



School of Pharmacy

Comparison Of Long-Acting Injectables In The Treatment Of Mental Illness To Prevent Hospital Readmission In Less Than 30 Days After Discharge: A Retrospective Study

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BACKGROUND

- Long-acting injectable antipsychotics (LAIs) have been established since the 1960s. Numerous meta-analyses emphasize their interest as a relapse prevention strategy in schizophrenia and bipolar disorder¹⁻³
- Few observational or real world studies have compared LAIs head-to-head with relatively small sample sizes. Also, these retrospective studies failed to produce statistical significant differences in time to hospitalization and psychiatric hospitalization rates with LAIs.⁴⁻⁵
- Our study compares individual LAI first-generation antipsychotic (FGA) and second-generation antipsychotic (SGA) agents with a larger sample size and broader, generalizable, patient demographic from an acute care psychiatric hospital setting.

PURPOSE

- To compare rates of readmission to an acute care psychiatric hospital within 30 days of discharge for patients prescribed LAIs
- To examine whether patient diagnosis potentially impacted hospital readmission

METHODS

- Retrospective chart review
- Patients ≥18 years old hospitalized between July 2016 and November 2018 with a diagnosis of bipolar I, bipolar II, bipolar mixed, major depressive disorder (MDD) with psychosis, MDD without psychosis, psychosis, schizoaffective disorder, or schizophrenia who received LAIs during hospitalization
- Exclusion: Prolixin Decanoate®, Risperdal Consta®, and Invega Trinza® were excluded due to small sample size
- Independent variables: Abilify Maintena® (AM), Aristada® (AR), Haldol Decanoate® (HD), and Invega Sustenna® (IS)
- Outcome was readmission within 30 days from the discharge date after receiving LAIs
- Descriptive analysis: Chi-square test, ANOVA test
- Main results: Logistic regression

RESULTS

Table 1. Demographics

	Total	Abilify Maintena	Aristada	Haldol Decanoate	Invega Sustenna	P
Total	607 (100.0%)	198 (100.0%)	68 (100.0%)	106 (100.0%)	235 (100.0%)	
Age						
Mean (SD)	37.15 (13.34)	35.01 (12.73)	38.91 (13.38)	40.72 (15.27)	36.83 (12.56)	0.0027
Median	35.0	33.0	37.5	38.5	35.0	
18-19	25 (4.1%)	9 (4.5%)	0 (0.0%)	4 (3.8%)	12 (5.1%)	0.2710
20-29	195 (32.1%)	75 (37.9%)	20 (29.4%)	27 (25.5%)	73 (31.1%)	
30-39	156 (25.7%)	51 (25.8%)	18 (26.5%)	27 (25.5%)	60 (25.5%)	
40-49	105 (17.3%)	32 (16.2%)	13 (19.1%)	17 (16.0%)	43 (18.3%)	
50-59	84 (13.8%)	23 (11.6%)	11 (16.2%)	16 (15.1%)	34 (14.5%)	
60-69	36 (5.9%)	6 (3.0%)	5 (7.4%)	13 (12.3%)	12 (5.1%)	
70 and older	6 (1.0%)	2 (1.0%)	1 (1.5%)	2 (1.9%)	1 (0.4%)	
Gender						
Female	218 (35.9%)	69 (34.8%)	22 (32.4%)	51 (48.1%)	76 (32.3%)	0.0346
Male	389 (64.1%)	129 (65.2%)	46 (67.6%)	55 (51.9%)	159 (67.7%)	
Diagnosis						
Bipolar I	28 (4.6%)	12 (6.1%)	3 (4.4%)	5 (4.7%)	8 (3.4%)	0.0149
Bipolar II	26 (4.3%)	12 (6.1%)	2 (2.9%)	5 (4.7%)	7 (3.0%)	
Bipolar Mixed	56 (9.2%)	23 (11.6%)	12 (17.6%)	6 (5.7%)	15 (6.4%)	
MDD with Psychosis	41 (6.8%)	18 (9.1%)	3 (4.4%)	0 (0.0%)	20 (8.5%)	
MDD without Psychosis	10 (1.6%)	5 (2.5%)	2 (2.9%)	2 (1.9%)	1 (0.4%)	
Psychosis	165 (27.2%)	45 (22.7%)	14 (20.6%)	38 (35.8%)	68 (28.9%)	
Schizoaffective	113 (18.6%)	38 (19.2%)	13 (19.1%)	17 (16.0%)	45 (19.1%)	
Schizophrenia	168 (27.7%)	45 (22.7%)	19 (27.9%)	33 (31.1%)	71 (30.2%)	
Length of Stay						
Mean (SD)	17.37 (23.26)	14.55 (14.36)	14.51 (9.38)	20.90 (24.15)	18.99 (30.39)	0.0567
Median	13.0	11.5	12.0	14.0	13.0	
Concomitant Therapy						
Mood Stabilizer						
No	297 (48.9%)	98 (49.5%)	36 (52.9%)	52 (49.1%)	111 (47.2%)	0.8651
Yes	310 (51.1%)	100 (50.5%)	32 (47.1%)	54 (50.9%)	124 (52.8%)	
Atypical Antipsychotic						
No	42 (6.9%)	7 (3.5%)	1 (1.5%)	23 (21.7%)	11 (4.7%)	0.0000
Yes	565 (93.1%)	191 (96.5%)	67 (98.5%)	83 (78.3%)	224 (95.3%)	
Typical Antipsychotic						
No	510 (84.0%)	186 (93.9%)	66 (97.1%)	39 (36.8%)	219 (93.2%)	0.0000
Yes	97 (16.0%)	12 (6.1%)	2 (2.9%)	67 (63.2%)	16 (6.8%)	
Antidepressant						
No	464 (76.4%)	149 (75.3%)	55 (80.9%)	85 (80.2%)	175 (74.5%)	0.0000
Yes	143 (23.6%)	49 (24.7%)	13 (19.1%)	21 (19.8%)	60 (25.5%)	

Table 2. Readmission within 30 days from the discharge date after receiving LAIs, by LAIs

	Total	Never readmission within 30 days after receiving LAIs	Experienced at least one readmission within 30 days after receiving LAIs	P
Total	607 (100.0%)	544 (89.6%)	63 (10.4%)	
Abilify Maintena	198 (100.0%)	172 (86.9%)	26 (13.1%)	0.0280
Aristada	68 (100.0%)	56 (82.4%)	12 (17.6%)	
Haldol Decanoate	106 (100.0%)	97 (91.5%)	9 (8.5%)	
Invega Sustenna	235 (100.0%)	219 (93.2%)	16 (6.8%)	

Note: Chi-square test was used.

Table 3. Readmission within 30 days from the discharge date after receiving LAIs, by Diagnosis

	Total	Never readmission within 30 days after receiving LAIs	Experienced at least one readmission within 30 days after receiving LAIs	P
Total	607 (100.0%)	544 (89.6%)	63 (10.4%)	
Bipolar I	28 (100.0%)	26 (92.9%)	2 (7.1%)	0.0254
Bipolar II	26 (100.0%)	24 (92.3%)	2 (7.7%)	
Bipolar Mixed	56 (100.0%)	48 (85.7%)	8 (14.3%)	
MDD with Psychosis	41 (100.0%)	40 (97.6%)	1 (2.4%)	
MDD without Psychosis	10 (100.0%)	8 (80.0%)	2 (20.0%)	
Psychosis	165 (100.0%)	154 (93.3%)	11 (6.7%)	
Schizoaffective	113 (100.0%)	92 (81.4%)	21 (18.6%)	
Schizophrenia	168 (100.0%)	152 (90.5%)	16 (9.5%)	

Note: Chi-square test was used.

Table 4. Logistic regression of Readmission within 30 days from the discharge date after receiving LAIs

	Odds Ratio	95% CI	p
LAIs			
Abilify Maintena	2.114	1.071 - 4.171	0.0309
Aristada	3.159	1.362 - 7.329	0.0074
Haldol Decanoate	0.698	0.232 - 2.099	0.5223
Age			
Continuous Age (Year)	0.985	0.963 - 1.007	0.1784
Gender			
Male	0.719	0.400 - 1.292	0.2701
Diagnosis			
Bipolar I	0.570	0.118 - 2.748	0.4839
Bipolar II	0.497	0.102 - 2.420	0.3865
Bipolar Mixed	0.978	0.362 - 2.645	0.9655
MDD with Psychosis	0.152	0.019 - 1.253	0.0800
MDD without Psychosis	1.164	0.209 - 6.477	0.8621
Psychosis	0.618	0.271 - 1.405	0.2506
Schizoaffective	1.783	0.846 - 3.759	0.1285
Length of Stay			
Length of Stay (Days)	0.992	0.972 - 1.012	0.4309
Concomitant therapy			
Mood Stabilizer	1.499	0.837 - 2.687	0.1736
Atypical Antipsychotic	0.472	0.177 - 1.257	0.1332
Typical Antipsychotic	2.033	0.824 - 5.013	0.1234
Antidepressant	1.373	0.725 - 2.599	0.3310

Note: Reference groups were Invega Sustenna for LAIs, Female for gender, schizophrenia for diagnosis, no existence for each concomitant therapy.

DISCUSSION

- A total of 607 patients who used AM (n=198), AR (n=68), HD (n=106), and IS (n=235) during the index hospitalization were analyzed
- The IS group had the lowest rate of readmission within 30 days (6.8%, p = 0.028)
- Logistic regression showed that the likelihood of being readmitted to the hospital within 30 days was 2.1 and 3.2 times higher for patients on AM and AR, respectively, compared to patients on IS (OR=2.11, 95% CI=1.07-4.17, p=0.031, and OR=3.16, 95% CI=1.36-7.33, p=0.007)
- HD group had a lower likelihood of readmission compared to IS, however, there was no significant difference (OR=0.70, 95% CI = 0.23-2.10, p=0.522)

LIMITATIONS

- Readmissions recorded occurred at the same hospital and therefore readmission rates may be underestimated
- Sample size for Prolixin Decanoate®, Risperdal Consta®, and Invega Trinza® were too small to be included in the study. Future studies are warranted with larger sample sizes to evaluate all LAIs individually

CONCLUSION

- Invega Sustenna® was the most effective at reducing psychiatric hospital readmission within 30 days
- Although schizophrenia patients were prescribed LAIs more often than other mental disorders, there was no difference in readmission rates within 30 days by diagnosis

DISCLOSURES

- The authors have no disclosures or conflicts of interest.

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