

## Cost analysis of treating schizophrenia with amisulpride: Naturalistic mirror image study

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### Abstract

The aim of the study was to examine the costs of schizophrenia treatment using the atypical antipsychotic amisulpride relative to treatment with other antipsychotics. Service use data were collected for one year of amisulpride treatment. The patients were also assessed with the Global Assessment of Functioning (GAF) scale and scales of Quality of Life. These were compared with retrospectively collected data for the 1-year period prior to the patients commencing amisulpride. The findings indicate that, compared with the year before, the clinical and quality of life scores improved during the year of treatment with amisulpride. There was a numerical reduction of total costs, as well as costs of in- and out-patient service use per patient per year during the year on amisulpride compared with the year before the patients started amisulpride. Patients on amisulpride spent fewer days as acute in-patients, but stayed longer in rehabilitation wards. Amisulpride treatment may lead to a reduction in the cost of treating schizophrenia in comparison with treatment with other antipsychotic medications.

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### 1. Introduction

The newer, “atypical”, second generation antipsychotic medications have recently been recommended for the first-line treatment of schizophrenia in UK, in preference to the older, “typical” antipsychotics (National Institute of Clinical Excellence, 2002). In particular, the guideline recommends the use of amisulpride, olanzapine, quetiapine, risperidone and zotepine in cases of newly diagnosed “first-episode” schizophrenia, and clozapine as a drug of choice in treatment-resistant schizophrenia. Although the clinical efficacy of the most of atypical antipsychotic medications in the alleviation of the symptoms of schizophrenia is well

established, there are fewer studies that look at the cost-effectiveness of these drugs.

Atypical antipsychotics are more expensive relative to the conventional antipsychotics. Based on the usual daily doses of antipsychotics, Amin (1999) found that relative costs to haloperidol of 28-day hospital treatment with clozapine, quetiapine, olanzapine, risperidone, and amisulpride were 38, 34, 34, 24 and 24 times higher, respectively.

It is, however, important to note that medication costs alone comprise a small proportion of the overall costs inflicted by schizophrenia. Thus, currently, the total treatment costs of schizophrenia in England and Wales are estimated to be more than £1 billion, or 2.8% of all attributable National Health Services (NHS) and (adult) social services expenditure (Knapp, 1997). This is comparable with figures for other developed countries: 2% in The Netherlands (Evers and Ament, 1995), 2% in France (Rouillon et al., 1994), 3% in USA (Rice, 1999). Hospitalisation costs account for the majority of this expenditure

*Abbreviations:* GAF, Global Assessment of Functioning Scale; NHS, National Health Services; QLS, Quality of Life Scale; SLAM, South London and Maudsley.

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(Davies and Drummond, 1994), whilst medication costs account for only 4% of the direct cost of schizophrenia, estimated by Knapp (1997).

It therefore follows that any assessment of the cost of introducing new and more expensive medication can only be carried out by evaluating the impact of new treatments on the costs of the more general aspects of care rather than focusing solely on the costs of the new treatments themselves.

As it has been stated by Meltzer (1999) the additional costs for the atypical antipsychotics could be justified by the argument that they reduce the number of hospitalisation days as well as improve cognitive functioning and the quality of life.

Previous pharmaco-economic studies of atypical antipsychotics have compared clozapine, risperidone, olanzapine, sertindole with each other, or with typical antipsychotics, or with treatment before an atypical antipsychotic has been given. There is a consensus regarding clozapine which has been found to be cost-effective in treatment refractory schizophrenia (Aitchison and Kerwin, 1997; Morris et al., 1998; Revicki, 1999, 2001). It has been shown (Almond and O'Donnell, 2000), that olanzapine and risperidone may be cost-neutral or, at best, slightly cost-saving compared with conventional antipsychotics, since they improve clinical symptoms and quality of life outcomes. These reports corroborate the findings of other authors (Finley et al., 1998; Karki et al., 2001) indicating cost-effectiveness for risperidone and olanzapine, respectively.

It should be noted, though, that pharmacoeconomic studies differ in methodology, some of them being retrospective, some mirror-image (before and after treatment), but very few prospective. There is very little data based on randomised controlled studies. A systematic review (Bagnall et al., 2003) has failed to reach any definite conclusions as to “whether the additional costs [of new antipsychotics] and benefits represent value for money” (p. 146).

Another recent review concluded that at least, the newer antipsychotics are cost-neutral, if not more cost-effective (Hamann et al., 2003). Thus, further studies of the cost-effectiveness of the new generation of antipsychotics are warranted.

Amisulpride was only licensed in the UK in 1998, although it has been widely used in France since 1986, with the indications on the benefits of its use reported by Lecrubier et al. (2001). The only published study on cost-effectiveness of amisulpride was conducted in France (Souetre et al., 1992) with a retrospective design, comparing amisulpride with haloperidol. The authors found that amisulpride treatment incurred significantly lower direct costs due to fewer days of relapse and shorter hospital stays. Since the study was not well controlled, the conclusions should be taken cautiously.

In this study we aimed to investigate the cost-effectiveness of amisulpride, which has been recommended as one of the first-line medications for treatment of schizophrenia. To our knowledge, this is the first study of the cost-effectiveness of amisulpride in the UK.

## 2. Methods

This is a naturalistic case-control 1 year mirror-image design study of the cost-effectiveness of amisulpride.

This study was approved by the South London and Maudsley (SLAM) NHS Trust Research Ethics Committee and all participants gave written informed consent.

### 2.1. Sampling procedure and sample characteristics

All patients with schizophrenia attending SLAM NHS Trust facilities who were receiving amisulpride between June 2001 and December 2002 were identified. Of them, 16 had already completed one-year of treatment with amisulpride, thus they were assessed retrospectively. 28 patients had commenced on amisulpride during the study period, of them, 3 refused to take part in the study and 6 discontinued the amisulpride medication due to lack of compliance and side effects. 19 patients were prospectively followed up to the completion of one year on amisulpride.

In total, therefore, we collected data on 35 patients with schizophrenia who had received amisulpride for at least 1 year by December 2002.

Data related to demographic and clinical variables are presented in Table 1. The sample consisted of patients with chronic schizophrenia, with the average length of illness 11.7 years.

### 2.2. Resource use and calculation of cost

Data on identical items were collected for the year when the patient had been receiving amisulpride treatment and the year before amisulpride treatment.

Periods of hospitalization, out-patient service use (as episodes), income and accommodation data were collected retrospectively using a tailored version of the Client Service Receipt Interview (Beecham and Knapp, 1992) by interviewing either the principal carer (keyworker in the community or family member), or the patients themselves,

Table 1  
Demographic and clinical characteristics of sample

	Whole sample (35 patients)	Monotherapy (12 patients)	Combined therapy (23 patients)
Age (SD)	39 (13.9)	46 (18.0)	35.4 (9.8)
Female/male	11/24	5/7	6/17
Illness duration, years (SD)	11.7 (7.1)	14.3 (9.1)	10.3 (5.7)
GAF year 1 (SD)	38.1 (7.5)	37.1 (7.4)	38.7 (7.7)
GAF year 2 (SD)	41.3 (8.4)	39.7 (7.6)**	42.2 (8.8)**
QLS year 1 (SD)	36.5 (16.8)	34.5 (18.3)	34.9 (13.7)
QLS year 2 (SD)	43.5 (21.4)	41.2 (23.4)***	44.8 (20.7)***

\*\* Global Assessment of Functioning (GAF) score for year 2 significantly greater than for year 1:  $p=0.01$ .

\*\*\* Quality of Life Scale (QLS) score for year 2 significantly greater than for year 1:  $p=0.001$ .

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