Progress in Neuro-Psychopharmacology & Biological Psychiatry 35 (2011) 246–251

Contents lists available at ScienceDirect

Progress in Neuro-Psychopharmacology & Biological Psychiatry

journal homepage: www.elsevier.com/locate/pnp

A pilot study of antipsychotic prescribing decisions for acutely-Ill hospitalized patients

E. Cabrina Campbell [a,*], Melissa DeJesus [a], Barry K. Herman [b], Brian J. Cuffel [c], Kafi N. Sanders [c], William Dodge [c], Vasant Dhopesh [a], Stanley N. Caroff [a]

[a] Philadelphia Veterans Affairs Medical Center and the University of Pennsylvania School of Medicine, VA Medical Center-116A, University & Woodland Aves., Philadelphia, PA 19104, United States
[b] Clinical Research and Medical Affairs, Sunovion Pharmaceuticals, Inc., 84 Waterford Drive, Marlborough, MA 01752-7010, United States
[c] Pfizer, Inc., 235 East 42nd Street, New York, NY, 10017, United States

ARTICLE INFO

Article history:
Received 24 June 2010
Received in revised form 10 November 2010
Accepted 11 November 2010
Available online 24 November 2010

Keywords:
Antipsychotic drugs
Metabolic syndrome
Prescribing decisions
Schizophrenia
Schizoaffective disorder
Bipolar disorder

ABSTRACT

Background: Evidence on antipsychotic prescribing decisions is limited. This pilot study quantified factors considered in choosing an antipsychotic and evaluated the influence of metabolic status on treatment decisions.

Methods: Prescribing decisions by 4 psychiatrists were examined based on 80 adult patients initiated on antipsychotic medication diagnosed with schizophrenia, schizoaffective disorder or bipolar disorder by DSM-IV criteria, who were admitted to an acute inpatient psychiatric program of an urban Veterans Affairs Medical Center. The primary analysis examined the association between antipsychotic treatment choice and predictions of symptom control and metabolic risk. Secondary analyses included comparison of the chosen and next best treatments in predicted symptom control and metabolic risk, the frequency of reasons cited for drug choice, and the association between treatment choice and patients' baseline metabolic parameters. Mean differences and odds-ratios (OR) with 95% confidence intervals were used to compare relationships between treatment choice, ratings of risk and metabolic data.

Results: Antipsychotic choice correlated significantly with ratings of predicted symptom control (OR = .92, $p = 0.02$) and metabolic risk (OR = .88, $p = 0.01$). Mean differences between the chosen and next best drugs were significant but small in predicted symptom control ($F = 2.81$, $df = 3, 76$; $p < 0.05$) compared with larger differences in anticipated metabolic risk ($F = 14.80$, $df = 3, 76$; $p = 0.0001$). Nevertheless, among 24 identified reasons influencing drug selection, anticipated metabolic risk of chosen antipsychotics was cited less often than efficacy measures. In contrast to psychiatrists' expectations of metabolic risk with selected treatments, we found that patients' actual baseline BMI, fasting glucose, blood pressure, and Framingham risk levels did not necessarily predict antipsychotic treatment choice independent of other factors.

Conclusion: In the context of an acute psychiatric hospitalization, pilot data suggest that predictions of symptom control and metabolic risk correlated significantly with antipsychotic choice, but study psychiatrists were willing to assume relative degrees of metabolic risk in favor of effective symptom control. However, prescribing decisions were influenced by numerous patient and treatment factors. These findings support the potential utility of the ATCQ questionnaire in quantifying antipsychotic prescribing decisions. Further validation studies of the ATCQ questionnaire could enhance translation of research findings and application of treatment guidelines.

Published by Elsevier Inc.

1. Introduction

In view of conflicting data and opinions on the relative merits of different antipsychotic drugs in efficacy, adverse effects and cost effectiveness (Davis et al., 2003; Geddes et al., 2000; Lieberman et al., 2005; McEvoy et al., 2005; Rosenheck et al., 2003; Stroup et al., 2006), it is unclear to what extent evidence from clinical trials has influenced prescribing practices.(Essock, 2002; Marder, 2002) Surveys have shown a gap between evidence-based antipsychotic treatment algorithms and decision making in clinical practice.(Buchanan et al., 2002; Covell et al., 2002; Marder et al., 2002; Miller et al., 1999) For example, there has been consistent evidence on the prevalence of metabolic syndrome among patients with schizophrenia and the relative differences among antipsychotics in liability for weight gain, diabetes and dyslipidemia. (Allison and Casey, 2001; Correll et al., 2006; Henderson, 2005; Lieberman et al., 2005; McEvoy et al., 2005;

Abbreviations: ATCQ, Antipsychotic Treatment Choice Questionnaire; VAS, visual analogue scale; APA, American Psychiatric Association; ADA, American Diabetes Association; GLM, General Linear Model; SAS, "Statistical analysis system" software available from SAS Institute Inc.; BMI, Body mass index; OR, Odds ratio; SD, Standard deviation; df, Degrees of freedom; DSM, Diagnostic and Statistical Manual.

* Corresponding author. Tel.: +1 215 823 4144; fax: +1 215 823 4610.
E-mail address: Cabrina.campbell@va.gov (E.C. Campbell).

0278-5846/$ – see front matter. Published by Elsevier Inc.
doi:10.1016/j.pnpbp.2010.11.018

Nasrallah, 2003; Sernyak et al., 2002; Stroup et al., 2006) Based on these findings, a consensus statement recommending routine monitoring of weight, lipid and glucose levels in patients initiated on antipsychotics was published (American Diabetes Association and American Psychiatric Association, 2004). Nevertheless, metabolic parameters are infrequently monitored, and drugs with low metabolic risk are prescribed less often than high risk drugs (Essock, 2002; Morrato et al., 2009b). Thus, it is unclear how metabolic risk is balanced against efficacy, costs, co-morbidities and other variables in making prescribing decisions.

Few studies have examined factors influencing prescribing patterns in clinical practice. Hoblyn et al. examined predictors of antipsychotic prescribing in veterans with schizophrenia and found that hospital size, age and secondary diagnosis predicted prescription of a second rather than a first-generation drug (Hoblyn et al., 2006). Hamann et al. found that older physicians were five times more likely to prescribe first-generation antipsychotics compared to younger physicians (Hamann et al., 2004). Covell et al. documented the role of patient race and ethnicity influencing drug choice (Covell et al., 2002). Weiden noted the importance of opinions and perceptions among psychiatrists concerning alternative treatment choices (Weiden et al., 2006).

Contributing to this issue is the lack of accepted methods or instruments for assessing how individual psychiatrists balance risks versus benefits in selecting antipsychotic drugs for a particular patient. Linden et al. recognized the importance of multiple physician and patient variables by developing a list of survey questions, which they then used to question psychiatrists directly about their reasons for or against switching to olanzapine albeit without specifically addressing metabolic risk (Linden et al., 2006). In contrast, clinical decision making and health care utility studies in other disease states may offer a more quantifiable paradigm to measure how treatment alternatives are weighed (Backlund et al., 2000; Fisch et al., 1981; Kaplan et al., 1993; Kirwan et al., 1990). For example, Backlund et al. examined factors influencing decisions to prescribe lipid-lowering drugs and how clinical decisions compared with guidelines on hyperlipidemia (Backlund et al., 2000). Using laboratory records, doctors completed a survey that assessed their readiness to prescribe a lipid lowering drug in each of 40 cases on a visual analogue scale.

Understanding how psychiatrists utilize evidence to make prescribing decisions has important implications for medical education, translation of research findings, application of treatment guidelines, and clinical practice. The primary objective of this preliminary study was to pilot a questionnaire designed to quantify risks and benefits considered by psychiatrists in choosing an antipsychotic medication. A secondary objective was to evaluate the extent to which antipsychotic treatment decisions are affected by metabolic and cardiovascular risk levels. We hypothesized that numerous patient and treatment variables would influence prescribing decisions, but that symptom control and metabolic risk would be major considerations in treatment choice.

2. Methods

2.1. Subjects

Four psychiatrists (ages 40–70 years), with at least 10 years of patient care and teaching experience each on an acute inpatient psychiatric program located in an urban, academically-affiliated Veterans Affairs Medical Center, were recruited to participate in the study. The study focused on factors they considered in prescribing decisions choosing among antipsychotic drugs for a sample series of patients admitted under their care. Choice of antipsychotic was based entirely on clinical judgment in each case, without institutional or formulary restrictions.

A consecutive sample of 80 patients admitted to the acute inpatient psychiatric program of the Veterans Affairs Medical Center was used to study prescribing decisions between November 2006 and June 2007. Patients were included if they were 18–65 years of age, diagnosed with schizophrenia, schizoaffective disorder or bipolar disorder by DSM-IV criteria, prescribed the intramuscular or oral formulations of any antipsychotic medication for reasons other than temporary management of acute agitation within seven days of the admission date, had height and weight recorded at any time during the inpatient admission, and had fasting blood glucose levels reported in the past 12-months. Other variables, such as patient demographics and psychiatric and medical diagnoses, were abstracted from medical records. Further, the investigators obtained measures from medical records that would permit calculation of Framingham risk equations of Wilson (Wilson et al., 1998), such as total cholesterol, HDL, blood pressure, diabetes and smoking status. There were no additional laboratory tests or treatment changes required as part of the investigation. Patients were excluded if they had primary psychiatric diagnoses other than above, were not prescribed antipsychotic medications after admission, lacked required laboratory data in the required time frame or were women who were pregnant. The study was approved by the institutional review board and informed consent was waived for both psychiatrists and patients.

2.2. Assessment instrument

The Antipsychotic Treatment Choice Questionnaire (ATCQ; available in Supplementary Materials) was jointly developed by the investigators through a consensus process to assess the relative importance of different factors in antipsychotic prescribing decisions. Development began by reviewing methods for health utility scaling with a search of the literature for studies on decision-making related to psychiatric prescribing. The ATCQ consisted of two sections. In the first section, psychiatrists were instructed to identify only the three most important reasons for antipsychotic drug choice for a particular patient using a simple checklist of 35 variables covering patient characteristics and treatment history, clinical assessment of symptoms, metabolic risks, and other considerations. This section of the ATCQ was changed after an interim analysis indicated that the “Patient choice or preference” and the “Caregiver choice or preference” reasons were being endorsed more often than expected, where a more specific reason for the antipsychotic choice could have been given by the psychiatrist. These categories were further clarified with the psychiatrists as default selections to be used only when more precise reasons could not be elicited, resulting in less frequent use of these non-specific reasons. In the second section of the ATCQ, psychiatrists were asked to list the antipsychotic drugs chosen for a particular patient, and then to estimate the expected degree of symptom control and metabolic risk posed by the chosen medication in that patient on separate 100 mm visual analogue scales (VAS). Finally, they were asked to list the next best alternative antipsychotic drugs, estimating the certainty of symptom control and metabolic risk compared to the chosen prescribed antipsychotic drug using the same VAS.

On the VAS for achieving symptom control, ratings ranged from 0 mm (completely uncertain) to 100 mm (completely certain). The metabolic risk rating ranged from 0 mm (no risk) to 100 mm (most risk). Calculations of mean differences between drug group choices on each VAS rating scale were interpreted as a percentage difference in the degree of certainty of symptom control and metabolic risk, respectively, predicted or anticipated by the rating psychiatrists. The ATCQ required approximately 5 minutes to complete.

2.3. Study design

This is a preliminary, cross-sectional, descriptive study involving the development and testing of a brief questionnaire designed to