

# Positive views on antipsychotic long-acting injections: results of a survey of community patients prescribed antipsychotics

Shubhra Mace , Oscar Chak, Sharanjeet Punny, Daniel Sedough-Abbasian, Chirag Vegad and David M. Taylor

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## Abstract

**Background:** We aimed to assess patients' views about antipsychotic long-acting injections (LAIs).

**Methods:** We interviewed patients prescribed an antipsychotic (oral or LAI) in our community teams. In a subanalysis, responses were analysed for differences between patients currently receiving an LAI and those prescribed only oral medication.

**Results:** In total, 226 patients (57%) completed the study questionnaire. The majority agreed that LAIs ensured delivery of the right amount of medication and protection against hospital admissions (57% and 60%, respectively). A minority of participants were more concerned than not about the use of a needle (46%), pain from injection (48%) and the need to travel to receive the injection (34%). A majority expressed a preference for injection site (deltoid or gluteal) (65%) and clinic location (69%). A higher proportion of patients currently receiving an LAI compared with those prescribed oral medication thought an LAI was beneficial because this formulation obviated the need to: swallow tablets (63% versus 41%;  $p = 0.0013$ ), remember to take tablets daily (75% versus 51%;  $p = 0.0004$ ), remember tablets when away from home (72% versus 49%;  $p = 0.0008$ ). Current LAI users were more likely than those on oral treatment to agree that LAIs keep patients out of hospital (76% versus 44%;  $p = 0.0001$ ) and that the injection ensured delivery of the right amount of medication (71% versus 44%;  $p = 0.0002$ ). Women were more likely than men to prefer administration by a clinician of the same gender (34% versus 12%;  $p = 0.0001$ ).

**Conclusions:** In our study, a greater proportion of patients prescribed an LAI regarded LAIs as beneficial compared with those on oral medication.

**Keywords:** antipsychotic, depot, long-acting injection, patient survey

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## Introduction

Adherence to oral antipsychotic medication is known to be poor, with compliance rates estimated at around 40–50%.<sup>1–3</sup> Furthermore, many clinicians are not aware of the extent of their own patients' compliance with oral treatment.<sup>4,5</sup> Antipsychotic long-acting injections (LAIs) offer some assurance of regular drug treatment and are associated with lower relapse rates and hospital admissions.<sup>3,6,7</sup> However, despite their known benefits, prescribing

of LAIs remains low; prescribing rates in the UK are estimated to be around 30%.<sup>8,9</sup>

Various reasons have been proposed for the underuse of LAIs,<sup>10</sup> including clinician reluctance,<sup>11,12</sup> assumed patient objection to LAIs,<sup>13</sup> prescribers' suboptimal clinical knowledge and the limited availability of second generation (SGA) LAIs.<sup>14,15</sup> The use of LAIs is considered by many to be coercive and stigmatizing.<sup>13</sup>

Correspondence to:  
**Shubhra Mace**  
Maudsley Hospital,  
Pharmacy Department,  
Denmark Hill, London SE5  
8AZ, UK

Institute of Pharmaceutical  
Science, King's College,  
London, 5th Floor,  
Franklin-Wilkins Building,  
150 Stamford Street,  
London SE1 9NH, UK  
**Shubhra.mace@slam.nhs.uk**

**Oscar Chak**  
**Sharanjeet Punny**  
**Daniel Sedough-Abbasian**  
Maudsley Hospital,  
Pharmacy Department,  
Denmark Hill, London, UK

**Chirag Vegad**  
King's College Hospital,  
Pharmacy Department,  
Denmark Hill, London, UK

**David M. Taylor**  
Maudsley Hospital,  
Pharmacy Department,  
Denmark Hill, London, UK  
Institute of Pharmaceutical  
Science, King's College,  
London, UK

Informal observations from our own unit suggest that patients prefer oral medication and that many are reluctant to consider an antipsychotic LAI. However, published data report high patient satisfaction with LAIs.<sup>8,16–18</sup> In this study, we aimed to assess patients' views about antipsychotic LAIs, using a semi-structured questionnaire.

## Methods

All patients in four of the Trust's 'promoting recovery' community mental health teams were approached over a 4 week period in 2016 to complete a semi-structured questionnaire about their views on antipsychotic LAIs. Patients in 'promoting recovery' teams have an established diagnosis of a psychotic illness. The questionnaire asked patients to agree or disagree with certain statements about LAIs. The statements included the supposed benefits of LAIs, for example, the convenience or otherwise of not having to take a tablet daily and aspects of LAIs which may be of concern to some patients, for example, pain from the injection procedure. For the purpose of this survey, differences between individual drugs (LAIs and oral) were not emphasized.

All patients attending appointments were approached by one of four dedicated pharmacy staff in the reception areas of the teams. Patients were informed about the purpose of the survey, that responses would be anonymized and that no patient identifiable data would be collected or recorded. Patients were not selected in any way to complete the questionnaire and each patient had the opportunity to decline to participate. Patients who agreed to participate were asked if they were prescribed an antipsychotic medication. Any patient currently prescribed an antipsychotic and agreeing to take part was included in the survey. Pharmacy staff assisted patients in answering the questionnaire (they gave clarification to enable understanding of each question).

To maintain patient anonymity and to ensure that the study did not interfere with patients' current treatment plans we did not ask for any patient identifiable data, including details about patients' current or previous treatment. The only patient data recorded were gender and whether or not the patient was currently receiving an LAI or oral antipsychotic. Other data on medication, diagnoses and duration of illness were not recorded. Patients did not receive any reimbursement or inducement for completing the questionnaire.

In a subanalysis, responses were analysed for differences between patients currently receiving an LAI and those prescribed only oral medication.

The study was exempt from Research Ethics Committee approval and was approved by the trust drug and therapeutics committee. Patient consent was assumed for those who agreed to complete the questionnaire.

## Statistical analysis

Binary responses from the two groups (LAI versus oral antipsychotic) were analysed using Fisher's exact test. Responses from men and women were analysed for certain questions using Fisher's exact test.

## Results

### *Comparison between the responses from patients prescribed an LAI versus only oral medication*

During the study period 396 patients were approached to complete the questionnaire, of which 170 declined to take part. In total, 226 patients (57%) completed the questionnaire (Table 1, Table 2 and Figure 1). Of these, 110 patients were prescribed an LAI and 116 patients an oral antipsychotic medication.

### *Comparison between the responses from men (n = 138) and women (n = 88)*

Overall, there was no difference between men and women in their preference for the site of injection administration: 67% of men *versus* 63% of women expressed a preference for the injection site. Deltoid administration was preferred by 33% of men *versus* 39% of women and gluteal administration was preferred by 34% of men *versus* 24% of women. The proportion of men and women expressing a preference for the gender of the person administering the injection is shown in Figure 2.

### *Unprovoked patient comments*

During the course of the survey, patients informed us about their experiences, concerns and fears about LAIs. There were some common themes: patients of both sexes reported feeling embarrassed by the injection administration procedure. Women from certain cultures informed us that

**Table 1.** Responses to survey questions.

Questions	All patients (LAI and oral) ( <i>n</i> = 226)		
	Yes	No	Don't know
Do you consider the following aspects of an LAI beneficial?			
There is no need to swallow tablets	117 (52%)	105 (46%)	4 (2%)
There is no need to remember to take tablets daily	142 (63%)	77 (34%)	7 (3%)
There is no need to take tablets when away from home	136 (60%)	82 (36%)	8 (4%)
Other people cannot see what medication the patient is taking	103 (45%)	117 (52%)	6 (3%)
Do you think having an LAI:			
Ensures patients receive the right amount of the medication?	129 (57%)	87 (39%)	10 (4%)
Helps to keep patients out of hospital for longer?	135 (60%)	79 (35%)	12 (5%)
Provides an opportunity for patients to have regular contact with a healthcare professional?	133 (59%)	85 (38%)	8 (3%)
Do any of the following aspects of an LAI concern you?			
The needle	105 (46%)	120 (53%)	1 (1%)
Pain from the injection	108 (48%)	117 (51%)	1 (1%)
Regular travel to clinic for injection administration	76 (34%)	146 (65%)	3 (1%)
Do you have a preference for the site of injection administration?	147 (65%)	27 (12%)	52 (23%)
Do you have a preference for the gender of the person administering the injection?	67 (30%)	147 (65%)	12 (5%)
Do you have a preference for the location of the clinic where the injection is administered?	156 (69%)	49 (22%)	21 (9%)

injection administration is problematic for them because they are not permitted to expose parts of their body to men. Some patients were unsure about the competence of the healthcare professional to administer the injection, and some were concerned about contracting a blood-borne infection from the needle. In some cases, patients felt there was a lack of empathy and kindness amongst clinical staff during injection administration.

### Discussion

The majority of patients who participated in our survey agreed with most of the statements in the questionnaire about the benefits of LAIs, and

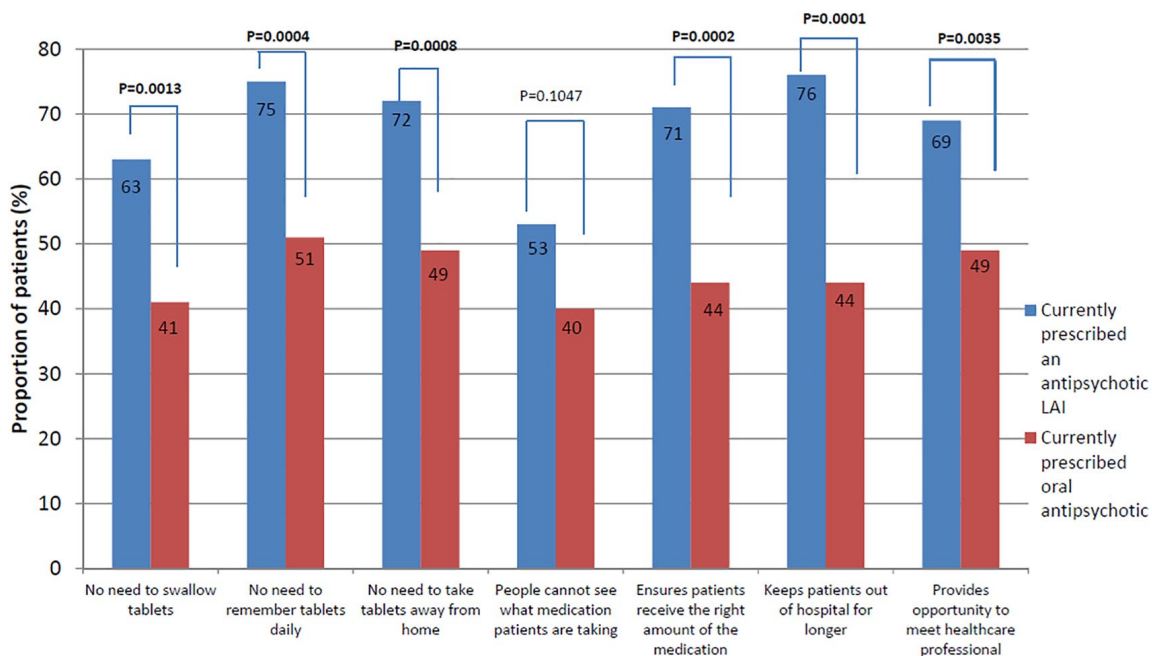
fewer patients were more concerned than not about aspects of the injection administration procedure, such as pain from the injection procedure. The majority of patients expressed a preference for the site of injection administration (gluteal or deltoid) and the geographical location of the clinic where the injection is administered. Women were more likely to express a preference for the gender of the person administering the injection, and more women than men preferred administration by someone of the same gender.

The survey revealed some important differences between the opinions of patients currently prescribed an LAI compared with those prescribed

**Table 2.** Comparison between the responses from patients prescribed an LAI versus only oral medication.

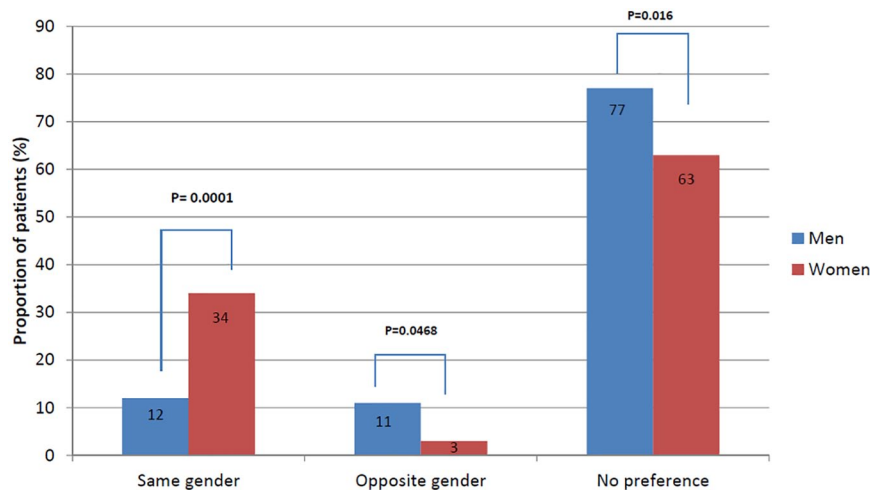
	Patients currently receiving an LAI (n = 110)			Patients currently prescribed an oral antipsychotic (n = 116)			p value (depot versus oral agree)
	Yes	No	Don't know	Yes	No	Don't know	
Do any of the following aspects of an LAI concern you?							
The needle	48 (44%)	62 (56%)	0 (0%)	57 (49%)	58 (50%)	1 (1%)	0.4231
Pain from the injection	53 (48%)	57 (52%)	1 (1%)	55 (47%)	60 (52%)	1 (1%)	1.0000
Regular travel to clinic for injection administration	30 (27%)	79 (72%)	1 (1%)	46 (40%)	67 (58%)	2 (%)	0.0476*
Do you have a preference for the site of injection administration?	82 (75%)	6 (5%)	22 (20%)	65 (56%)	21 (18%)	30 (26%)	0.0015*
Do you have a preference for the sex of the person administering the injection?	29 (26%)	79 (72%)	2 (2%)	38 (33%)	68 (59%)	10 (8%)	0.1851
Do you have a preference for the location of the clinic where the injection is administered?	83 (76%)	20 (18%)	7 (6%)	73 (63%)	29 (25%)	14 (12%)	0.1431

\*Significant p values.



**Figure 1.** Proportion of patients who agreed with the following benefits of a long-acting injection (LAI). Significant p values are shown in bold.

only oral medication. A higher proportion of patients receiving an LAI agreed with the benefits of LAIs stated in the questionnaire. The difference was numerically but not statistically



**Figure 2.** Proportion of men and women who expressed a preference for the gender of the person administering the injection. Significant *p* values are shown in bold.

significant for the response ‘other people cannot see what medication the patient is taking’. Fewer patients prescribed an LAI were concerned about having to travel to receive the injection. Patients prescribed an LAI were more likely to express a preference for the site of injection administration.

Previous studies have shown good patient satisfaction with LAIs,<sup>16–18</sup> and a better acceptance of the injection amongst current and previous recipients of LAIs compared with those who are LAI-naïve.<sup>4</sup> Other surveys have shown that patients prefer the formulation of medication they are currently prescribed.<sup>8,19</sup> Walburn and colleagues suggested that the inclusion in studies of patients taking oral medication could minimize such survey bias.<sup>16</sup> In this survey, we included responses from patients prescribed an LAI and oral medications.

Many clinicians consider LAIs to be stigmatizing and to be associated with more severe and frequent adverse effects than oral medication.<sup>20</sup> There is still the view amongst some prescribers that LAIs should not be used in first episode patients,<sup>21,22</sup> and that patients find LAIs less acceptable than oral medication.<sup>13</sup> It is worth noting that patients’ general views about medication may not correlate with their attitudes towards taking medication: in a study by Goldbeck and colleagues, more patients said they would, if given the choice, continue depot treatment compared with those who actually expressed a positive view of depots.<sup>23</sup> In practice, LAIs tend to be

prescribed for patients who are poorly compliant with oral medication. However, in our experience, they are rarely continued for those who fail to attend for regular injections and, thus, curiously, LAIs tend to be prescribed for patients who agree to the treatment, suggesting some degree of patient acceptability.

#### *Patient preferences*

Perhaps the most informative aspect of this survey was one we had not anticipated. Many patients volunteered information about their preferences and concerns without being specifically asked. In practice, patients are often offered the choice of LAI but not usually choices about the practical aspects of injection administration. We suggest that clinicians should, as a matter of routine, consider practical barriers to LAI initiation and continuation and aim to provide all patients the choice of gender of clinician administering the injection and the geographical location of the clinic, and, wherever possible, the site of injection administration (deltoid or gluteal). Patient concerns about clinician competence and the safety of the procedure should be anticipated and addressed.

#### *Limitations of the study*

Our survey was anonymous and we were careful to not undermine the patient–prescriber relationship or interfere with patients’ current treatment plans. For this reason, we felt unable to ask patients prescribed an LAI whether they were



happy to continue the injection or whether they would prefer to take oral medication. We were also not able to determine whether patients had previously been prescribed either an oral or LAI medication. For the purpose of the survey, LAIs were considered as a single group: individual differences between LAIs such as loading regimen and injection frequency, were not emphasized. Questionnaires were completed only by patients who consented to participate in our survey. It is possible that the patients who declined to participate may be importantly different to those who participated in the survey. It is also possible that participants modified their answers to the questions in response to being observed.

### Strengths of the study

Patients were aware that the responses to the questionnaires were anonymous and that professionals involved in their care would not be informed about any information provided. We believe therefore, that patients were able to be open and honest when answering the survey questions, without the fear of any consequences.

### Conclusion

In our study, a greater proportion of patients agreed with the benefits of LAIs and fewer patients were concerned about the practical aspects of the injection procedure. Patients currently prescribed an LAI were more likely to regard LAIs as beneficial compared with those on oral medication. There are important differences between the preferences of men and women for certain practical aspects of the injection procedure.

### Key points

- Clinicians should be aware that many patients express a positive view of LAIs.
- Patients should be involved in the choice about practical aspects of LAI administration: Patients should be asked if they have a preference for the gender of the person administering the LAI, the site of injection administration (deltoid or gluteal) and the geographical location of the clinic where the LAI is administered.

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### Conflict of interest statement

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### ORCID iD

Shubhra Mace  <https://orcid.org/0000-0001-9548-7533>

### References

1. Haddad PM, Brain C and Scott J. Nonadherence with antipsychotic medication in schizophrenia: challenges and management strategies. *Patient Relat Outcome Meas* 2014; 5: 43–62.
2. Cramer JA and Rosenheck R. Compliance with medication regimens for mental and physical disorders. *Psychiatr Serv* 1998; 49: 196–201.
3. Tiihonen J, Haukka J, Taylor M, *et al.* A nationwide cohort study of oral and depot antipsychotics after first hospitalization for schizophrenia. *Am J Psychiatry* 2011; 168: 603–609.
4. Heres S, Schmitz FS, Leucht S, *et al.* The attitude of patients towards antipsychotic depot treatment. *Int Clin Psychopharmacol* 2007; 22: 275–282.
5. Clayton CD, Veach J, Macfadden W, *et al.* Assessment of clinician awareness of nonadherence using a new structured rating scale. *J Psychiatr Pract* 2010; 16: 164–169.
6. Subotnik KL, Casaus LR, Ventura J, *et al.* Long-acting injectable risperidone for relapse prevention and control of breakthrough symptoms after a recent first episode of schizophrenia. A randomized clinical trial. *JAMA Psychiatry* 2015; 72: 822–829.
7. Taylor DM, Sparshatt A, O'Hagan M, *et al.* Effect of paliperidone palmitate on hospitalisation in a naturalistic cohort - a four-year mirror image study. *Eur Psychiatry* 2016; 37: 43–48.
8. Patel MX, De Zoysa N, Bernadt M, *et al.* Depot and oral antipsychotics: patient preferences and attitudes are not the same thing. *J Psychopharmacol* 2009; 23: 789–796.
9. Barnes T, Shingleton-Smith A and Paton C. Antipsychotic long acting injections: prescribing practice in the UK. *Br J Psychiatry Suppl* 2009; 52: S37–S42.

10. Parellada E and Bioque M. Barriers to the use of long-acting injectable antipsychotics in the management of schizophrenia. *CNS Drugs* 2016; 30: 689–701.
11. Waddell L and Taylor M. Attitudes of patients and mental health staff to antipsychotic long-acting injections: systematic review. *Br J Psychiatry Suppl* 2009; 52: S43–S50.
12. Jaeger M and Rossler W. Attitudes towards long-acting depot antipsychotics: a survey of patients, relatives and psychiatrists. *Psychiatry Res* 2010; 175: 58–62.
13. Patel MX, Nikolaou V and David AS. Psychiatrists' attitudes to maintenance medication for patients with schizophrenia. *Psychol Med* 2003; 33: 83–89.
14. Heres S, Reichhart T, Hamann J, *et al.* Psychiatrists' attitude to antipsychotic depot treatment in patients with first-episode schizophrenia. *Eur Psychiatry* 2011; 26: 297–301.
15. James BO, Omoaregba JO, Okonoda KM, *et al.* The knowledge and attitudes of psychiatrists towards antipsychotic long-acting injections in Nigeria. *Ther Adv Psychopharmacol* 2012; 2: 169–177.
16. Walburn J, Gray R, Gournay K, *et al.* Systematic review of patient and nurse attitudes to depot antipsychotic medication. *Br J Psychiatry* 2001; 179: 300–307.
17. Pereira S and Pinto R. A survey of the attitudes of chronic psychiatric patients living in the community toward their medication. *Acta Psychiatr Scand* 1997; 95: 464–468.
18. Jacobsson L and Odling H. Psychological aspects of depot treatment of schizophrenic syndromes. *Lakartidningen* 1980; 77: 3522–3526.
19. Hoencamp E, Knegeting H, Kooy US, *et al.* Patient requests and attitude towards neuroleptics. *Br J Psychiatry* 1995; 49(suppl. 35): 47–55.
20. Lambert T, Brennan A, Castle D, *et al.* Perception of depot antipsychotics by mental health professionals. *J Psychiatr Pract* 2003; 9: 252–260.
21. Patel MX, de Zoysa N, Bernadt M, *et al.* Are depot antipsychotics more coercive than tablets? The patient's perspective. *J Psychopharmacol* 2010; 24: 1483–1489.
22. Kim SW, Lee YH, Jang JE, *et al.* Comparison of attitudes toward long-acting injectable antipsychotics among psychiatrists and patients. *Int Clin Psychopharmacol* 2013; 28: 80–86.
23. Goldbeck R, Tomlinson S and Bouch J. Patients' knowledge and views of their depot neuroleptic medication. *Psychiatr Bull* 1999; 23: 467–470.

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