
LAR was compared against two strategies: conventional haloperidol depot and oral risperidone (OR). The average daily dosage was 1.8mg for LAR, 5mg for OR, and 3.3mg for haloperidol depot.

Location/setting
Portugal/secondary care.

Methods
Analytical approach:
This economic evaluation was based on a published discrete event model with a five-year time horizon. The authors stated that the perspective of the payer was adopted.

Effectiveness data:
The clinical data came from both published evidence and the opinions of a panel of five psychiatrists and a health economist. Details on the published sources of data were not given. The key clinical endpoints were the duration of relapse and the severity of symptoms.

Monetary benefit and utility valuations:
Not relevant.

Cost data:
The economic analysis included the costs of medications (including injection administration), out-patient visits (including private visits), day care, hospital stay, and stay in an institution. The resource use was mainly determined on the basis of the opinions of the expert panel. The costs of drugs were derived from the database of the regulatory
agency for pharmaceuticals (INFARMED). Other costs were derived from a previous study. All costs were in Euros (EUR) and the price year was 2003. Future costs were discounted at an annual rate of 5%.

Analysis of uncertainty:
A series of one-way sensitivity analyses was carried out on the hospital costs, compliance rates, symptom scores, probability of side effects, and other rates used in the analysis.

Results
Total cumulative costs per patient were EUR 62,474 with haloperidol depot, EUR 58,871 with LAR, and EUR 63,553 with OR.

All clinical benefits favoured the LAR strategy. For instance, the average number of relapses was 3.20 with haloperidol depot, 2.76 with LAR, and 3.35 with OR.

LAR remained the dominant strategy, which means it was less expensive and more effective than both comparators, in nearly all the alternative scenarios. The three variables that might have affected the dominance of LAR were the costs of hospitalisation and institutionalisation, the probability of presenting a risk to society, and the efficacy of the drugs.

The budget impact of LAR was between EUR 2.3 million and EUR 3.2 million, depending on the assumptions made in the analysis.

Authors’ conclusions
The authors concluded that treatment with LAR might be cost-effective from the perspective of the payer, with a limited budget impact in Portugal. The authors stated that further studies should be carried out to test the generalisability of the model findings to the larger population of Portugal.

CRD commentary
Interventions:
The rationale for the selection of the comparators was clear and reflected the available treatments for schizophrenia.

Effectiveness/benefits:
The clinical data came mainly from published sources, but the method of identification was not described; no systematic search was reported. No information on the study design, patient characteristics, types of intervention, or follow-up was provided. This means that an objective assessment of the validity of the clinical sources is not possible. The use of a panel of experts to provide supplementary data was appropriate for providing estimates reflecting the local treatment patterns, but might have introduced uncertainty in the derivation of the clinical inputs. The outcomes of the model were not explicitly considered as benefit measures as they were not combined with the costs due to the superior profile of LAR over the comparators. These benefits reflected the effect of treatment in natural units and were disease-specific, which means that they will be difficult to compare with the benefits of other health care interventions.

Costs:
The analysis of costs was restricted to the costs borne by the health care system, which was appropriate for the perspective. A breakdown of cost items was presented, and unit costs were reported for all cost categories. The sources of costs were given and the key costs were derived from a previous study, the methods of which were not described. The price year was implicitly stated and will permit reflation exercises in other time periods.

Analysis and results:
A synthesis of the costs and benefits was not required given the dominance of LAR. The expected costs and benefits were reported. The issue of uncertainty was investigated by means of a deterministic sensitivity analysis, the findings of which were presented in detail. The use of a more global approach would have been useful, as the authors acknowledged. The main strength of the analysis was the use of a discrete event model, which simulated the progression of disease based on individual patient characteristics. The model had previously been used to conduct an economic evaluation of LAR in other countries with similar findings.
Concluding remarks:
On the whole, the study was well conducted, but the sources of clinical data were not described. The authors’ conclusions appear to be valid, but future studies will be required to confirm these results.

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