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Effectiveness of Switching from Antipsychotic Polypharmacy to Monotherapy

Susan M. Essock, PhD[1,2], **Nina R. Schooler, PhD**[3,4], **T. Scott Stroup, MD, MPH**[1,2], **Joseph P. McEvoy, MD**[5,6], **Ingrid Rojas**[1,2], **Carlos Jackson, PhD**[1,2], **Nancy H Covell, PhD**[1], and **for the Schizophrenia Trials Network**

[1]New York State Psychiatric Institute

[2]Columbia University

[3]Georgetown University

[4]VA VISN 5 MIRECC

[5]John Umstead Hospital

[6]Duke University Medical Center

Abstract

Objective—This randomized trial addressed risks and benefits of staying on antipsychotic polypharmacy versus switching to monotherapy.

Method—Adult outpatients with schizophrenia taking two antipsychotics (127 participants across 19 sites) were randomly assigned to Stay on Polypharmacy or Switch to Monotherapy by discontinuing one antipsychotic. The trial lasted for 6 months, with a 6-month naturalistic follow-up. Kaplan-Meier and Cox regression analyses examined time to discontinuation of assigned antipsychotic treatment, and random regression models examined additional outcomes through time.

Results—Individuals assigned to Switch to Monotherapy had shorter times to all-cause treatment discontinuation than those assigned to Stay ($p < .05$). By month 6, 86% (n=48) of those assigned to Stay on Polypharmacy were still taking both medications whereas 69% (n=40) of those assigned to Switch to Monotherapy were still taking that monotherapy. Most monotherapy discontinuations entailed returning to the original polypharmacy. Groups did not differ with respect to psychiatric symptomatology or hospitalizations. The monotherapy group lost weight whereas the polypharmacy group gained weight.

Location of work and address for reprints. Please address correspondence to: Susan M. Essock, Ph.D., NYSPI, 1051 Riverside Drive, Box 100, New York, NY 10032; tel. 212-543-6950; fax. 212-543-5085; se2176@columbia.edu.

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The Schizophrenia Trials Network sites for this study included: L. Adler, Clinical Insights, Glen Burnie, Md.; M. Byerly, University of Texas Southwestern Medical Center at Dallas, Dallas; S. Caroff, Behavioral Health Service, Philadelphia; J. Csernansky, Washington University School of Medicine, St. Louis; C. D'Souza, Connecticut Mental Health Center, New Haven; C. Jackson, James J. Peters VA Medical Center, Bronx; T. Manschreck, Corrigan Mental Health Center, Fall River, Mass.; J. McEvoy, Duke University Medical Center, Durham, N.C.; A. Miller, University of Texas Health Science Center at San Antonio, San Antonio; H. Nasrallah, University of Cincinnati Medical Center, Cincinnati; S. Olson, University of Minnesota Medical School, Minneapolis; J. Patel, University of Massachusetts Health Care, Worcester; B. Saltz, Mental Health Advocates, Boca Raton, Fla.; R.M. Steinbook, University of Miami School of Medicine, Miami; and A. Tapp, Veterans Affairs Puget Sound Health Care System, Tacoma, Wash. Additional sites included 5 sites in the public mental health system in CT (K. Marcus, Medical Director).

Drs. Essock, Stroup, and Covell report no competing interests.

Conclusions—Discontinuing one of two antipsychotics was followed by treatment discontinuation more often and more quickly than when both antipsychotics were continued. However, two thirds of participants successfully switched, groups did not differ with respect to symptom control, and switching to monotherapy resulted in weight loss. This supports the reasonableness of prescribing guidelines encouraging trials of antipsychotic monotherapy for individuals receiving antipsychotic polypharmacy, with the caveat that individuals should be free to return to polypharmacy if an adequate trial on antipsychotic monotherapy proves unsatisfactory.

Introduction

Despite the paucity of supporting data, antipsychotic polypharmacy remains a prevalent practice (1,2); most estimates of antipsychotic polypharmacy among individuals with schizophrenia range between 10–30% (3,4). Additionally, these rates appear to be increasing through time (3,5), with one study examining Medicaid claims for > 30,000 Medicaid recipients with schizophrenia reporting an increase from 32% in 1998 to 41% in 2000 (3). In contrast, treatment guidelines either exclude antipsychotic polypharmacy (6,7) or recommend it only as a last resort (8).

To date, the only randomized controlled studies examining antipsychotic polypharmacy included combinations with clozapine (9–13). Simpler prescribing regimens commonly are assumed to be associated with improved adherence, fewer side effects, and lower costs (1,8,14). On the other hand, switching from polypharmacy to monotherapy may present clinical challenges. In one small open label study in which 47 individuals switched from polypharmacy to monotherapy, 10 (23%) worsened significantly; on the other hand, 24 (55%) remained stable and 10 (23%) improved (15).

Given concerns about the risks (14) and costs (5), some large public mental health systems have begun initiatives to reduce the prevalence of antipsychotic polypharmacy. For example, the New York State Office of Mental Health convened a scientific advisory board to identify clinically questionable prescribing practices, and polypharmacy was the one area identified as raising clinical concerns by each of the groups of experts convened (1). Subsequently, a meta analysis based mainly on studies involving polypharmacy with clozapine concluded that, in certain clinical situations, antipsychotic polypharmacy may be superior to monotherapy, but also noted that the availability of studies may be subject to publication bias (16).

In summary, polypharmacy is a common practice that persists despite the lack of supporting evidence and despite treatment guidelines that discourage the practice. Antipsychotic polypharmacy raises concerns about increases in total dosages, side effects, and mortality, as well as decreased adherence (14). A review of the limited available studies illustrates the need for randomized trials directly addressing the question of whether a person with schizophrenia on antipsychotic polypharmacy is likely to be better off remaining on both antipsychotics or discontinuing one of them. This report provides data from such a trial.

Method

Study Participants

Between December 2004 and March 2008, 15 study sites in the NIMH Schizophrenia Trials Network and 5 sites in the public mental health system in Connecticut recruited adults (age 18 and older) with a SCID diagnosis of schizophrenia or schizoaffective disorder who were currently taking two prescribed antipsychotic medications, documented by a plasma level greater than zero for each antipsychotic. Additional inclusion criteria were: sub-optimal treatment because of persistent psychopathology or significant side effects and willingness

to consider a change in antipsychotic medication, continuing access to medications without financial burden, and having had at least one clinical visit every 3 months for the past 6 months. Exclusion criteria included: symptoms or side effects so severe that a medication change was indicated immediately; exacerbation of psychiatric symptoms within the last 3 months which resulted in significant intervention .e.g having spent one or more nights in a psychiatric hospitalization, having received services from a crisis intervention program or psychiatric emergency department; living in a skilled nursing facility as a result of a physical condition or disability; pending criminal charges; currently pregnant or breastfeeding; currently prescribed three or more antipsychotic medications for ongoing daily administration. For the antipsychotic quetiapine, daily dosage had to be at least 100 mg (to exclude those who were prescribed this agent primarily as a sleep aid). This research was carried out with the approval of the participating institutions' institutional review boards.

After a thorough description of the study to participants and an assessment of understanding of the consent material, clinical interviewers obtained each participant's written informed consent to participate. (See the online supplement to this article for a CONSORT diagram detailing the recruitment flow.) Following informed consent, individuals completed a baseline interview that included collection of a blood sample to determine whether the individual was taking the prescribed antipsychotics.

Following completion of the baseline interview and receipt of lab findings confirming the presence of both prescribed antipsychotics, the study's Project Director used a single pre-determined randomization stream (i.e., without stratification) to assign participants to Stay on both antipsychotic medications or to discontinue one (Switch). No exceptions were made to this pre-determined randomization stream. Where the participant was randomly assigned to Switch to Monotherapy, the participant and physician decided together which of the two antipsychotics to discontinue. Study protocol specified that the antipsychotic chosen to be discontinued be stopped within 30 days and that study participants continue with their assigned medication regimen for 6 months unless clinically contraindicated. Medication dosing was not constrained by Study protocol; instead, prescribers used their clinical judgment to adjust dosages as they believed best for an individual within the assigned treatment condition (Stay or Switch). Study protocol did not restrict the use of adjunctive or concomitant psychotropic medications other than antipsychotic medications. After the 6-month study period, data collection continued for an additional 6 months of naturalistic follow-up. Treatment was open label with assessment by blinded clinical raters.

Baseline measures

Clinician interviewers used the Structured Clinical Interview for DSM-IV (SCID) P (patient version) (17) to obtain a research diagnosis. Additionally, interviewers recorded socio-demographic information and psychiatric history, through both chart review and participant interview.

Primary outcome measure

The Primary outcome measure was time to all-cause medication discontinuation (http://clinicaltrials.gov/ct2/show/NCT00044655?term=essock&rank=1). Project staff at each site conducted record reviews and provided start and stop dates for each dosage of each medication prescribed. The Project Director reviewed each form and followed-up with sites as needed to clarify any discrepancy and to verify accuracy. These procedures ensured daily dosage information for each medication prescribed.

Secondary outcome measures

Secondary outcome measures included psychiatric symptomatology, hospitalization, and medication side effects. Interviewers conducted assessments with study participants at baseline and 6 follow-up points: 2 weeks, 1 month, 3 months, 6 months, 9 months, and 12 months after condition entry, defined as the date the participant was informed of and began his or her randomized treatment assignment.

We used the Positive and Negative Syndromes Scale (PANSS) (18) to assess psychiatric symptoms. We obtained dates of inpatient hospitalization using a self-report calendar augmented by record review; we included information about hospitalizations 6 months prior to the baseline through study end.

To assess extra-pyramidal side effects, we used the Abnormal Involuntary Movement Scale (19) and the Simpson-Angus Extrapyramidal Side Effect Scale (20). We assessed sexual dysfunction using the Arizona Sexual Experiences Scale (21). We measured the perceived awareness of and distress from common side effects of antipsychotic medications using the Subjective Side Effect Rating Scale (22), and we asked participants additional questions regarding weight change (e.g., whether they had to get new clothes because their old clothes did not fit anymore, whether they were actively trying to gain or lose weight). We recorded the study participant's pulse, blood pressure, height, weight, waist and hip measurements, serum prolactin levels, lipid panels, and blood and urine glucose levels. For women, interviewers also used the urine samples to test for pregnancy at the 6- and 9-month interviews. Variables collected but not reported herein will be the subject of future reports.

We adapted Schooler and Kane's (23) research criteria for tardive dyskinesia (at least "moderate" movements in one or more body areas or at least "mild" movements in two or more body areas as rated on the Abnormal Involuntary Movement Scale) to identify instances of onset of tardive dyskinesia following condition entry. We defined possible new-onset EPS as an average increase of > 0.3 across items on the Simpson-Angus scale.

Rater training and reliability

Clinicians with at least masters degrees who had clinical experience with people with schizophrenia conducted all interviews. To maintain blinding, randomization occurred centrally. When the Project Director alerted Participating Sites of the random assignment, she reminded them not to discuss the randomization with the study raters. Further, all electronic files containing information about the randomized condition were password protected with a password known only to those research staff who were not blinded to the Study condition, and any paper documentation that included treatment assignment (e.g., the list of medications the phlebotomist used to label blood collection vials) was clearly marked "confidential, please do not share with raters". Following randomization, all medical record reviews and blood shipments were conducted by research staff who were not blind to the Study condition. In addition to these procedures, we asked raters to begin all phone conversations with study participants by reminding them not to mention the medications they were taking, how many medications they were taking, whether they changed medications, or whether they received a shot or took a pill (or both). Further, at the beginning of each follow-up interview and before sections where unblinding was most likely to occur, the rater read scripted language reminding the participant that the rater could not know the medication(s) that the participant was taking (as above). In rare cases where raters became aware of the medication the participant was taking, the interview was stopped and resumed with a different rater who was blind to the study condition.

Before being certified to conduct assessments, raters participated in an initial training on the SCID, PANSS, and AIMS conducted by staff of the Schizophrenia Trials Network. Raters

also completed an annual re-training to maintain certification. Both the initial training and the annual refresher training involved rating a combination of clinical vignettes (for the SCID) and video recordings (for the PANSS and AIMS) and achieving threshold scores for each instrument.

Data analysis

Paralleling the analytic approach of Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) Phase 1 (24) and subsequent analyses of the impact of switching antipsychotic medications using CATIE data (25), we used Kaplan-Meier and Cox regression to examine the impact of Staying on polypharmacy compared to Switching to monotherapy on time to all-cause treatment discontinuation including covariates of gender and race (Caucasian versus non-Caucasian), because the groups differed significantly on these measures at baseline (Table 1). Similarly, we applied mixed models to examine the effect of Stay or Switch on study measures throughout the 6 month study period (i.e., during the period of protocol-driven treatment and excluding the naturalistic follow-up); independent variables included Group (Stay or Switch), Time (linear and quadratic), and Group by linear and quadratic Time with covariates of gender and race. We used intent-to-treat models for our primary analyses in which a significant Group-by-Time interaction would support the hypothesized difference. Secondarily, we also examined two as-treated models, one that excluded individuals who had discontinued their assigned treatment condition entirely and one in which data from such individuals were excluded only following discontinuation of the assigned treatment. For participants assigned to the Stay condition, discontinuation of the assigned treatment was defined as discontinuing either of the antipsychotics taken at baseline (adding a 3rd antipsychotic also would have been deemed a discontinuation of the baseline treatment, but this did not occur). For participants assigned to the Switch condition, discontinuation of the assigned treatment was defined as switching to a second monotherapy agent after first discontinuing one of the two antipsychotics taken at baseline or adding an additional antipsychotic (i.e., returning to polypharmacy).

Results

Table 1 shows the baseline values for the Stay and Switch groups for various measures. On average, the groups were receiving comparable doses of antipsychotics at study entry, with a trend for higher baseline dosages among those switched to monotherapy (Table 1; 26–28), and these dosages were within the ranges recommended by the Schizophrenia PORT guidelines (6). The most common baseline polypharmacy combinations were quetiapine +risperidone (n=25), quetiapine+First Generation Antipsychotic (FGA) (n=25), risperidone +FGA (n=23), olanzapine+FGA (n=22), ziprasidone+FGA (n=12), aripiprazole+quetiapine (n=11), olanzapine+risperidone (n=10), and other combinations totaling 10 or fewer individuals each (n=39). While the study's inclusion criterion required the presence of either residual symptoms or side effects, every participant who entered the trial experienced residual symptoms, irrespective of whether they also experienced any side effects.

Of the 127 individuals randomized, 114 (56 Stay, 58 Switch) began their assigned treatment. Of those, 8 (14%) assigned to Stay on Polypharmacy discontinued their assigned treatment (6 changed to a different polypharmacy combination; 2 discontinued one of the 2 assigned medications). Reasons for discontinuation included increased symptoms (n=2), participant preference (n=1), and side effects (n=5; n=2 with weight gain, 1 with EPS, 1 with diabetes, and 1 with unspecified side effects). Among those assigned to Switch to Monotherapy, 18 (31%) discontinued their assigned treatment (12 returned to their baseline polypharmacy combination, 3 began a different polypharmacy combination, 1 began monotherapy with an agent other than one of the 2 baseline medications, 1 began monotherapy with one of the

baseline agents and changed to monotherapy with the second baseline agent after 90 days, and 1 began to taper one of the two agents but did not complete the taper following an increase in symptoms). Reasons for discontinuation included increased symptoms (n=11), participant preference (n=6), and side effects (n=1 with hyperlipidemia).

Overall, of the 58 individuals assigned to Switch to Monotherapy who began the treatment, 12 (21%) elected to discontinue quetiapine, 10 (17%) risperidone, 9 (15%) olanzapine, 8 (14%) haloperidol, with the remaining 19 (33%) discontinuing other antipsychotics (each at less than 10% of discontinuations). Among the 30 polypharmacy combinations that consisted of a first- and a second-generation antipsychotic, the second-generation antipsychotic was continued slightly over half of the time (18 of 33 such combinations; 5/10 for quetiapine+FGA; 5/9 for olanzapine+FGA; 3/7 for risperidone+FGA; 2/4 for ziprasidone +FGA, and 3/3 for aripiprazole+FGA).

Time to all-cause treatment discontinuation (defined as time to change in antipsychotic medication for any reason) was shorter for participants assigned to Switch from polypharmacy to monotherapy than for those assigned to Stay on Polypharmacy, and switching from polypharmacy to monotherapy resulted in treatment discontinuation significantly more often than continuation of polypharmacy (Kaplan-Meier Mantel-Cox $X^2(1)=4.55$, p = .03; Figure 1). This difference remained significant above and beyond gender and race in Cox regression analyses (Wald $X^2(1)=4.22$, p =.04; Figure 1).

The Stay and Switch groups did not differ significantly on psychopathology over time in random regression models (Table 2; Figure 2), whether measured as total PANSS, total PANSS positive items, or the 5 factors defined by Marder and colleagues (29). The sole exception to this was a statistically significant (p=.03) difference for the factor “uncontrolled hostility” (each group had scores very near “no symptoms” on this scale, the groups differed by less than 0.4 points on the 24 point scale—a small effect size (.17) and unlikely to be clinically significant-- with the change over time favoring the Stay condition). Nor did the two groups differ with respect to incidence of sexual side effects (Table 2), new-onset EPS (n=12 in each group; 30% of those assigned to Stay and 29% of those assigned to Switch), or new-onset tardive dyskinesia (19% of those assigned to both Stay (n=8) and Switch (n=9)). Groups did not differ with respect to the likelihood of being hospitalized for psychiatric reasons, which was uncommon in each group (5 (8%) and 7 (11%) hospitalized at least once during the first 6 months for the Stay and Switch groups, respectively), nor did the groups differ with respect to time to first hospitalization for psychiatric reasons. Groups also did not differ with respect to total hospitalizations (medical and psychiatric).

Those assigned to Switch to Monotherapy significantly decreased their body mass index (BMI) compared to those assigned to Stay on Polypharmacy, who increased their body mass index (Table 2; Figure 3; Group by Time interaction, p = .05). On average, individuals assigned to Switch to Monotherapy lost 0.50 BMI (SD = 2.32 BMI) over 6 months, and individuals assigned to Stay on Polypharmacy gained 0.28 BMI (SD = 2.31 BMI) over 6 months. Each of the secondary (as-treated) models were consistent with the findings of the primary intent-to-treat analyses.

Discussion

This is the first report of a randomized trial examining the effectiveness of switching individuals with schizophrenia from antipsychotic polypharmacy to monotherapy. In terms of the primary outcome measure (time to all-cause discontinuation), remaining on polypharmacy was superior to switching to monotherapy-- reflecting greater likelihood of dissatisfaction by the patient or physician with the switch to antipsychotic monotherapy than

with staying on polypharmacy. Those who discontinued one antipsychotic were more likely to change their treatment and do so sooner than those who stayed on polypharmacy, with the overwhelming majority of these individuals simply going back to their previous polypharmacy regimen.

These findings are consistent with an open-label, non-randomized study of discontinuing polypharmacy. That study reported that, of 44 individuals who were tapered from polypharmacy to monotherapy, over half (54%) remained stable, 23% showed improvement, and 23% fared more poorly when switched to monotherapy (15).

In typical randomized trials, patients in each treatment arm begin a new medication, and response to the new medication emerges over time. In double-blinded trials, neither patient nor prescriber knows which medication is being taken. Because this was an open-label trial with blinded raters, both patients and psychiatrists knew that changes in symptoms or side effects in the Stay condition, while temporally associated with beginning the trial, were *not* due to medication changes. In contrast, for individuals in the Switch condition, both patients and prescribers knew that any such differences *were* temporally related to a medication change, and some may have taken, correctly or not, this temporal relationship to be causality. Said another way, it may be that the participants (and their prescribers) in the Switch condition were more inclined to attribute alterations in feelings/symptoms/side effects to the change in medication than were those in the Stay condition, who may have experienced these same alterations as part of normal variations in illness and medication response. This may have prompted individuals in the Switch condition to change medications sooner than they would have had they experienced the same changes in symptoms or side effects while continuing on a familiar polypharmacy regimen. Hence, time to all-cause discontinuation may be a more appropriate measure for double blinded trials where prescriber and participant expectations are controlled and where both study conditions include newly started medications. Rater blinding helped protect rating scales from these potential biases, and the single difference seen (PANSS hostility score favoring the Stay condition), while statistically significant, is unlikely to be clinically significant.

The results of this study support the reasonableness of policy makers and others constructing prescribing guidelines that encourage trials of antipsychotic monotherapy for individuals receiving antipsychotic polypharmacy, with the caveat that individuals should be free to return to the polypharmacy combination if an adequate trial on antipsychotic monotherapy proves unsatisfactory (1). The study demonstrated that such switches to monotherapy can be accomplished successfully for the majority of patients—69% of those switched to monotherapy remained on monotherapy for the 6 month study protocol. On average, switches to monotherapy resulted in loss of body mass, no worse symptom control, and no increase in hospitalization. At 6 months, individuals randomly assigned to switch to monotherapy had lost an average of 0.5 BMI units. This weight loss is in contrast to the average gain of 0.3 BMI units at 6 months for those who continued on polypharmacy. This net difference of 0.8 BMI units corresponds to a net of 5 pounds for an individual who is 5’7” tall and weighs 203 pounds—the mean baseline height and weight for individuals in this study. Treatment guidelines recommend considering a change in antipsychotic medication when an individual gains one BMI unit (30). In the analyses, we controlled for the significant baseline group differences in gender and race to allow assessment of staying versus switching independent of race and gender. Hence we did not explore whether race or gender moderated treatment outcomes. Similarly, though not significant, the slight trend of higher baseline dosages among people assigned to monotherapy may have influenced the results.

Participants were drawn from the broad pool of individuals on antipsychotic polypharmacy for whom a medication change is a clinically viable option. As data from the CATIE trial illustrated, it is difficult to improve upon staying on the currently prescribed single antipsychotic (25). Data from CATIE were useful in comparing the relative effectiveness of staying on a given antipsychotic monotherapy to switching to a different monotherapy. The results of the present study indicate that most patients with continuing psychopathology while taking two antipsychotic medications are well able to tolerate switching from polypharmacy to monotherapy, and they accrue the metabolic benefits associated with weight loss while avoiding the side effects and other burdens of taking an additional medication.

While the present study says nothing about whether starting polypharmacy is a good idea in the first place, the study makes clear that individuals on two antipsychotics may benefit from discontinuing one of the medications.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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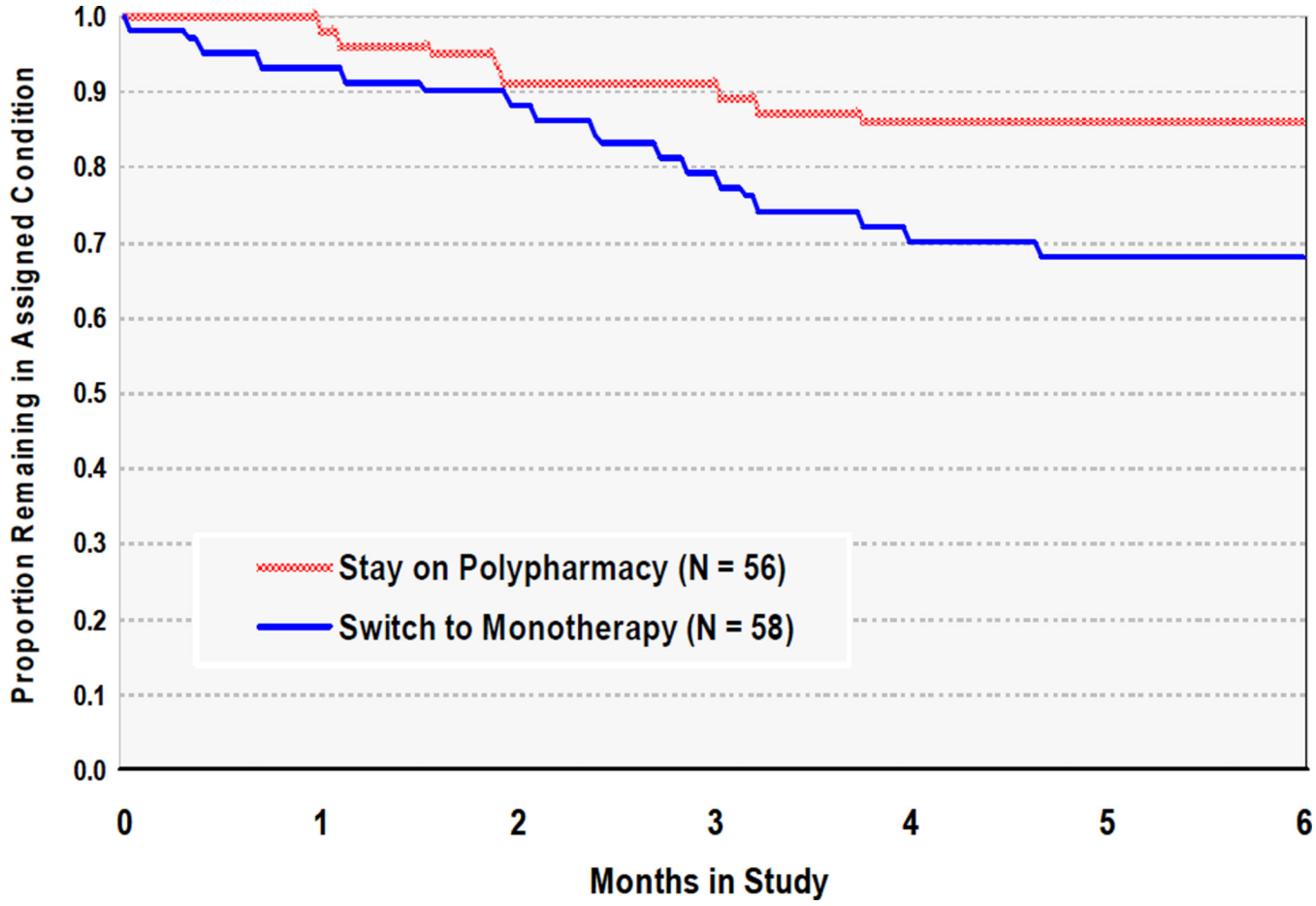

FIGURE 1. Time to Medication Change for Any Reasona

[a] Kaplan-Meier Mantel-Cox $X^2(1)=4.55$, p =.03. In Cox Regression analyses, Treatment Group remained significant above and beyond gender and race (Wald $X^2(1)=4.22$, p =.04). Group identifiers note Ns at baseline.

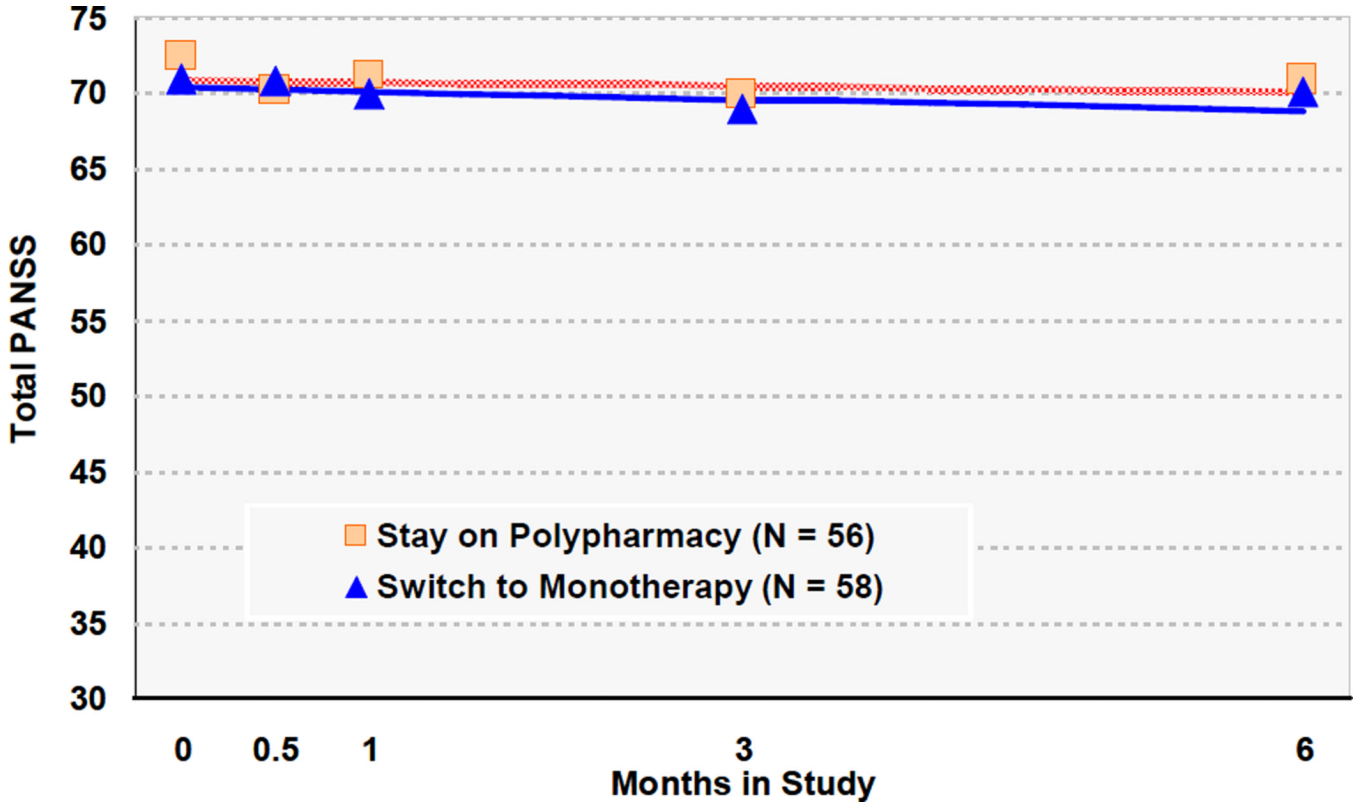

FIGURE 2. Total PANSS Score Through Timea

[a] No significant Group by Time interaction (p=.71);
Also no significant effects for Gender (p=.58), Race (Caucasian versus non-Caucasian, p=.63) or Time (p=.60). Group identifiers note Ns at baseline.

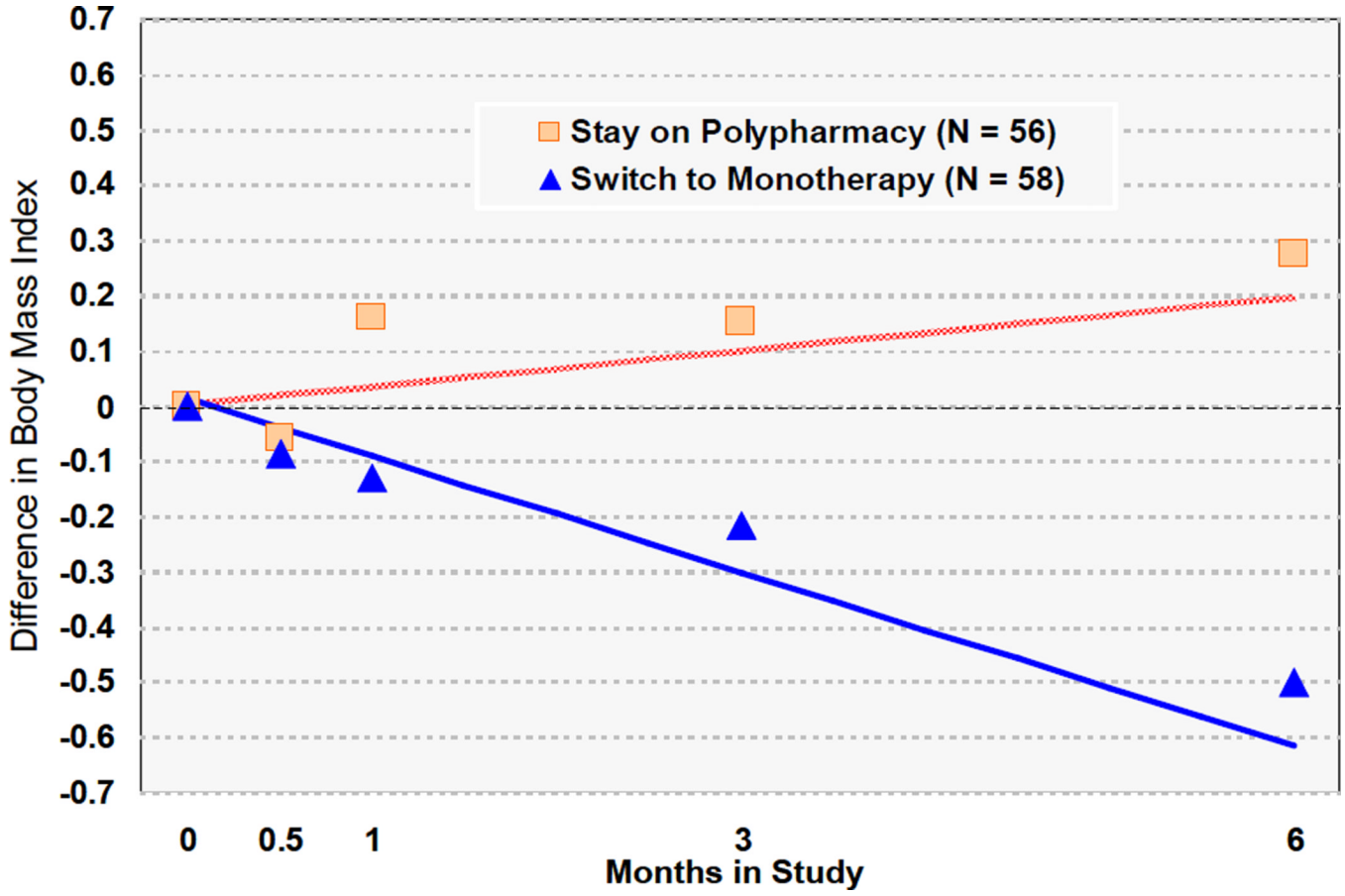

FIGURE 3. Difference in Body Mass Index Through Timea

[a] No Significant Group by Time interaction (z = −1.95, p = .05). Group identifiers note Ns at baseline.

TABLE 1

Demographic and other characteristics of the two groups at baseline

	Randomly Assigned to Stay on Polypharmacy (N=62)		Randomly Assigned to Switch to Monotherapy (N=65)				
	N	**%**	**N**	**%**	**chi-square**	**df**	**p**
Male Gender	34	55%	50	77%	6.9	1	.01
Caucasian Race	27	44%	42	65%	5.7	1	.02
Latino Ethnicity	9	15%	5	8%	1.4	1	.23
TD Present	15	25%	10	15%	1.8	1	.18
EPS Present	18	30%	19	29%	0.0	1	.97
	Mean	**SD**	**Mean**	**SD**	**t-test**	**df**	**P**
Baseline Total Dosage (haloperidol equivalent)[a]	6.1	3.4	7.2	5.5	−1.9	113	.06
Baseline Total Dosage (chlorpromazine equivalent)[a]	325.8	184.4	387.8	296.7	−1.9	113	.06
PANSS Total	72.4	14.3	70.9	14.5	0.6	124	.57
Body Mass Index	31.9	7.7	31.4	7.5	0.4	123	.69
Arizona Sexual Experiences Scale Total	17.2	6.0	18.0	6.2	−0.7	108	.47

[a]Chlorpromazine and haloperidol equivalents were determined following the methods of Andreasen and colleagues (26); for medications without haloperidol equivalents, we converted these agents to chlorpromazine equivalents based on Gardner and colleagues (27) (for loxapine and paliperidone) and Kane and colleagues (28) (for long-acting injectable risperidone microspheres) and then converted back to haloperidol.

TABLE 2

Intent to Treat Random Regression Analysis of Secondary Outcome Measures for People with Schizophrenia-Spectrum Disorders in a Randomized Controlled Study of Staying on Antipsychotic Polypharmacy versus Switching to Antipsychotic Monotherapy

PANSS Total Score

Predictor	Regression Coefficient	SE	z	p-value	95% CI
Intercept	71.15	2.43	29.23	0.00	66.38 – 75.92
Switch Group	−0.49	2.51	−0.19	0.85	−5.40 – 4.43
Time	−0.13	0.25	−0.52	0.60	−0.62 – 0.36
Group by Time	−0.13	0.35	−0.37	0.71	−0.82 – 0.56
Male	−1.42	2.60	−0.55	0.58	−6.51 – 3.67
Caucasian	1.20	2.45	0.49	0.63	−3.60 – 5.99

Arizona Sexual Experiences Scale

Predictor	Regression Coefficient	SE	z	p-value	95% CI
Intercept	18.40	1.09	16.88	0.00	16.26 – 20.53
Switch Group	1.27	1.14	1.11	0.27	−0.97 – 3.51
Time	0.01	0.10	0.12	0.90	−0.19 – 0.21
Group by Time	−0.06	0.14	−0.41	0.68	−0.34 – 0.22
Male	−2.79	1.16	−2.40	0.02	−5.07 – 0.51
Caucasian	1.31	1.10	1.19	0.23	−0.85 – 3.46

Body Mass Index – Change from Baseline

Predictor	Regression Coefficient	SE	z	p-value	95% CI
Intercept	−0.01	0.10	−0.05	0.96	−0.21 – 0.20
Switch Group	0.00	0.11	0.01	0.99	−0.21 – 0.21
Time	0.03	0.05	0.65	0.52	−0.07 – 0.13
Group by Time	−0.14	0.07	−1.95	0.05	−0.28 – 0.00
Male	−0.09	0.11	−0.79	0.43	−0.30 – 0.12
Caucasian	0.13	0.10	1.26	0.21	−0.07 – 0.33