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Race and Long Acting Antipsychotic Prescription at a Community Mental Health Center: A Retrospective Chart Review

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Abstract

Objective—There has been concern that racial minorities are disproportionately prescribed Long Acting Injectable (LAI) antipsychotic drugs.

Method—Comprehensive administrative data and clinician survey were used to identify all patients with a DSM-IV diagnosis of schizophrenia who received long acting antipsychotic prescriptions from July 2009 to June 2010 at a community mental health center. Charts were reviewed retrospectively to validate long acting antipsychotic prescription (i.e. medication, dosage, etc.) and merged with administrative data from all center patients documenting socio-demographic characteristics (i.e. age, race, gender), and co-morbid diagnoses. The subsample of LAI patients was compared to non-LAI patients diagnosed with schizophrenia for the same period using bivariate chi square, t-tests, and multivariate logistic regression.

Results—White patients were significantly less likely to receive long acting antipsychotic prescriptions than minority patients (OR=.52, $p<.0001$), i.e. non-whites were 1.89 times more likely to receive such drugs. Age, gender, and co-morbid diagnoses, including substance abuse, were unrelated to LAI prescription and race/ethnicity was not associated with use of specific agents (haloperidol decanoate, fluphenazine decanoate, or risperidone microspheres) ($p=.73$).

Conclusion—Minorities are more likely than other patients with schizophrenia to receive long acting injection antipsychotics, suggesting that their prescribers may consider them less adherent to antipsychotic prescriptions. Other reasons such as increased risk for violence are also discussed.

Keywords

Race; long acting antipsychotic; decanoate; consta; schizophrenia

Introduction

There has been growing concern about racial disparities in the delivery of health care¹ and in mental health care in particular.² As noted in the Surgeon General's 1999 report: "Even more than other areas of health and medicine, the mental health field is plagued by disparities in the availability of and access to its services. These disparities are viewed

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readily through the lenses of racial and cultural diversity, age, and gender” (p. vi).² Some disparities represent decreased use of effective services, while others may result from services with potentially adverse implications, such as excessive hospitalization³ or treatments representing social control such as emergency commitment.⁴

One controversial disparity is use of long acting injectable (LAI) antipsychotics in the treatment of minorities with schizophrenia. In a 1985 paper that initiated research on racial disparities in LAI prescription, Price et al found that African-Americans were more likely to receive LAIs than whites (OR=2.2, $p<.001$), African-Americans younger than 45 years were more likely to receive LAIs than white peers (OR=1.5, $p=.04$), and African-Americans older than 45 years were more likely receive LAIs than white peers (OR=5.0, $p=.04$).⁵ More specifically African-Americans have also been found to receive LAIs more than whites in inpatient settings (OR=2.6, $p<.02$)⁶, community mental health centers (OR~1.5, $p < 0.01$)⁷, among multi-state outpatient service providers (OR=2.91, $p<.0001$)⁸, and within a large prospective cohort of patients specifically treated for schizophrenia spectrum disorders (OR=1.53, $p<.007$).⁹ White patients have also been found to receive less LAI prescriptions than non-whites in outpatient settings (OR=0.47, $p<0.005$).¹⁰

More recent studies however, have challenged the notion that race is associated with LAI prescription. For example, a 2008 study found that patient race did not predict LAI prescription and that non-white psychiatrists initiated LAIs more than white psychiatrists (OR=2.11, $p=.002$).¹¹ Studies from the US (2003)¹² and the UK (2009)¹³ have also failed to find associations with minority race and LAI prescription.

This study seeks to update research on race and LAI prescription in three ways. First, it re-examines the relationship between race and LAI use at the same community mental health center in which this issue was first studied in 1985.⁵ Second, while many earlier studies only examine first-generation LAIs, this study reports data from 2010, 7 years after risperidone microspheres was approved by the FDA. This study may thus elucidate whether practice patterns have changed with the introduction of the first second-generation LAI. Finally, previous studies characterize race in dichotomous terms as black and white. Considering that the United States 2010 Census shows that Hispanics and Latinos comprise the second largest ethnic group after whites¹⁴, our study differentiates them from other minorities. We thus hope to examine changes in the use of LAI treatment for minorities over a 25-year period.

Method

Sample

A list of all patients receiving services from the Connecticut Mental Health Center (CMHC) from July 1, 2009 to June 30, 2010 was obtained from center administrative records and those carrying an intake diagnosis of schizophrenia or schizoaffective disorder were identified. The CMHC is collaboratively administered by the Yale University Department of Psychiatry and the Connecticut Department of Mental Health and Addiction Services and provides mental health services to the indigent and uninsured in the greater New Haven area. This study was approved by the Institutional Review Boards of the CMHC and the Yale University School of Medicine.

Measures

Since the administrative records of the CMHC did not include prescription information, subjects receiving LAIs were identified in several ways. The CMHC provides services according to team, historically based around disorders (mood, anxiety and personality, psychosis), social services (housing), acuity (triage), and language (Hispanic Clinic). All team leaders were approached and all clinicians were asked to identify patients on their

caseload prescribed LAIs in 2010. Next, the CMHC pharmacy was asked to provide a list of all patients receiving LAIs and nursing orders for each team were reviewed for LAI injection orders from outside pharmacies. This was done to counter gaps in clinician recall and to incorporate all patients on LAIs with diagnoses other than schizophrenia and schizoaffective disorder. A master list of all patients identified as using LAI antipsychotics was compiled, and all medical records were reviewed to validate these indications.

Data were abstracted using a form (available on request) that recorded current LAI antipsychotic, all oral psychotropic medications, and all previous and current oral antipsychotic trials. All diagnoses were recorded from either the initial admission work up or the mandatory semi-annual treatment review, whichever was most recent.

Analysis

Patients diagnosed with schizophrenia or schizoaffective disorder and prescribed LAIs in the previous year were compared to those who were not prescribed LAIs on age using t-tests and on gender, race/ethnicity and co-morbid diagnoses using chi square tests. Multivariable logistic regression was then used to identify factors that were associated with LAI prescription independent of other significant factors. A chi square test was used to evaluate racial differences in the use specific agents (haloperidol decanoate, fluphenazine decanoate, or risperidone microspheres).

Results

The total CMHC caseload from July 1, 2009 to June 30, 2010 was 2,770 patients. The total number of patients on LAIs was 124 patients. Of this group, 102 of 124 patients (81.5%) of all patients on LAIs received a diagnosis of schizophrenia or schizoaffective disorder. Other diagnoses included bipolar I disorder, most recent episode manic (4%); psychosis NOS (4%); major depressive disorder (1.6%); mood disorder NOS (0.8%); and bipolar I disorder, most recent episode depressed (0.8%). We could not find diagnostic information for the remaining 7.3% of the patients who had proceeded beyond intake but whose clinicians had not completed the most recent semi-annual review. We restrict our analyses to the patients diagnosed with schizophrenia or schizoaffective disorder given the small samples of other diagnoses.

Of 901 patients diagnosed with schizophrenia or schizoaffective disorder at CMHC during our study interval, 102 (11.2%) were prescribed LAI antipsychotics. Only 12 of these 102 patients (11.8%) received their prescriptions from the CMHC.

Whites and patients diagnosed with co-morbid dementia or anxiety disorder were significantly less likely to be prescribed LAI antipsychotics while African-Americans were more likely to be prescribed such drugs (Table 1). There were no differences on age, gender, or any other diagnostic category, including drug or alcohol abuse. On logistic regression only white race was significantly related to LAI use (OR=.52, $p<.007$, 95% CI=0.33–8.3). Put differently, minorities were 89% more likely to be prescribed LAI medication (OR=1.89, 95% CI=1.21–2.98). Race/ethnicity was not associated with use of specific agents (haloperidol decanoate, fluphenazine decanoate, or risperidone microspheres) among LAI users (chi square=3.59, $df=6$, $p=0.73$).

Discussion

Among all patients at the CMHC diagnosed with schizophrenia or schizoaffective disorder, those prescribed LAIs were compared with those who were not. We found that non-white race was the sole, independently significant variable associated with LAI prescription. Our

odds ratio of 1.89 is slightly lower than 2.2 in the original study by Price et al at this institution but essentially unchanged after 25 years.⁵ Our sample showed no independent effect for age, gender, or diagnosis on multivariable logistic regression analysis. When compared to other community mental health centers with odds ratios of 1.5⁷, our odds ratio is slightly higher. The CMHC's population of urban patients with serious mental illness without health insurance may explain the significant association between race and LAI selection.

However, compared to Price et al⁵ whose study showed that 80 of 397 (20.2%) patients on maintenance antipsychotic medications were receiving LAIs, our study showed that 102 of 901 (11.2%) of patients diagnosed with schizophrenia or schizoaffective disorder received LAIs. Sampling strategies may result for this difference. Price et al enrolled only those patients receiving outpatient maintenance medications. Though they do not define "maintenance" with an exact time interval, there may be a higher use of LAIs in this group if previous regimens toward stability did not succeed. On the contrary, we included all patients on LAIs from all CMHC services, including those in acute and inpatient settings. In addition, Price et al compared LAI use against all patients receiving antipsychotic medications whereas we compared LAI use for all patients, and specifically those with a diagnosis of schizophrenia or schizoaffective disorder. Since there is not equivalence between these groups, the proportion of patients on LAI would be expected to change.

Furthermore, Price et al noted that patients 45 years old or younger and male patients were more likely to receive LAIs than women when controlled for age and race. These differences did not obtain in this study. We cannot explain this shift away from age and gender even though race still played a significant role in the selection of patients for LAIs. This may be attributed to differences in the sampling strategies as noted above.

Our study has several limitations. First, we use administrative data from the CMHC that categorizes race according to monolithic categories such as "White," "African-American," "Asian," and "Native American/Pacific Islander." Hispanics and Latinos are classified with multiracial patients. However, we believe that our findings still remain valuable given that race remains a significant variable for LAI use despite important demographic shifts over the past 30 years. Second, race information in our administrative database was collected by assigned clinicians, and discussions with CMHC clinicians reveal wide variation in how race is recorded: some clinicians assign a race to the patient based on phenotype (a patient looks "White" or "African-American") whereas others ask patients how they identify themselves. This may affect results, particularly if clinician and patient reports do not match. Nevertheless, we are not aware of a standardized way of reporting racial data in the psychiatric literature, suggesting a need for methodological consensus in this area. Third, patients were diagnosed clinically, not through structured instruments used in clinical research. Objections could be raised that our data do not allow for finer analyses based on disorder severity and that we did not conduct pre-trial diagnostic assessments to test the proficiency of the clinicians, the diagnoses, and racial determinations used by clinicians, factors most relevant to this kind of clinical epidemiological study. However, these indicators accurately reflect the beliefs and diagnoses used by clinicians in real world practice and are especially relevant to a community setting which is the focus of this study. Finally, we collected information based on snowball sampling, i.e. team leaders identified clinicians with patients on LAI. While we validated all reports and all nursing orders against clinical records, patient charts may introduce data errors if some prescriptions were not recorded.

This study suggests the need for further research on the relationship between race and LAI prescription. In a commentary on Shi et al's study¹⁰, Glazer observed that depot medications

are typically prescribed to uninsured patients from racial and ethnic minority groups or to those with criminal histories.¹⁵ These groups have been typically disenfranchised in the United States, suggesting that psychiatrists may need to devise better solutions for treatment adherence among minority patients. Recent guidelines have called for increased use of LAIs in cases of non-adherence to oral antipsychotics.¹⁶ Although current data on adherence or non-adherence of racial/ethnic groups at CMHC are not available, previous data from our institution show that monolingual Hispanics (mostly Puerto Ricans) and African-Americans have lower rates of medication adherence than whites.¹⁷ Non-whites¹⁸ and blacks¹⁹ in particular have been found to have lower rates of treatment adherence in schizophrenia. Indeed, unemployment²⁰ and low educational level²¹, especially since education correlates with insight²², have been identified as correlates for treatment non-adherence in schizophrenia. Thus, perceived non-adherence may explain a part of the racial disparity we observed. Racial and ethnic minorities with lower unemployment and education levels may be perceived as at higher risk for non-adherence and in need of LAI prescription. Mental health professionals and their patients would therefore benefit from developing specific methods to encourage adherence in minorities through strategies such as psycho-education or case management.

However, were treatment non-adherence the only factor in prescriber selection of LAIs, the overall rate of depot medication prescription might be expected to be higher, regardless of race. Other factors beyond perceived non-adherence may contribute to the racial disparity we observed. African-Americans have consistently received lower doses of clozapine²³ and higher doses of LAIs²⁴ for reasons unexplained by symptom severity. We do not insinuate that LAIs should be avoided in all circumstances for ethnic minorities when adherence is an issue. In fact, it can be argued that LAIs were appropriate, and perhaps preferred, in some cases. Instead, on the basis of this varied, and at times contradictory, literature, we would recommend that clinicians optimize clinical engagement by considering effective psychotherapy modalities (individual, family, group) and oral antipsychotic regimens at effective doses before prescribing LAIs. Our study suggests the need for several additional avenues for research such as the decision making of prescribers around LAI, patient satisfaction with LAI prescription, and the extent to which prescribers and patients view LAI as a temporary or permanent treatment. Such studies may help to comprehend and potentially correct racial disparities for all patients with psychotic disorders.

In the meantime, it is worthwhile to consider potential processes for quality improvement. Studies beyond community mental health centers have identified risk factors other than race for antipsychotic non-adherence such as prior non-adherence, recent illicit drug or alcohol use, prior treatment with antidepressants, and patient-reported, medication-related cognitive impairment.²⁵ Clinicians could screen for co-morbid substance use, depression, or medication side effects in all patients to offer interventions promoting adherence. Clinicians could also simultaneously ask whether they have allowed enough time for an optimum treatment effect in all patients on oral antipsychotics before resorting to LAIs. A careful examination of patient and clinician factors leading to non-adherence in general may serve to reduce racial disparities in LAI use.

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Characteristics of patients with a diagnosis of schizophrenia or schizoaffective disorder at the time of analysis, by LAI status, July 2009 to June 20

Table 1

	LAI (n=102)		No LAI (n = 799)		All (n=901)		Statistical Significance		
	N (mean)	Percent/sd	N (mean)	Percent/sd	N (mean)	Percent/sd	Chi sq/t	df	p
Age, y	45.6	11.2	45.8	12.9	45.8	12.7	0.16	899	0.87
Gender									
Male	65	63.73%	488	61.08%	553	61.38%	0.27	1	0.60
Race									
White	26	25.49%	316	39.55%	342	37.96%	7.59	1	0.01
Black	54	52.94%	330	41.30%	384	42.62%	5.01	1	0.03
Hispanic	21	20.59%	140	17.52%	161	17.87%	0.58	1	0.45
Other	1	0.98%	13	1.63%	14	1.55%	0.25	1	0.62
Co-morbid DSM Diagnosis									
Dementia	1	0.98%	0	0.00%	1	0.11%		1	
Bipolar	3	2.94%	0	0.00%	3	0.33%	0.38	1	0.54
Major depressive disorder	1	0.98%	10	1.25%	11	1.22%	0.06	1	0.81
PTSD	3	2.94%	24	3.00%	27	3.00%	0.00	1	0.97
Any alcohol code	11	10.78%	104	13.02%	115	12.76%	0.40	1	0.52
Any drug code	28	27.45%	158	19.77%	186	20.64%	3.25	1	0.07
Any anxiety code	0	0.00%	29	3.63%	29	3.22%	3.83	1	0.05
Other	1	0.98%	8	1.00%	9	1.00%	0.25	1	0.62

LAI