

THE COSTS AND CONSEQUENCES OF SWITCHING PATIENTS FROM TYPICAL ANTIPSYCHOTICS TO QUETIAPINE

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INTRODUCTION

The UK's Department of Health is concerned about the impact of atypical antipsychotics upon healthcare budgets [1]. Therefore, there is a need for reliable data to determine whether the cost of these drugs would be offset by beneficial decreases in hospitalisation, indirect costs and intangible costs.

Accordingly, this study estimated the costs of managing patients who require antipsychotic medication in the year before and after starting quetiapine (Seroquel), from the perspective of the UK's National Health Service (NHS).

METHODOLOGY

The study used resource utilisation data obtained from the General Practice Research Database (GPRD), which contains information on eight million patients (three million live patients) from 1,200 GPs at 400 primary care practices across the UK. Ethics approval to use GPRD data for this study was obtained from The Scientific and Ethical Advisory Group, which was set up to govern use of the GPRD.

- All the medical records of patients who had been prescribed quetiapine were obtained from the GPRD. From this cohort, a data set was created comprising the records of only those patients for whom there was at least one year's data before and after starting quetiapine.
- Primary and secondary care psychiatric-related resource use for the two years was

extracted from the medical records of these patients. In addition to resource use, the incidence of suicidal ideation and drug overdose was also extracted from the medical records.

- Patients were then stratified according to whether they had been hospitalised in the year before they started quetiapine. The mean annual psychiatric-related resource use before and after starting quetiapine was estimated for each group.
- Unit costs of healthcare resources at 2000/2001 prices [2,3] were applied to the resource use data to estimate the mean annual cost per patient before and after starting quetiapine. Differences in resource use and costs between different years on treatment were tested for statistical significance using the Wilcoxon Signed-Rank test.

RESULTS

Patient Characteristics In The GPRD Data Set

The GPRD contained information on 51 patients for whom there was at least one year's data before and after starting quetiapine. Of these patients, 25 had a diagnosis of schizophrenia, 6 had schizo-affective disorder, 5 had bipolar disorder and 15 had no clear diagnosis.

- The mean age of the patients in the data set was 47 years. Forty nine percent of the cohort was male and 51% was female. The mean age of the males and females was 41 and 54 years of age respectively.
- Fifty seven percent of patients in the data set were receiving only a typical antipsychotic in the year before starting quetiapine, 12% were receiving only an atypical antipsychotic and 31% were receiving a combination of both. Fifty five percent continued to receive a typical antipsychotic while they were receiving quetiapine.

Resource Use And Costs For All Patients

Healthcare resource use in the year before and after starting quetiapine was similar (Table 1).

Resource	Mean annual resource use per patient:		p
	Before switching to quetiapine	After switching to quetiapine	
Telephone calls to general practice	1.76 (1.09; 2.44)	1.51 (0.73; 2.28)	ns
GP surgery consultations and home visits	17.88 (14.71; 21.06)	18.53 (15.28; 21.78)	ns
Psychiatric outpatient attendances	0.55 (0.19; 0.91)	0.61 (0.2; 1.01)	ns
Psychological clinic visits	0.41 (0; 0.82)	0.29 (0.02; 0.56)	ns
Accident and emergency referrals	0.08 (0; 0.17)	0.06 (0; 0.14)	ns
Psychiatric admissions	0.63 (0.37; 0.89)	0.47 (0.26; 0.68)	ns
Number of prescriptions for:			
Atypical antipsychotics	4.08 (2.22; 5.94)	14.61 (11.64; 17.57)	<0.0001
Typical antipsychotics	8.90 (6.06; 11.75)	4.49 (2.52; 6.46)	<0.0005
Antidepressants	5.06 (3.16; 6.96)	5.45 (3.26; 7.64)	ns
Lithium Carbonate	0.90 (0; 1.91)	0.84 (0.16; 1.52)	ns
Hypnotics	4.73 (2.28; 7.17)	4.08 (1.99; 6.17)	ns
Anti-Parkinsonian drugs	6.82 (3.93; 9.72)	4.47 (2.30; 6.65)	<0.05
Anxiolytics	2.76 (0.61; 4.91)	2.88 (0.97; 4.80)	ns
Total number of all prescriptions	33.25 (24.25; 42.26)	36.82 (28.26; 45.39)	ns
Total number of non-antipsychotic prescriptions	20.27 (13.73; 26.82)	17.73 (12.06; 23.39)	ns
Drug overdose	0.14 (0; 0.31)	0.14 (0; 0.28)	ns
Suicidal ideation	0.10 (0.02; 0.18)	0.00	ns

Table 1: Mean annual resource use per patient (95% confidence limits are in parentheses).

- There was a non-significant reduction in the percentage of patients using secondary care resources in the year after starting quetiapine (Figure 1), particularly psychiatric admissions into hospital (37% versus 29%). Also, there was a significant reduction in the percentage of patients using anti-Parkinsonian drugs in the year after starting quetiapine (63% versus 45%; $p < 0.05$), and this was consistent with a significant reduction in the number of prescriptions for these drugs in that year.

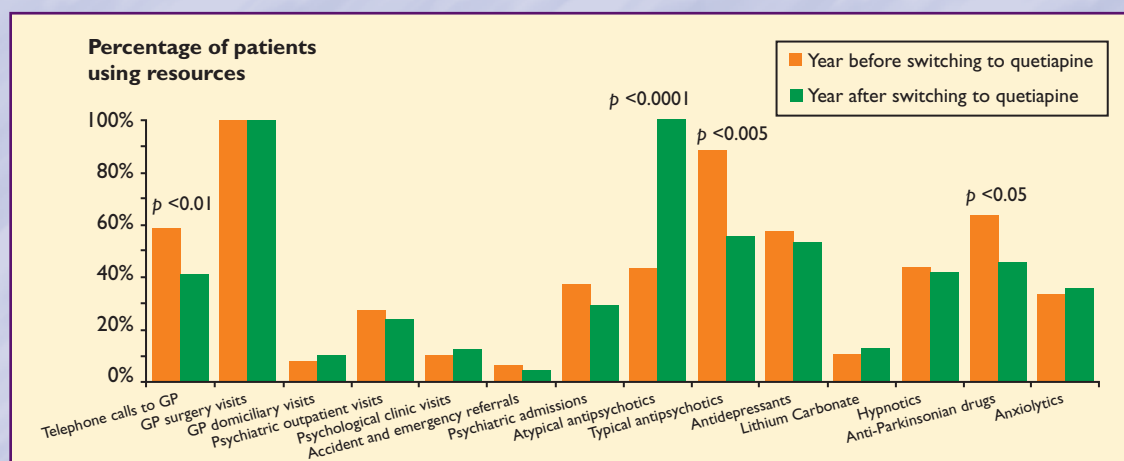


Figure 1: Percentage of patients using resources in the year before and after starting quetiapine.

- Additionally, 10% of patients experienced suicidal ideation in the year before quetiapine, whereas none of them experienced it in the year afterwards.
- The cost of healthcare resource use for the year before starting quetiapine was estimated to be £4,407 (95% CI: £2,992; £5,822) per patient. This compares to £4,232 (95% CI: £3,023; £5,442) per patient for the year after starting quetiapine (Figure 2).

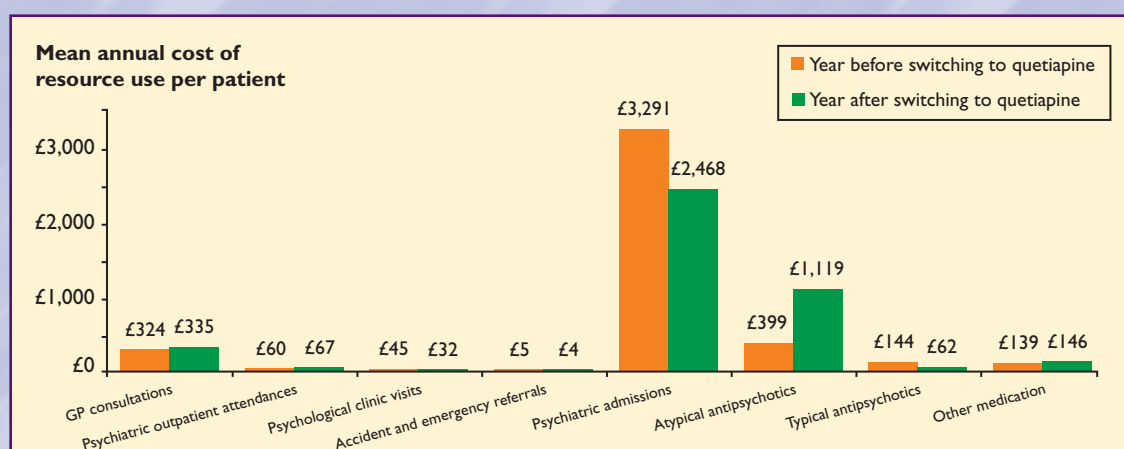


Figure 2: Mean annual cost of resource use per patient in the year before and after starting quetiapine.

- The additional cost of prescribing quetiapine was offset by a reduction in the use of secondary care resources and fewer typical antipsychotics being prescribed in the year after starting quetiapine.
- Psychiatric hospital admissions in the year before starting quetiapine were the primary cost driver, accounting for 75% of the annual cost. In the year after starting quetiapine, psychiatric hospital admissions accounted for 58% of the cost and the acquisition cost of atypical antipsychotics for a further 26%.
- Moreover, all medication accounted for 15% and 31% of the total healthcare cost of managing patients in the year before and after starting quetiapine respectively.

Resource Use And Costs Stratified By Hospitalisation

Thirty seven percent of all the patients (n=19) had been hospitalised in the year before starting quetiapine. During the year after starting quetiapine significantly fewer patients were hospitalised (100% versus 53%; $p < 0.01$). Hence, in the year before and after starting quetiapine these 19 patients had a mean 1.68 and 0.89 psychiatric admissions respectively ($p < 0.03$).

- The annual cost of healthcare resource use by these patients before and after starting quetiapine was estimated to be £10,048 (95% CI: £8,229; £11,867) and £6,491 (95% CI: £4,285; £8,696) per patient respectively (Figure 3).

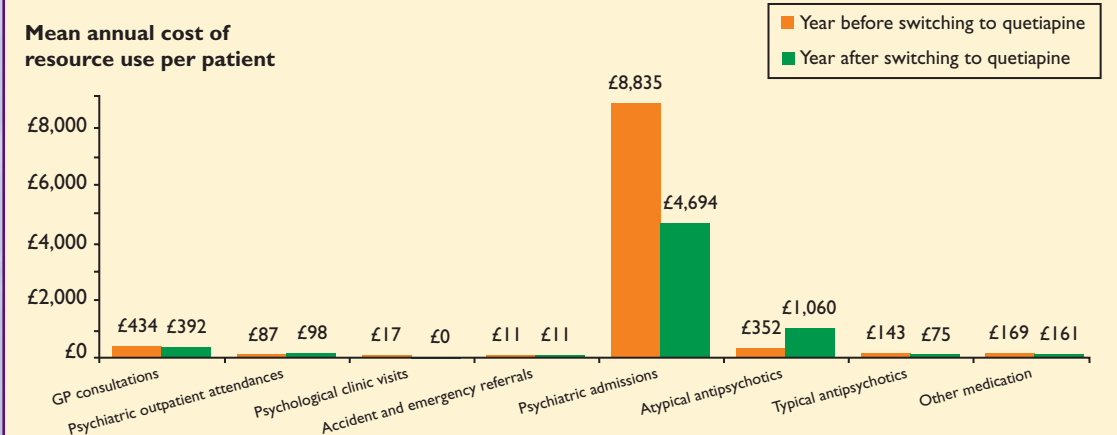


Figure 3: Mean annual cost of managing patients who were hospitalised in the year before starting quetiapine (n=19).

- The other 63% of patients (n=32) had not been hospitalised in the year before starting quetiapine. However, during the year after starting quetiapine 16% of patients were hospitalised ($p < 0.05$) and they had a mean 0.22 psychiatric admissions during the year.
- The annual cost of managing these patients before and after starting quetiapine was estimated to be £1,058 (95% CI: £672; £1,445) and £2,892 (95% CI: £1,782; £4,001) per patient respectively (Figure 4).

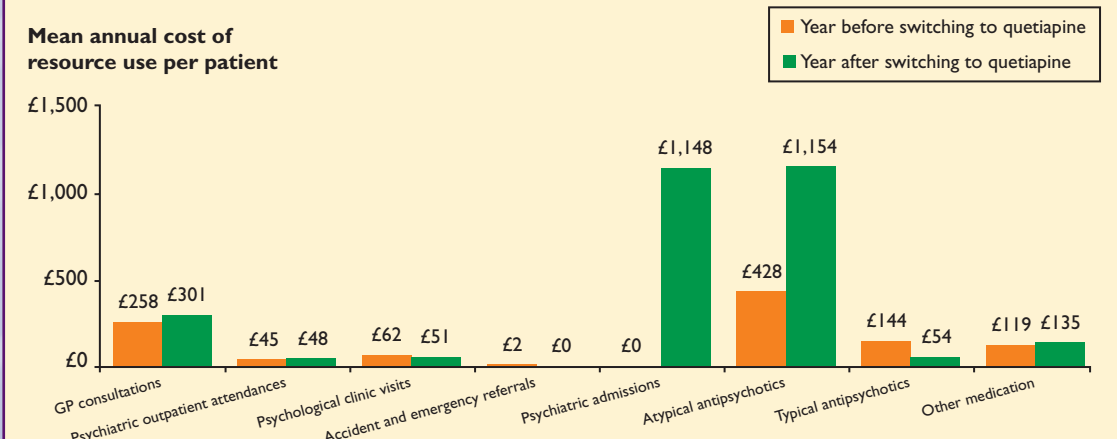


Figure 4: Mean annual cost of managing patients who were not hospitalised in the year before starting quetiapine (n=32).

- The additional cost of prescribing quetiapine to the patients who were hospitalised in the year before starting quetiapine was offset by a significant reduction in hospitalisation.
- In this group, psychiatric hospital admissions accounted for 88% and 72% of the cost of managing these patients in the year before and after starting quetiapine respectively.
- Antipsychotic medication and primary care accounted for 54% and 24% of the cost of managing patients who were not hospitalised in the year before starting quetiapine. In the year after starting quetiapine, hospitalisation accounted for 40% of the annual cost, whereas antipsychotic medication and primary care accounted for a further 42% and 10% respectively.
- Additionally, these patients had fewer GP consultations (mean 17 per annum) compared to those patients who were hospitalised in the year before starting quetiapine (mean 24 per annum).

DISCUSSION

- This study shows that changing a patient's antipsychotic medication to include quetiapine does not increase the annual cost of treatment per patient. The estimated cost of treatment for the year before starting quetiapine (£4,407 per patient) was similar to the year after starting quetiapine (£4,232 per patient).

This is because the annual cost of treating patients:

- Who had been hospitalised in the year before starting quetiapine was reduced by £3,557 per patient, due to a significant reduction in hospitalisation.
- Who had not been hospitalised in the year before starting quetiapine was increased by £1,834 per patient, due to the additional acquisition cost of quetiapine and an increase in hospitalisation.
- Fewer patients received anti-Parkinsonian drugs once they started to use quetiapine, suggesting they were experiencing fewer of the extrapyramidal side-effects which are commonly associated with typical antipsychotics. Moreover, an estimated 10% of patients experienced suicidal ideation in the year before starting quetiapine, whereas none of the patients experienced it during the year after starting this drug.
- Our findings are comparable to those previously reported with other atypical antipsychotics [4-8]. Additionally, the primary cost driver for managing these patients was psychiatric hospital admissions, as has been shown in previous studies [9,10].
- This analysis was limited to those patients in the GPRD for whom there was at least one year's data before and after starting quetiapine. The analysis did not consider patients who died, switched or were lost to follow-up. Neither did the study evaluate differences in clinical effectiveness between particular drugs. However, if the incidence

of adverse events and suicide attempts declined during quetiapine treatment, the impact of such improved clinical outcomes would not be reflected in our analysis.

- The number of patients studied was relatively small, increasing the chance of Type I and II statistical errors. Additionally, statistical tests were based on differences in resource use by patients and not on differences in GPs' behaviour. However, any such bias should be minimised since the data set was derived from a sufficiently large number of GPs and primary care practices. Furthermore, the distribution of patients according to age and sex is representative of the UK.
- The analysis compared only direct healthcare costs and excluded direct costs to patients and their families, indirect costs to society and intangible costs. Also excluded are the costs incurred by agencies, such as social services, for the provision of non-healthcare services. Moreover, since fewer patients were probably experiencing extrapyramidal symptoms and tardive dyskinesia, they were possibly experiencing a better health-related quality of life. It has previously been shown that patients value the long-term impact of quetiapine on their quality of life in addition to its efficacy and tolerability profiles [11].

In conclusion, clinical decisions regarding the use of quetiapine should not be based on its acquisition cost alone, but should also take into account the potential benefits of reduced hospitalisation and improved tolerability. Further studies are required to assess the impact of quetiapine on patients' health-related quality of life to enable its clinical benefits to be measured in a way that will enable comparisons with other healthcare interventions.

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