A Pilot Study of Cultural/Racial Differences in Patient Perspectives on Long-Acting Injectable Antipsychotics for the Treatment of Schizophrenia

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Abstract

Objective: Long-acting injectable (LAI) antipsychotics improve treatment outcomes in patients with schizophrenia but are often reserved for only the most severely affected or nonadherent. Studies show cultural/racial differences in prescribing. This pilot study examined prescriber-patient interactions and cultural/racial differences in perceptions of LAIs among patients. **Methods:** A linguist analyzed 120 prescriber-patient conversations representing selected patient cultural/racial subgroups (European American, African American, Latino American; n=40 each) to identify similarities and differences in conceptualization and attitudes toward LAIs. **Results:** Of 35 LAI-naive patients offered LAIs, 9% (3/35) responded favorably, 46% (16/35) were neutral/passive, and 46% (16/35) had concerns or viewed LAIs as unfavorable. Among LAI-naive patients, favorable or neutral/passive responses were reported for 50% (7/14) of European Americans, 63% (10/16) of African Americans, and 40% (2/5) of Latino Americans. The majority of LAI-naive patients (57% [20/35]) accepted LAI prescriptions, including 53% (17/32) of those who initially were neutral/passive or refused treatment (European American, 42% [5/12]; African American, 53% [8/15]; Latino American, 80% [4/5]). Fifty-seven percent (68/120) of patients expressed treatment goals. Goals of positive/negative symptom control were associated with positive attitudes toward LAIs while patients with goals focused on control of anxiety and insomnia tended to have negative attitudes toward LAIs. Latino-American patients who expressed treatment goals seemed more focused on discomfort control (67% [12/18]); goals of European Americans and African Americans were more equally distributed. **Conclusions:** Equal numbers of LAI-naive patients had unfavorable/concerned or neutral/passive attitudes toward treatment; relatively few patients responded favorably. The limited sample size precludes cultural/racial-specific conclusions.

Key Words: Antipsychotic Agents, Attitudes, Community Mental Health Services, Cultural Background, Depot Preparations, Ethnicity, Office Visits, Patients, Race, Schizophrenia

Introduction

Multiple patient, prescriber, caregiver, and environmental issues must be considered when treating patients with schizophrenia to improve antipsychotic treatment adherence, avoid relapse, and attain successful outcomes. Improving adherence reduces the healthcare burden and is associated with better clinical outcomes (1). Long-acting injectable (LAI) antipsychotic medications can improve adherence, improve outcomes, and help to avoid relapse, as shown in naturalistic settings (2-4).

However, LAIs are underused and often reserved for only the most severely affected or nonadherent patients (5) despite the fact that approximately 40% to 60% of patients are either partially or entirely nonadherent to their antipsychotic treatment regimen (6). The IMS Multinational Integrated Data Analysis System estimates that only 8% of pa-

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Submitted: December 17, 2013; Revised: February 6, 2014;
Accepted: April 24, 2014

Clinical Implications

Long-acting injectable antipsychotics (LAIs) can help improve treatment adherence in patients with schizophrenia, resulting in improved outcomes for those patients (5). There are various factors that contribute to and might undermine a patient's decision to initiate LAI treatment. By critically evaluating conversations between prescribers and patients with schizophrenia regarding LAIs, we were able to gain increased insight into patient-prescriber perspectives on LAI treatment and how such perspectives may differ by cultural/racial identity of the patient. Overall, this analysis found that prescribers are most effective when using a multiple-strategy approach in presenting the LAI option to patients, and this can be particularly important during interaction with the majority of patients who present with neutral/passive attitudes toward LAIs. Findings from this study suggest that considering cultural/racial differences when offering LAIs to patients with schizophrenia may help facilitate and encourage patient acceptance of LAI treatment and circumvent culturally/racially influenced negative attitudes regarding LAIs that act as barriers to treatment. Cultural/racial differences in patient perspectives regarding LAIs may also be confounded by severity of schizophrenia and desire to control specific schizophrenia symptoms. Moreover, consideration of cultural/racial diversity may allow prescribers to gain a more complete picture of the treatment scenario, thereby supporting their efforts to tailor treatment to individual patients, facilitate earlier treatment success, and help avoid the accumulating disability that occurs with multiple relapses.

tients with schizophrenia receiving treatment in the United States have been prescribed LAIs (written communication from Ray Lansigan, Rosetta, February 13, 2013). In contrast, although global data on LAI use among patients prescribed an antipsychotic is limited, the estimated use is about three times that of the United States. Previous surveys have found LAI use varies between 22% and 36% of patients prescribed an antipsychotic in the United Kingdom, Belgium, Hong Kong, and Australia (7-10). Guidelines recommend offering LAI treatment as an option to patients where appropriate, when nonadherence is a significant issue, or when patients express a preference for LAI treatment (5).

Serious mental illness affects many different cultures/races in the United States (11). A report from 2010 indicated that the prevalence of a psychiatric disorder in the previous twelve months was 21% for non-Hispanic whites, 16% for Hispanics, 15% for African Americans, and 9% for Asian Americans (11). Although these differences in the incidence of psychiatric disorders are not considerable, substantial differences have been found between cultural/racial groups regarding approaches to overall mental health treatment in the United States (11).

With respect to use of LAI antipsychotics, studies have found differences in prescription patterns among different cultural/racial groups. Earlier U.S. studies found that African-American patients with schizophrenia had a higher likelihood of receiving LAIs in emergency rooms (12) and outpatient care settings (13) than other cultural/racial groups. African-American and Hispanic patients have also been shown to be more likely to receive LAIs than white patients in inpatient settings (14). More recent studies examining prescription data have found that African-American and other non-white patient populations were more likely to receive LAIs than European-American patients (15, 16). Underlying causes for these disparities have not been fully studied, however.

Patients receiving LAIs typically have a history of medication nonadherence (17), and African-American and Hispanic patients in particular have shown lower medication adherence rates to psychotropic medications than European-American patients (18). This has led some investigators to speculate that certain cultural/racial groups are recipients of LAIs more often because prescribers consider them to be at higher risk for nonadherence (15). It is also possible that disparities in LAI use are mediated not only by prescriber attitudes but also by culturally influenced patient attitudes toward LAIs, with such attitudes either facilitating or serving as barriers to treatment.

Patient cultures significantly influence treatment decision-making for both the healthcare provider and the patient. Autonomous decision-making by the patient is highly important in some cultures, whereas physician authority is revered more in other cultures. For example, Hispanic patients were found to be more likely to allow their physicians to take the dominant role in decisions about chronic pain than non-Hispanic whites (19). Hence, because some patients report feeling a loss of control over treatment when accepting LAIs (20), such treatment might not feel appropriate for a patient who strongly values autonomous decision-making, although joint decision-making may be an acceptable alternative. Patient understanding and acceptance of injection-based therapies varies by culture as well (21). In many countries (e.g., Nicaragua, Indonesia, and Thailand)—where prescribers typically use injections to prevent and treat serious illnesses—injection-based medicines are often perceived as powerful and scientifically advanced because delivery is directly into the bloodstream (21, 22).

Studies indicate that some patients refuse offers of injection-based medication based on fear of injection-site pain or general fear of needles, injections, or blood (20, 23). Aside from disliking injections, some patients are reluctant to accept LAI treatment because it makes them feel controlled or coerced into treatment (24) and/or feel that LAIs are associated with more shame and stigma than oral antipsychotics (20). These opinions may also vary depending on the cultural/racial perspectives of the patient. Acquiring greater insight into cultural perspectives of patients with schizophrenia—in conjunction with awareness of patient attitudes toward medication—may help prescribers better tailor treatment and realize greater success in achieving individual therapeutic goals.

Given that LAIs substantially improve treatment outcomes (adherence and relapse prevention) in naturalistic settings in patients with schizophrenia (2-5), there is a need to better understand the impact of patient perspectives, particularly from a cultural/racial perspective, on the acceptance and use of LAIs. This U.S.-based pilot study in patients with schizophrenia analyzed patient and prescriber in-office conversations to investigate differences between three cultural/racial groups (European American, African American, and Latino American) in attitudes toward medications in general and toward LAIs in particular.

Methods

Psychiatrists were selected from a panel previously identified to participate in ethnographic research, and psychiatric nurse practitioners (NPs) were selected and recruited by telephone. Participants were distributed across the United States. Psychiatrists and NPs (prescribers) completed a screening questionnaire to ensure qualification for the study. Prescribers provided study information and acquired HIPPA informed consent forms from all participating patients and were compensated for recording patient visits. The study protocol was approved by the independent New England Institutional Review Board. Patients/caregivers did not receive compensation.

Psychiatrists and NPs were selected if ≥50% of their practice occurred in a community mental health center, they treated patients with schizophrenia, and they had prescribed LAIs for some patients.

All participating patients had a primary diagnosis of schizophrenia, were being considered for treatment reevaluation, and were from one of three cultural/racial groups: European American, African American, and Latino American. Patients were excluded if they had a primary diagnosis other than schizophrenia, were non-English speaking, or could not provide informed consent because of cognitive impairment. Disease severity was assessed and clinically rated (mild, moderate, or severe) by the prescriber for each patient at the time of the conversation. Conversations between patients (or caregivers) and prescribers were recorded during treatment visits between February 2009 and July 2012.

A linguist/cultural anthropologist reviewed and analyzed transcribed conversations between prescribers and patients with schizophrenia or their caregivers with respect to attitudes toward medications in general and LAIs specifically. Discussion was categorized according to eleven main predetermined topics occurring during a typical prescriber visit for patients with schizophrenia (positive symptoms; negative symptoms; other mood disorder symptoms and comorbidities; non-psychiatric comorbidities; treatment; side effects; compliance; behavior modification and counseling; schizophrenia diagnosis, disease history, and education; life events and other causes of schizophrenia; and small talk).

The method of constant comparison (25) was used to identify themes and patterns of language use among individuals within a cultural/racial group. Constant comparison is a qualitative method that structures analysis of conversational dynamics, lexicon, themes, and meaning across a corpus of data as well as within cohorts. Individual conversations were compared sequentially to identify similarities and differences within a cohort. Subsequently, themes and patterns of language were compared and contrasted across the three cultural/racial groups to identify similarities and differences in LAI conceptualization and attitudes.

Patient and caregiver treatment goals were also assessed based on their primary concern of treating either the positive/negative symptoms of schizophrenia or sleep, anxiety, and other related conditions (e.g., mood dysregulation) that are not primary symptoms of schizophrenia. Primary concerns were identified based on frequency, immediacy, and emphasis of mention. For example, if a patient mentioned concern about positive symptoms first and continued to mention it several times during the conversation, then positive symptoms were identified as the patient's primary concern.

To determine whether participation in decision-making varied by cultural/racial group, patients' question-asking style (frequency, direct, indirect, or assertive) and assertion of choice (whether patients stated a preference or not) were identified. All of these conversational characteristics were compared among cultural/racial groups and any differences were noted.

Results

Prescriber-Patient Conversation Characteristics

Treating prescribers consisted of 33 psychiatrists and 7 NPs, each with 17 to 20 years of clinical practice experience. Corresponding prescriber ethnicity was not captured in this

Table 1 Patient and Prescriber* Characteristics by Patient Cultural/Racial Group

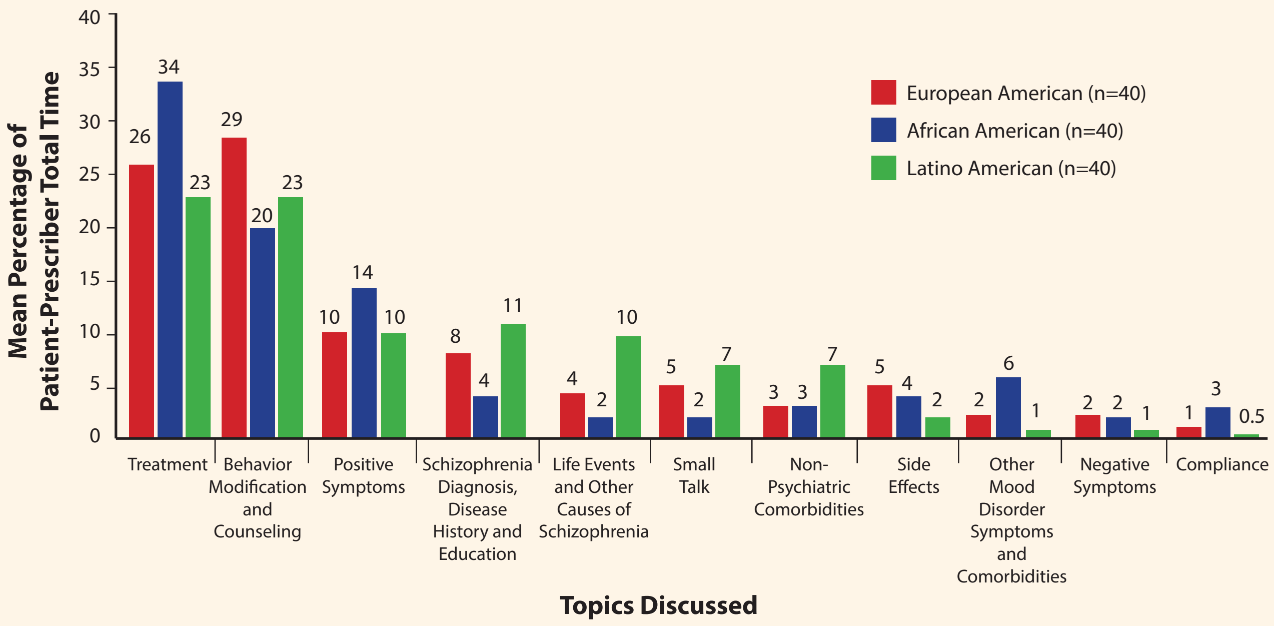
Characteristic	European American (N=40)	African American (N=40)	Latino American (N=40)
Prescriber years in practice, mean	17.1	20.1	20.4
Conversations, n	40	40	40
With psychiatrist	35	34	37
With nurse practitioner	5	6	3
Patients, n	40	40	40
Men, n (%)	25 (62.5)	20 (50)	22 (55)
Women, n (%)	15 (37.5)	20 (50)	18 (45)
Mean (SD) age, y	41.8 (14.1)	41.4 (12.9)	42.0 (14.5)
Time since diagnosis, n (%)			
>10 y	26 (65)	14 (35)	22 (55)
5–10 y	4 (10)	10 (25)	8 (20)
1–5 y	8 (20)	8 (20)	3 (7.5)
6–12 mo	2 (5)	1 (2.5)	1 (2.5)
0–6 mo	0	1 (2.5)	1 (2.5)
Unknown	0	6 (15)	5 (12.5)
Previous psychiatric hospitalization, n (%)	34 (85)	29 (73)	31 (78)
Treatment history and discussion stratification, n (%)			
LAI-naive with discussion of LAIs as an option†	14 (35)	16 (40)	5 (12.5)
Currently taking LAIs‡	15 (37.5)	13 (32.5)	10 (25)
Currently taking oral antipsychotics without discussion of LAIs as an option§	11 (27.5)	11 (27.5)	25 (62.5)
Schizophrenia severity, n (%)			
Severe	16 (40)	20 (50)	12 (30)
Moderate	22 (55)	14 (35)	25 (62.5)
Mild	2 (5)	6 (15)	3 (7.5)

LAI=long-acting injectable. *Prescriber ethnicity was not collected in this study. †LAI-naive patients who discussed an LAI treatment option during the study visit. These patients had no previous experience with LAIs; 13 were currently on oral antipsychotics and 22 had terminated pharmacotherapy either on their own or per the direction of their physician. ‡Patients currently taking LAIs; 18 of these patients were taking a concomitant oral antipsychotic and 20 were taking LAI monotherapy. §Patients currently taking oral antipsychotics who did not discuss an LAI treatment option during the study visit; 9 of these patients had received an LAI in the past and 38 were LAI-naive.

study. A total of 120 conversations from 120 patients with schizophrenia (European American, n=40; African American, n=40; and Latino American, n=40) were captured. Patient schizophrenia severity ranged from well controlled to poorly controlled, but patients were not so severely affected by disordered thought and speech patterns that conversations could not be analyzed.

Patient and prescriber characteristics categorized by patient cultural/racial group are presented in Table 1. Most patients (56% [67/120]) were men and had a ≥10-year history of schizophrenia, with the exception of the African-American group (50% [20/40] men; 65% [26/40] with a <10-year history of schizophrenia or unknown time since diagnosis). More European-American patients had previous

Figure 1 Topics Discussed in the Prescriber-Patient Visit by Cultural/Racial Group*



*Total percentages for each group will not total 100% if some of the language/discussion did not fall under one of the predetermined topics.

psychiatric hospitalizations (85% [34/40]) compared with African-American (73% [29/40]) and Latino-American (78% [31/40]) patients. All groups were similar in mean age (41.4–42.0 years). Prescriber-rated disease severity differed by culture/race. More patients in the African-American group were rated as severe (50% [20/40]) compared with the European-American (40% [16/40]) and Latino-American (30% [12/40]) groups. Latino-American patients were more frequently rated as moderately affected by schizophrenia (62.5% [25/40]) than European-American (55% [22/40]) or African-American (35% [14/40]) patients. Of the 120 prescriber-patient conversations, 88% (106/120) were with psychiatrists and 12% (14/120) were with NPs.

Patients were stratified into three different categories based on treatment history and treatment discussions during the study visit (see Table 1):

1) LAI-naive patients who discussed an LAI treatment option during the study visit (29% [35/120]). These patients had no previous experience with LAIs; 13 were currently on oral antipsychotics and 22 had terminated pharmacotherapy either on their own or per the direction of their physician.

2) patients currently taking LAIs (32% [38/120]); 18 of these patients were taking a concomitant oral antipsychotic and 20 were taking LAI monotherapy.

3) patients currently taking oral antipsychotics (39% [47/120]) who did not discuss an LAI treatment option during the study visit; 9 of these patients had received an LAI in the past and 38 were LAI-naive.

For each of the three cultural/racial groups, the main focus of the conversations consisted of treatment choices and behavior modification/counseling (see Figure 1). Very little time was spent discussing compliance, negative symptoms, comorbidities, or side effects. Slightly more time was spent discussing life events and other causes of schizophrenia, diagnosis, disease history, and education. Positive symptoms were discussed most frequently. Although the sample sizes were small, topics such as schizophrenia treatment choices and other mood disorders were discussed more with the African-American group than the others and behavior modification and counseling was more prevalent in the European-American group than in the African-American or Latino-American group. It should be noted that the specific percentage of conversation time regarding LAIs was not captured.

Prescriber-Patient Conversations Regarding LAIs

In conversations in which LAI-naive patients were offered LAI treatment (35 of 120 [29%] conversations), responses were categorized as favorable (indicating LAI

Table 2 LAI-Naive Patient Responses to LAI Treatment Offers and LAIs Subsequently Prescribed

LAI-Naive Patients	Response to LAI Offer, N (% of LAI-Naive Patients)			Prescribed LAIs, N (% of Response Category)		
	Favorable	Neutral/ Passive	Unfavorable/ Concerned	Favorable	Neutral/ Passive	Unfavorable/ Concerned
European American, n=14 (%)	2 (14)	5 (36)	7 (50)	2 (100)	1 (20)	4 (57)
African American, n=16 (%)	1 (6)	9 (56)	6 (38)	1 (100)	5 (56)	3 (50)
Latino American, n=5 (%)	0	2 (40)	3 (60)	0	1 (50)	3 (100)
Total, n=35 (%)	3 (9)	16 (46)	16 (46)	3 (100)	7 (44)	10 (63)

LAI=long-acting injectable.

Table 3 LAI-Naive Patient Reasons for Favorable or Unfavorable Responses

Response Rationale	European American (N=14)	African American (N=16)	Latino American (N=5)
LAI favorable response	2[†]	1	0
Compliance benefits	2	---	---
Extended/consistent efficacy	1	1	---
LAI unfavorable response	7	6[‡]	3
Fear of needles	3	4	---
Efficacy concerns	1	2	---
Unclear*	3	---	1
Side-effect concerns	---	1	---
Generalized fear of treatment	---	1	---
Fear of mental clouding	---	---	1
Dosing logistics or administration	---	---	1

LAI=long-acting injectable. *Patient gave no stated reason for an unfavorable response.
[†]1 patient cited both benefits. [‡]2 patients cited 2 reasons each for LAI refusal in their visit.

acceptance), neutral/passive, or unfavorable/concerned (indicating LAI refusal) (see Table 2). Initial agreement to take LAIs was expressed by only a few individuals (3 of 35 [9%]). Other patients reported that initially they had a neutral/passive response to the option or that they refused to take an LAI (16 of 35 [46%] in each category).

Of the 35 LAI-naive patients offered LAIs, more than half (57% [20/35]) were prescribed LAIs. Overall, more than half (17 of 32 [53%]) of the patients who initially were neutral/passive or refused eventually accepted an LAI prescription. In examining the different cultural/racial groups, less than half of the European Americans (5 of 12 [42%]), slightly more than half of the African Americans (8 of 15 [53%]), and most of the Latino Americans (4 of 5 [80%]) who initially were neutral/passive or refused eventually accepted an LAI prescription (see Table 2).

The reasons provided for initial LAI acceptance or rejection varied between the three cultural/racial groups (see Table 3). Patients agreeing to take an LAI cited either compliance benefits or extended/consistent efficacy or both as the rationale for accepting LAI treatment. Patients refusing an offer of LAI treatment cited fear of needles, concerns regarding efficacy, side effects, generalized fear of treatment, fear of mental clouding, and/or dosing logistics/administration as their reason(s) for refusal. Some patients stated no reason for refusal; hence, their rationale for refusal was classified as "unclear." No differences in questions asked, assertion of LAI choice, or decision participation were identified among the different cultural/racial groups with respect to level of patient participation in treatment decision-making. Although the sample sizes were small, the European-American and African-American concerns were similar, whereas Latino Americans did not describe a fear of needles or concerns of efficacy as reasons to refuse LAI treatment.

Specific treatment goals were evident in most conversations with European-American (63% [25/40]) and African-American (62.5% [25/40]) patients and almost half of Latino-American patients (45% [18/40]; see Table 4). Patients expressed two types of treatment goals for themselves: controlling positive/negative symptoms and controlling symptoms of discomfort (e.g., insomnia and anxiety). Patient goals were more focused on discomfort control in the Latino-American group than in the European-American and African-American groups. Patients with mild or moderate disease severity demonstrated more ordered thought patterns in conversations than those with disease rated as severe and tended to want to control positive/negative symptoms of schizophrenia; those with disease rated as severe were more focused on controlling discomfort concerns (e.g., insomnia and anxiety).

Table 4 **Patient Goals for Treatment**

Patients Expressing a Treatment Goal (N=68)	Positive/Negative Symptoms Control* N (%)	Discomfort Control† N (%)
European American, n=25	13 (52)	12 (48)
African American, n=25	12 (48)	13 (52)
Latino American, n=18	6 (33)	12 (67)

*Positive/negative symptom control was characterized by preference for in-clinic treatment; greater functionality/better controlled disease; stated desire to start/restart/switch to an LAI; use of mechanistic metaphors ("If you get off kilter [out of balance] with the medicine, it doesn't work for you.") and medical language register ("I want to try, have you heard of that new Seroquel, the XL or the XR? It's supposed to be time release."); and self-monitoring talk ("I don't even know if it's really worn off … my energy level is still really low.").

†Discomfort control was characterized by preference for self-medication (including drug/alcohol use); stated fear of needles for some patients; infrequent use of medical register; and, lack of self-monitoring talk.

Treatment goals were associated with attitudes toward LAIs. Patients focused on positive/negative symptom control typically expressed positive attitudes toward LAIs whereas discomfort control was associated more with refusal to start or restart an LAI. Patients concerned with treating positive symptoms of schizophrenia expressed satisfaction with LAIs and oral medications based upon how well these agents controlled those symptoms. Those who were concerned with treating insomnia and anxiety were more likely to reject LAIs, although these patients tended to value LAIs and oral medications for how well they seemed to help with anxiety or better regulate sleep.

Other Barriers to LAI Acceptance Among Patients

Dislike of needles was more frequently stated by patients concerned with controlling symptoms of discomfort than by patients focused on controlling positive symptoms of schizophrenia. In addition, dislike of needles was slightly greater in prescriber conversations with African-American patients (12.5% [5/40]) than in conversations with European-American patients (10% [4/40]) and substantially greater than in conversations with Latino-American patients (2.5% [1/40]). African-American patients did not usually state reasons for dislike of needles. In the following conversation between a physician and an African-American patient, it was evident that the physician assumed the patient was refusing LAI treatment because of a fear of pain from the needle, even though the patient hinted that his concern was that the injection might negatively affect him:

> Physician: "Have any of the doctors ever discussed this with you, that there is this possibility of using an injectable medication?"
> Patient: "No. What is it for?"
> Physician: "… it's for the voices, for what we call the psychosis ..."
> Patient: "No, I don't think I want to try that."
> Physician: "Why not?"
> Patient: "Because … um, it might mess me up."
> Physician: "No, no, or it might help you a lot. Men are afraid of shots, isn't it? Is that the issue? Men are afraid of needles."

Addressing Barriers to LAI Acceptance Among Patients: Prescriber Strategies to Encourage LAI Use

During conversations with LAI-naive patients, prescribers employed a variety of strategies to encourage patients to accept LAIs. Prescribers were most effective in persuading patients when they used multiple strategies and were least effective when only discussing the simplicity and efficacy of LAIs.

In 31% (11/35) of conversations with LAI-naive patients, prescribers used a vaccine analogy when describing LAIs. Thus, by comparing LAIs to vaccinations for diseases, prescribers imply that the needle is essentially benign and prevents disease. This was the only approach that differed by cultural/racial group. The vaccine analogy was used in conversations with 1 European-American patient, 7 African-American patients, and 3 Latino-American patients. There were no other differences observed by either treatment orientation or culture/race in the tendency of prescribers to employ specific strategies, which strategy was used, or overall strategy effectiveness.

In 43% (15/35) of conversations, prescribers used protection language in addition to the vaccine analogy ("… nowadays people take a vaccine for flu, for example, and it protects them against all sorts of diseases"). Other strategies used by prescribers included emphasizing efficacy and simplicity (43% [15/35]: "If you are agreeable, it's going to be just the injection … only [an] injection every 2 weeks … you don't have to be worried about 'Well, did I take [my tablets]?' "; using a protection theme with protective language (31% [11/35]: "I'm almost pleading with you … in [the] near future, the court system might step in and make decisions for you … I don't want to go there … I want to stop that from happening"); and, using empathy, equity, and partnership/therapeutic alliance (17% [6/35]: "If you think that an LAI is a good idea, let's discuss it more … who is your therapist?" The strategy used least by prescribers to encourage patients to accept LAI treatment was a paradoxical approach ("… I think you should go in the hospital but you're not going to agree to that …").

Discussion

This pilot study used 120 prescriber-patient conversations to examine the influence of different cultures/races (European American, African American, and Latino American) on attitudes toward LAIs. Using a qualitative approach, the study revealed several important findings that may be helpful in the clinic and provide direction for future research:

1) overall prescriber-patient interactions were similar across cultural/racial groups in that there were no observed difference in questions asked by patients, assertion of treatment choice, or patient participation in treatment decisions;

2) patients provided reasons for refusal that can be used as a checklist for prescribers to address when encountering patient concerns in presenting the LAI option (fear of needles, generalized fear of treatment, fear of mental clouding, concerns regarding efficacy, side effects, dosing administration logistics); positive symptoms were discussed more frequently with patients, and very little of the conversation time was spent discussing medication adherence, negative symptoms, comorbidities, or side effects that might be barriers to LAI use;

3) prescribers were effective in persuading just more than half (57% [20/35]) of LAI-naive patients to take LAIs;

4) interestingly, among Latino Americans who were initially neutral/passive or refused LAI therapy, 80% (4/5) agreed to take an LAI compared with 53% (8/15) of African Americans and 42% (5/12) of European Americans in those categories;

5) across all three groups, patients with mild schizophrenia had goals of controlling positive/negative symptoms and were more positive toward LAIs, whereas patients with severe schizophrenia focused more on discomfort control and were more likely to refuse the offer of an LAI. A previous study showed that patients presenting greater psychopathology and disorganized thinking were significantly more likely to receive LAI treatment, although patient attitudes were not assessed (26);

6) there was some evidence that a vaccine analogy was used more often with African-American patients, although, overall, prescribers did not seem to tailor specific approaches to address the differences that we observed. Prescribers were most effective when using a multiple-strategy approach consistent with findings that multiple reasons are expressed for refusing LAIs.

In terms of clinical relevance, the study highlighted some general issues to consider in prescriber-patient interactions when discussing the LAI option. Patients with schizophrenia across cultural groups behaved similarly in terms of their level of participation in treatment decision-making. The majority of LAI-naive patients across groups had either a neutral attitude or refused treatment when initially presented with the LAI option, yet 57% (20/35) of all LAI-naive patients were eventually prescribed LAIs. These findings suggest that there is room for improvement in the general approaches taken when presenting the LAI option to patients across cultural/racial groups. Encouraging patient participation and increasing time spent addressing patient concerns about LAIs may reduce barriers to LAI acceptance for all patient groups. Taking into account the severity of the patient's schizophrenia and expressed treatment goals may provide a clinical signpost indicating that increased efforts will be required for patients with more severe disease and for those who are focused on discomfort control rather than on controlling positive/negative symptoms.

This study is intended to provide an initial descriptive analysis of cultural/racial differences with regard to perceptions of LAI use and was not designed to draw cultural/racial-specific conclusions. Keeping this in mind, there were a few differences that can be described among the groups, and these may serve as direction for future research.

More African-American and Latino-American than European-American LAI-naive patients were prescribed an LAI after discussions with prescribers in our study. In addition, the percentage of patients with a "neutral" response to the idea of LAI treatment was larger for LAI-naive African-American and Latino-American patients than it was for European-American patients, suggesting that these racial/ethnic groups may be more open to engaging in discussion about the advantages and disadvantages of LAIs. These findings are supported by previous prescription data studies suggesting that African-American and non-white patients are more likely to receive LAIs than white patients (15, 16). However, more European Americans than African Americans or Latino Americans in our study were currently taking an LAI, which underscores the need for further studies to better understand differences in antipsychotic prescribing trends between cultural/racial groups.

More than twice as many Latino-American than European-American or African-American patients in the analysis were taking oral antipsychotics, and no Latino-American LAI-naive patient responded favorably to LAIs when the option was first presented. However, although the sample size was small, Latino-American LAI-naive patients had the highest rate of eventually accepting an LAI prescription (4 of 5 [80%]). It is possible that lack of awareness or education regarding the LAI option contributes to an initial refusal. Latino-American patients more often were rated as having moderately severe schizophrenia, had treatment goals that were less evident, and when evident, were more focused on discomfort control. From a clinical perspective, assisting Latino-American patients in identifying longer-term goals beyond immediate discomfort might be necessary and could lead to additional therapeutic successes. It should also be noted that fear of needles was voiced substantially less often during patient-prescriber conversations with Latino-American patients than with European-American and African-American patients and was not expressed as a reason for refusal, suggesting this may not be as significant a barrier for Latino-American patients.

We found prescribers to be more successful in discussing the LAI option when using a multiple-strategy approach to address the multiple patient concerns that may arise. However, considering alignment of communication strategies with concerns of specific patients may increase success when presenting the LAI option. The use of a vaccine analogy more often with African Americans in this analysis may be an example of misalignment. A previous study of urban, public health clinic patients found that African-American respondents were less likely to receive flu vaccines than non-African Americans and expressed less agreement that vaccines can prevent disease and are safe (27). Some studies suggest that African-American concerns about vaccines are related to being uncomfortable with or distrusting the government (e.g., with respect to the Tuskegee syphilis study) (28, 29).

Opportunities for enhanced discussion in prescriber-patient conversations may also be missed. Mood disorder symptoms were discussed the least with Latino-American patients in this initial analysis, although these patients were focused more on controlling discomfort from anxiety and insomnia than were European-American and African-American patients. Discomfort control may be an appropriate Latino-American cultural focus in prescriber-patient interactions; for example, a Mexican subsection of the Latino-American group has embraced a cultural model of schizophrenia ("Nervios"), which could result in an emphasis on anxiety and insomnia (30). Dislike of needles may also be a clinical cue to continue discussion beyond initial resistance, particularly with African-American patients.

It is crucial that prescribers keep this multiple-strategy technique in mind when they present the option of initiating LAI treatment to patients with schizophrenia, especially for patients who are new to LAI treatment. A survey study of outpatients showed that 87% of patients with schizophrenia already treated with LAIs would choose to continue using LAIs (31), and this finding was corroborated by a later systematic review that identified multiple studies in which patients receiving LAIs expressed a preference for LAIs versus oral medications (20). Together, these studies suggest that once patients are acclimated to LAIs, it is likely that they will continue with treatment; however, initiating LAI treatment is a hurdle that first must be overcome by patients and prescribers. Using a multiple-strategy approach—considering cultural/racial differences and the treatment focus of patients—may increase prescriber success in these initial interactions with patients.

The present study is limited by several factors. First, much of the information obtained was qualitative, from a relatively small sample, and there were no formal statistical analyses performed. A larger-scale study with quantifiable variables and statistical power would be useful to help objectively identify differences between cultural/racial groups and approaches to help prescribers and patients make more informed treatment decisions about use of LAI antipsychotics. Data regarding subject clinical variables, prescriber ethnicity, and caregiver perspectives, and specific LAIs were not collected. Initiation of LAI treatment has been found to be determined by a combination of factors related to the patient (caregiver), prescriber, treatment, and treatment setting (32). Further, it has been shown that psychiatrists who are non-white are more likely to initiate LAI treatment (32). Future studies should investigate the interaction of cultural/racial differences with disease severity and also assess the potential for influence of prescriber culture/race on patient acceptance or refusal of LAI treatment.

In conclusion, LAIs can help improve treatment adherence in patients with schizophrenia, resulting in improved outcomes for those patients (5). There are various factors that contribute to and might undermine a patient's decision to initiate LAI treatment. By critically evaluating conversations between prescribers and patients with schizophrenia regarding LAIs, we were able to gain increased insight into patient-prescriber perspectives on LAI treatment and how such perspectives may differ by cultural/racial identity of the patient. Overall, this analysis found that prescribers are most effective when using a multiple-strategy approach in presenting the LAI option to patients, and this can be particularly important during interaction with the majority of patients who present with neutral/passive attitudes toward LAIs. Findings from this study suggest that considering cultural/racial differences when offering LAIs to patients with schizophrenia may help facilitate and encourage patient acceptance of LAI treatment and circumvent culturally/racially influenced negative attitudes regarding LAIs that act as barriers to treatment. Cultural/racial differences in patient perspectives regarding LAIs may also be confounded by severity of schizophrenia and desire to control specific schizophrenia symptoms. Moreover, consideration of cultural/racial diversity may allow prescribers to gain a more complete picture of the treatment scenario, thereby supporting their efforts to tailor treatment to individual patients, facilitate earlier treatment success, and help avoid the accumulating disability that occurs with multiple relapses.

Author Disclosures

In the past 12 months, Steven Potkin has had financial involvement including, but not limited to, research support and/or honoraria from Bristol-Myers Squibb, Johnson & Johnson, Lundbeck, Novartis, and Otsuka.

In the past 12 months, Rimal Bera has received research support from Otsuka America and has participated in speakers bureaus for AstraZeneca, Otsuka America, and Sunovion.

Anna Eramo is an employee of Lundbeck.

Gina Lau is an employee of Otsuka Pharmaceutical Development & Commercialization, Inc.

Acknowledgments

The authors would like to thank Verilogue (Horsham, PA, USA) for their substantial contributions to the conception and design of the study, acquisition of data, and analysis and interpretation of data. The research was funded by the sponsors, Otsuka Pharmaceutical Development & Commercialization, Inc. (Princeton, NJ, USA) and H. Lundbeck A/S (Valby, Denmark). We also thank Nicholas C. Stilwell, PhD, of Oxford PharmaGenesis Inc. (Newtown, PA, USA) and Brett D. Mahon, PhD, of C4 MedSolutions, LLC (Yardley, PA), a CHC Group company, for providing medical writing and editorial assistance under the direction of the authors. Otsuka Pharmaceutical Development & Commercialization, Inc., and H. Lundbeck A/S provided funding to Oxford PharmaGenesis Inc. and C4 MedSolutions, LLC for this assistance.

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