

DO PRIOR AUTHORIZATION POLICIES DISCOURAGE FIRST-LINE ANTIPSYCHOTIC USE IN PATIENTS NEWLY DISCHARGED FROM A HOSPITALIZATION FOR SCHIZOPHRENIA IN SASKATCHEWAN?

David F Blackburn¹, David Tran¹, Alex Crawley¹, Sarah Lynds¹, Anne Champagne², Lauren Bresee³, Alfred J Rémillard¹

¹The College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Saskatchewan; and the

²Drug Plan and Extended Benefits Branch, Saskatchewan Ministry of Health, Regina, Saskatchewan; and

³Alberta Health Services, Calgary, Alberta, Canada

Corresponding Author: d.blackburn@usask.ca

ABSTRACT

Background

Drug benefit providers can decrease prescribing of specific medications through prior authorization policies. In Saskatchewan, certain second generation antipsychotics (SGAs) are recognized as first-line agents to manage schizophrenia; but, require prior authorization because their coverage is restricted in other conditions. We aimed to determine if the need for prior-authorization substantially diminishes prescribing of first-line SGAs in comparison to unrestricted agents.

Objectives

To conduct an ecological comparison of SGA prescribing with changes in prior- authorization policies between 1997 and 2005 using health-administrative databases in Saskatchewan, Canada.

Method

Eligible subjects were discharged from hospital with a first-time primary diagnosis of schizophrenia between 1997 and 2005. SGAs dispensed within 7 days of discharge were used to estimate prescribing preferences for olanzapine and quetiapine relative to risperidone. Percentages of SGA use were age and sex standardized to the 2000 cohort.

Results

Out of 1,277 eligible patients, 521 (41%) received 564 SGA dispensations within 7-days of hospital discharge. Between 1997 and 1998, risperidone was the only SGA covered for first-line use and made up 72.6% (82/113) of SGA use while olanzapine made up 27.4% (31/113) for a crude preference ratio of 0.38 (27.4/72.6). Risperidone use decreased to 65.8% in 1999-2002 and to 47.4% in 2003-2005 as a percentage of SGA dispensations. Correspondingly, the preference ratios for olanzapine and quetiapine increased from 0.40 to 0.57 and from 0.12 to 0.54 in these respective periods.

Conclusions

The requirement for prior-authorization does not appear to substantially diminish prescribing of first-line SGAs for the treatment of schizophrenia in Saskatchewan, Canada.

Key Words: *Antipsychotics, schizophrenia, health policy, prior authorization*

Drug benefit providers such as government ministries or private insurance companies can influence medication prescribing through the use of prior-authorization policies.

Typically, these policies prohibit reimbursement to patients for restricted medications unless the prescription is authorized or approved by the drug benefit provider.

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A drug benefit provider may restrict medications for a variety of reasons. For example, medications may be restricted if indiscriminate use leads to decreased effectiveness, if the side effect profile of a medication requires extra precautions, if there is high potential for widespread use in off-label indications, if the clinical evidence only supports use of a drug in certain circumstances, if the cost is substantially higher than alternatives with similar benefits, or if it is clearly relegated to second-line use when first-line medications have failed. These drug restrictions are applied independently and may not be consistent between drug benefit providers.

In Canada, second generation antipsychotics (SGA's) were introduced in the mid to late 1990s and had virtually replaced first generation antipsychotics (FGAs) by the year 2000.¹As a result of the influx of branded products, total prescription costs for antipsychotic medications rose significantly² prompting several regions in the United States to restrict certain SGAs in order to manage the escalating costs. Subsequently, published reports demonstrated the effectiveness of prior-authorization policies to substantially reduce prescribing of restricted SGAs.³⁻⁵

Given the strong evidence demonstrating how prior-authorization policies substantially reduce prescribing of restricted SGA agents, we hypothesized that the existence of a prior authorization process in Saskatchewan could also reduce prescribing of first-line SGAs under specific circumstances. For example, when SGAs such as olanzapine and quetiapine became recognized as first-line agents for schizophrenia in Saskatchewan, they were still restricted by prior-authorization policies that restricted their coverage for other conditions. Thus, prescribers

may have avoided these first-line agents due to the administrative burden of requesting prior-authorization. We conducted a descriptive study examining the relative prescribing preferences for SGAs with respect to changing prior authorization policies in patients with schizophrenia between 1997 and 2005 to determine if prior-authorization was strongly associated with reduced use of certain first-line agents.

METHODS

Data Source

This retrospective study was carried out using health administrative databases in Saskatchewan, Canada (population: 1 million). The majority of the provincial population (about 99%) receive provincial health benefits and approximately 90% of these are also eligible for prescription drug benefits.⁶ Thus, all medications covered under the provincial drug plan are recorded in this database for the vast majority of the province with the exception of restricted medications that have not been granted prior-authorization. In the case of SGA's, risperidone, olanzapine and quetiapine were all originally restricted to prior authorization status in Saskatchewan but restrictions for risperidone and quetiapine were lifted at varying times between 1997 and 2003 [Table 1]. Information on hospital discharge diagnoses and length of stay was taken from the hospital separation database. Discharge diagnoses were coded using ICD-9 prior to 2001 and with ICD-10CA thereafter. Finally, the person registry file was used to confirm beneficiary status of each individual eligible for analysis. Data were linked across the administrative datasets with a unique subject identification number common to all files.

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TABLE 1 Prior-authorization criteria related to the diagnosis of schizophrenia for second generation antipsychotics between 1997 and 2003.

Antipsychotic	Saskatchewan Prior Authorization criteria
Risperidone	January 1997: Unrestricted coverage (i.e., prior authorization not required for reimbursement)
Olanzapine	March 1997: For patients with schizophrenia who are either resistant to or intolerant of other medications January 1999 (revised criteria): For treatment of patients with schizophrenia
Quetiapine	January 1999: For treatment of schizophrenia April 2003: Unrestricted coverage (i.e., prior authorization not required for reimbursement)

Saskatchewan's Exceptional Drug Status program (prior authorization) coverage criteria for second generation antipsychotics, 1994-2005.¹⁰

Subjects

We created a retrospective cohort of subjects who were prescribed an SGA upon discharge from a first-time hospitalization for schizophrenia. Specific inclusion criteria included: a) hospital discharge between January 1, 1997 to June 30, 2005 with a primary or most responsible diagnosis of schizophrenia (ICD-9: 295.x and ICD-10-CA F20, F25); b) at least seven days of continuous beneficiary status following the discharge date without hospital re-admission, death, or end of the follow up period (July 30, 2005); c) a prescription dispensation for either risperidone, olanzapine or quetiapine within 7 days following discharge; and d) five years of continuous medication coverage prior to the incident hospitalization with no record of prior schizophrenia or related conditions (ICD-9: 295.x or 297-298.x and ICD-10-CA F20 to F29). Re-admissions occurring within one day of discharge were considered transfers and counted as part of the index hospitalization. Subjects could only enter the cohort once (i.e., on the first eligible admission). Although the majority of discharge prescriptions are likely filled within seven days of discharge,⁷ a sensitivity analysis using a period of 30 days after hospital discharge was also used to evaluate consistency of our findings. Use of clozapine was not included because it was considered a second-line agent during the entire observation period.

Endpoints and Analysis

Prescribing preferences for specific SGA medications, including risperidone, olanzapine, and quetiapine, were inferred from prescription dispensation records occurring within seven days of hospital discharge. Percentages of subjects filling each agent were stratified by the index year and were age and sex-standardized to subjects discharged in 2000 to account for changing demographics over time. Also, we estimated a 'preference-ratio' for olanzapine and quetiapine relative to risperidone in each year (% of SGA users receiving olanzapine (or quetiapine) / % of SGA users receiving risperidone). Risperidone was used as the reference SGA because it was available with unrestricted coverage for the entire length of the follow-up period.

Trends in prescribing of SGA medications over time were descriptively examined with respect to three periods where prior authorization policies differed [Table 1]. During period A (January 1, 1997 - December 31, 1998), risperidone was the only SGA covered by the provincial drug plan that did not require prior authorization. In contrast, coverage for olanzapine was only granted for individuals with schizophrenia who failed other therapies. During period B (January 1, 1999 - March 31, 2003), quetiapine and olanzapine were no longer restricted for use in schizophrenia; however, prior

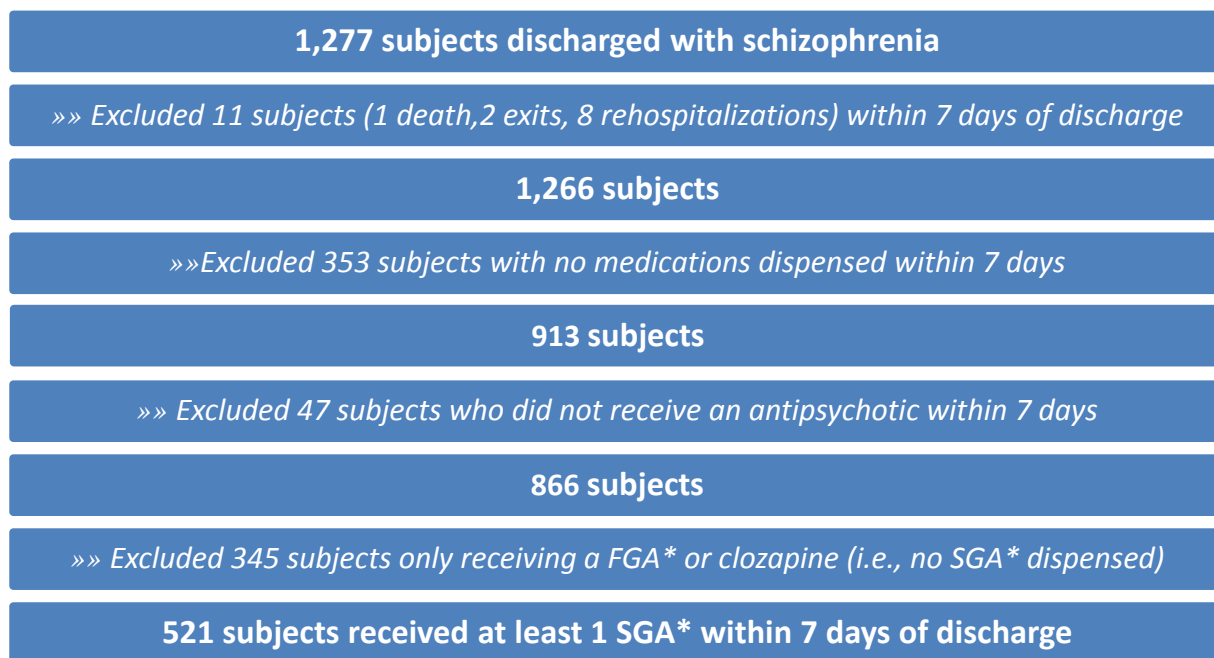
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authorization was still necessary for coverage because restrictions remained with respect to other conditions. During period C (April 1, 2003 - June 20, 2005), olanzapine was the only SGA still requiring prior-authorization because quetiapine became a full-benefit drug on April 1, 2003 [Table 1]. Changes in the percentage of individuals receiving each agent compared to all SGA users and the preference ratio were compared between each pre-specified period. All analyses were descriptively reported and compared with changing restriction policies over time using an ecological approach. Analyses were conducted using SAS version 9.3 (SAS Institute Inc. Cary, NC).

RESULTS

A total of 1,277 patients with a primary or most responsible diagnosis of schizophrenia were identified from hospital discharge records between 1997 and 2005. Within one week of discharge, 1 died, 2 lost beneficiary status, and 8 were re-hospitalized. Of the remaining 1,266 subjects, a substantial number had no record of any medication dispensed within 7 days (n=353; 27.8%), which decreased to 206 (16.2%) when 30 days post discharge was examined. Of the 913 individuals receiving at least one dispensed medication within 7 days, 866 (94.9%) were dispensed at least one antipsychotic. Almost 40% (345 / 866) of these individuals received either a FGA or clozapine, while 60.2% (521 / 866) received an SGA [Figure 1].

FIG. 1 Summary of Exclusions



Thus, the final sample was made up of 521 subjects and 564 SGA prescriptions because 43 subjects (8%) filled two SGAs within the 7 days following discharge. The vast majority of these individuals were initially dispensed both agents on the same day (35/43 = 81.4%). All 564 SGAs were included in the primary analysis. The median age was 43 years, 54% were male, 49% resided in an urban centre or urban agglomeration (i.e., at least 10,000 residents in the core community)⁸ and 58% were receiving income security benefits on the day of discharge.

Risperidone accounted for 61.5% (347/564) of all SGA discharge prescriptions between 1997 and 2005 while olanzapine and quetiapine accounted for 26.8% (151/564) and 11.7% (66/564) respectively. However, when risperidone was the only SGA covered for first-line use and the only agent covered without prior authorization (i.e., between 1997 and 1998), it was prescribed to 72.6% (82/113) of all SGA users while olanzapine made up 27.4% (31/113) for a crude preference ratio of 0.38 (27.4/72.6). Quetiapine was not listed in the provincial drug benefit list during this period. Expanding the observation window to 30 days findings were very similar to the original findings; risperidone was used in 71.9% (87/121), and olanzapine in 28.1% (34/121) for a crude preference ratio at 30 days of 0.39.

From 1999 to 2002, quetiapine was now covered for first-line use in schizophrenia with the condition of prior authorization. During this period, it was initiated in 7.9% (22/278) of all subjects receiving SGAs at discharge. The use of olanzapine during this same period was 26.3% (73/278), corresponding to an absolute decrease of 1.1% compared to the prior period. However, the use of risperidone decreased by 6.7% (72.6% to 65.8%) compared to the previous period despite remaining the only SGA covered without the need for prior authorization [Figure 2]. As a result, the crude preference ratios for olanzapine and quetiapine during this period were 0.40 (26.3/65.8) and 0.12 (7.9/65.8), respectively. Again, the 30-day sensitivity analysis result was very similar with corresponding preference ratios of 0.45 (28.4/63.0) for olanzapine and 0.14 (8.6/63.0) for quetiapine.

From 2003 to 2005, quetiapine was granted full coverage without the need for prior-authorization, and its use following discharge increased by 17.5 percentage points compared to the previous period (i.e., from 7.9% to 25.4%). However, this increased use of quetiapine relative to all other SGAs occurred primarily at the expense of risperidone, which decreased by 17.5% (65.8% to 47.4%) compared to the previous period. Meanwhile, the absolute use of olanzapine remained virtually unchanged at +0.9% (26.3% to 27.2%) despite ongoing requirement for prior-authorization. The corresponding preference ratios for quetiapine and olanzapine (relative to risperidone) increased to 0.54 (25.4/47.4) and 0.57 (27.1/47.4), respectively. Corresponding preference ratios calculated from the 30-day sensitivity analyses were 0.56 (27.0/48.0) for olanzapine and 0.52 (25.0/48.0) for quetiapine.

Results did not change substantially upon age-sex standardization (shown in Figure 2). Also, utilization rates and preference ratios changed only slightly when the analysis was restricted to the first SGA dispensed among those receiving more than one; individuals were excluded from this subgroup if both SGAs were initially dispensed on the same day. Using this approach, olanzapine preference ratios were 0.34, 0.36, and 0.55 in 97-98, 99-02, and 03-05, respectively compared to 0.38, 0.40, and 0.57 in the primary analysis. Corresponding preference ratios for quetiapine were 0, 0.11, and 0.43 in this subgroup analysis compared to 0, 0.12, and 0.54 in the primary analysis.

DISCUSSION

We estimated trends in prescribing of SGAs for patients discharged from a first-time hospitalization relating to schizophrenia between 1997 and 2005. In general, the use of risperidone decreased throughout the observation period while the use of olanzapine and quetiapine increased over time despite the requirement for prior authorization. Although these findings do not rule out the possibility that prior-authorization slightly discouraged prescribing of certain first-line SGAs, it is clear that physicians prescribed these agents

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frequently and increasingly throughout the years of observation despite their restricted status.

It has been suggested that the administrative barrier of prior authorization is seen as an obstacle towards the utilization of medications.⁹ Moreover, prior authorization is known to substantially diminish prescribing of restricted antipsychotics.³⁻⁵ Thus, it would be of great concern if these system-level policies discouraged prescribers from considering first-line options on the basis of administrative burden alone. However, in Saskatchewan, attempts have been made to reduce the administrative burden of prior-authorization; requests can be made by mail, fax or phone (e.g., a toll-free line accepts requests 24 hours daily).¹⁰ In addition, in 1999 pharmacists were given the authority to apply for prior-authorization on behalf of prescribers and patients.¹⁰ These simplified procedures may have reduced the administrative burden of obtaining prior-authorization so prescribers were not discouraged to consider first-line SGAs on the restricted list. Regardless, evidence for frequent use of SGAs was found despite the requirement for prior-authorization.

Our findings were examined descriptively so several limitations must be considered. First, we were not able to directly validate the diagnosis of schizophrenia in our cohort, which may explain the high proportion of subjects not receiving any antipsychotic agents after discharge from hospital. However, hospital based schizophrenia diagnoses appear moderately reliable in Saskatchewan;¹¹ also, we required all study subjects to have received a dispensation for an SGA within 7 days of discharge. Secondly, SGAs that were not granted prior authorization may still have been prescribed and dispensed but not captured in the database. As well, provision of sample medications by physicians is not captured by the prescription drug database. Finally, the analysis was carried out using ecological/temporal comparisons only. Although we standardized our results by age and sex and only included subjects following a first-time admission for schizophrenia, many other influences will have influenced the selection of SGAs in this population over time. Although our findings do not rule out a possible influence of prior-authorization in prescribing first-line SGAs, the results can

provide assurance that these system-level policies are not substantially discouraging prescribers from considering all first-line SGAs for patients with schizophrenia.

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