Cost-effectiveness of antipsychotics for outpatients with chronic schizophrenia

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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 study evaluated the cost-effectiveness of alternative outpatient treatments based on antipsychotic drugs for adults with chronic schizophrenia in Slovenia. The authors concluded that, among second-generation antipsychotics, olanzapine and risperidone were the most cost-effective strategies from the perspective of the health care system. Overall, the study methodology was good, with extensive information provided on the methods and results.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The objective of the study was to evaluate, using a decision analysis framework, the cost-effectiveness of alternative outpatient treatments based on antipsychotic drugs for adults with chronic schizophrenia in Slovenia.

Interventions
The following antipsychotic drugs were considered: amisulpride, aripiprazole, haloperidol (oral and depot formulations), olanzapine, quetiapine, risperidone (oral and depot formulations) and ziprazidone.

Location/setting
Slovenia/outpatient.

Methods
Analytical approach:
A published decision analytic model was used to determine the costs and benefits of the alternative drugs on the basis of published sources. The time horizon of the analysis was 1 year. The authors stated that the perspective of the health care system was adopted.

Effectiveness data:
MEDLINE was searched systematically to identify sources of clinical estimates with which to populate the decision model; the search words were reported. Data on compliance with drugs came mainly from a large study, the EFESO study, which enrolled almost 3,000 patients. Re-hospitalisation rates for each drug came from a randomised controlled trial (RCT), the CATIE study, which included most of the drugs compared. Other data came from RCTs, meta-analyses or observational studies. The main clinical end point was the remission rate.

Monetary benefit and utility valuations:
None.

Measure of benefit:
The summary benefit measure used in the analysis was the remission rate.

Cost data:
The categories of costs included in the analysis were medications, ambulatory visits, hospitalisations, anticholinergic drugs for adverse effects and treatment of increased body weight. The costs were derived from the Health Insurance Institute of Slovenia, the Agency for Medicinal Products and Medical Devices of the Republic of Slovenia, and the Ljubljana Psychiatric clinic. Resource use was derived from published evidence. The costs were in euros (EUR) and were based on 2005 values (price year).
Analysis of uncertainty:
A one-way sensitivity analysis was performed to determine the robustness of the model results to variations in inputs such as the duration of hospitalisation, drug dose, cost of the programme, compliance and re-hospitalisation rate. Alternative values for these estimates were mainly derived from the literature.

Results
The remission rate of non-dominated alternatives was 0.418 with haloperidol, 0.454 with haloperidol decanoate and 0.641 with olanzapine.

The expected costs of non-dominated alternatives were EUR 3,726.78 with haloperidol, EUR 3,730.45 with haloperidol decanoate and EUR 5,512.69 with olanzapine.

All other treatments were dominated (i.e. less effective and more expensive than at least one other option).

The incremental cost per patient in remission was EUR 102.03 with haloperidol decanoate (compared with haloperidol) and EUR 3,951.72 with olanzapine (compared with haloperidol decanoate).

The sensitivity analysis showed that the base-case results were not affected by changes in hospitalisation length or changes in the amount of medication. When equal compliance rates for oral and depot formulations were assumed, haloperidol decanoate was dominated by oral haloperidol. When equal effectiveness of olanzapine, amisulpride and aripiprazole was assumed, treatment with aripiprazole and amisulpride was as effective as the treatment with olanzapine, and at the same time was 25% cheaper in the case of aripiprazole and 23% cheaper in the case of amisulpride.

Authors' conclusions
The authors concluded that, among second-generation antipsychotics, olanzapine and risperidone were the most cost-effective strategies for the outpatient treatment of chronic schizophrenia from the perspective of the health care system in Slovenia. The authors pointed out that additional prospective studies should be carried out to reach definitive conclusions.

CRD commentary
Interventions:
The authors stated that all the relevant antipsychotic drugs were evaluated. Therefore, the selection of the treatments under examination appears to have been appropriate since they were the most commonly used antipsychotic drugs in several settings. The exclusion of one antipsychotic drug, clozapine, was justified as it is usually employed for treatment-resistant schizophrenia.

Effectiveness/benefits:
The use of a systematic review of the literature to identify clinical estimates was appropriate because the most relevant studies were considered. The authors provided a description of the sources used to derive these estimates, the selection of which was justified on the basis of their characteristics (design or large sample size) over other available studies. The authors noted that a strength of the analysis was the fact that, in several primary studies, the study drugs were compared in head-to-head clinical trials. The derivation of the benefit measure was based on published sources. The use of remission rate as the summary benefit measure could reduce the potential for drawing comparisons with other benefit measures. The impact of the treatments on the patients’ quality of life was not considered.

Costs:
The categories of costs included in the analysis were relevant to the perspective adopted in the study. Extensive information on the unit costs and quantities of resources used was given, which improves the external validity of the analysis. All other key details, such as the price year, currency and sources of data, were reported. Moreover, the cost categories were broken down. Overall, the economic analysis was transparent.

Analysis and results:
The synthesis of the costs and benefits was appropriate. The authors addressed the issue of uncertainty, albeit
selectively, in the deterministic sensitivity analysis. Results were presented clearly for the base-case analysis, but only partially for the sensitivity analysis. The issue of the generalisability of the study results to other settings was not addressed.

**Concluding remarks:**
The quality of the study methodology was good in terms of the sources of data and the presentation of the results. The authors’ conclusions appear valid, although it is not clear why risperidone was finally considered to be a cost-effective strategy.

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