Poster Title: Antipsychotic Adherence and Discontinuation Rates in Schizophrenia Patients Receiving Long-Acting Injectable Antipsychotics

Hospital: William Osler Health System

Poster authors'/ contributors' name, position and contact information:

Ravnoor Kang [1], Darsh Shah [2], Mamatha Musku [3], Charles Ohene Darkoh [4], Shailesh Nadkarni [5]

[1] Summer Research Student
[2] Summer Research Student
[3] Consultant, Organizational Performance Consultant
[4] Consultant Psychiatrist, Assistant Clinical Professor, (Part time) McMaster University - Faculty of Health Sciences
[5] Clinical Services Manager

Topic:
Schizophrenia is a complex, chronic psychiatric disorder associated with reduced quality of life and shortened life span. The majority of patients with schizophrenia will relapse within 1 year following an acute episode. The ultimate goals of treatment are to improve functional capabilities, minimize residual symptoms during periods of remission, and decrease relapse frequency and duration, as each relapse brings with it the possibility of a worsening prognosis. Maintaining therapeutic continuity is essential for long-term, positive patient outcomes in schizophrenia. Medication nonadherence and symptomatic relapses magnify the disease burden associated with this disorder. Medication adherence in chronic disease states generally improves with a decrease in dosing frequency.

Long-acting injectable (LAI) antipsychotics were developed to improve patient outcomes secondarily to improving medication adherence. Paliperidone palmitate 3-monthly injection (PP3M) is the only LAI available with a quarterly dosing interval. PP3M has been approved for use in the long-term maintenance treatment of schizophrenia in patients already controlled on once-monthly PP LAI (paliperidone palmitate once-monthly injection [PP1M]) for a minimum of 4 months. Current evidence supports the efficacy and tolerability of PP3M compared to PP1M and placebo.

Methodology:
We conducted a retrospective analysis of WOHS patients receiving PP1M or PP3M in the past 3 fiscal years (FY2019-22). Collected Patient Information: Age, Sex, Dosing Regiment, Emergency Department Visits.

Inclusion Criteria included:
1. 18-64 Years of Age, any gender
2. DSM-IV diagnosis of Schizophrenia, schizophrenia spectrum and related disorders

3. Patients of Brampton Civic Hospital and Etobicoke General Hospital

Exclusion criteria:

1. Patients Receiving Clozapine or Other Antipsychotics synchronously

Hyopthesis: PP3M has lower nonadherence, discontinuation rates, and reduced readmission outcomes in patients than those receiving PP1M.

Outcomes: Primary outcome measures were nonadherence (proportion of days patients not on treatment), discontinuation (continuous medication gap ≥ 30 days beyond scheduled dose), and schizophrenia-related rehospitalization, within last 12 months. Descriptive analyses will compare users of LAI antipsychotic medication on sociodemographic, clinical, and treatment characteristics. Logistic regressions will be used to examine associations.

Discussion:

A number of outcome measures were reviewed as a result of this study. Discontinuation Rate: Any switch of medication or ≥60-day gap in an available day supply, as per drug monograph. (≥88 days for PP1M, ≥144 days for PP3M). ED Visit Rate: The rate was determined using all mental health-related ED visits of participants over 3 FY. All visits given F-Codes were selected as per hospital standards of mental health ED visits. Adherence Rates: Determined using medication possession ratio calculation (MPR), as described by the equation below.

$$MPR = \frac{\sum Available\ Days\ Supply\ of\ LAI}{[First\ LAI\ date - Last\ LAI\ date] + Available\ Day\ Supply\ of\ LAI}$$

Unpaired Adherence: The unpaired independent t-test of PP1M (n=503,M=93.84, SD=22.13) and PP3M (n=137,M=102.34,SD=10.56) suggested PP3M participants had a statistically higher adherence [t(638)=4.362,p<0.001]. The Mann-Whitney U Test also showed PP3M patients (Mdn=101.77) had significantly higher adherence than PP1M patients (Mdn=99.71) (U=22895,z=-6.034,p<0.001). Paired Adherence: The paired dependent t-test of patients receiving PP1M (n=113, M=92.26, SD=19.05) and PP3M (n=113, M=104.54, SD=18.83) suggested patient adherence was significantly higher when taking PP3M in comparison to PP1M [t(112)=-5.231,p<0.001)]. A Wilcoxon Signed Ranks test shows 72.6% of individuals had better adherence on PP3M (Mdn=105.44) than PP1M, compared to 27.4% of individuals showing better adherence on PP1M (Mdn=98.90) than PP3M (T=5039,z=-5.21,p<0.001).

Unpaired Emergency Department Visits: The unpaired t-test of PP1M (n=511,M=0.89,SD=3.09) and PP3M (n=142,M=0.23,SD=0.76) suggested PP3M participants had statistically fewer ED visits [t(645)=4.44,p<0.001.] The Mann-Whitney U Test also showed PP3M patients (Mdn=0) had significantly fewer ED visits than PP1M patients (Mdn=0) (U=29557,z=-4.397,p<0.001). Paired Emergency Department Visits: The paired t-test of patients receiving PP1M (n=137,M=0.31, SD=1.06) and PP3M

(n=137,M=0.30,SD=0.83) suggests there was no significant difference between ED visits when an individual was on PP1M compared to PP3M [t(136)=0.131,p=0.896). A Wilcoxon Signed Ranks test also shows no significant differences in ED visits in patients who received both PP1M and PP3M during the study period (T=220.50,z=-0.66,p=0.948)

Conclusion/Summary:

Results show adherence was significantly higher in patients receiving PP3M compared to PP1M in both paired and unpaired analysis. Unpaired analysis of ED visits showed patients receiving PP3M had significantly fewer ED visits over the study period than PP1M. No such differences were found between patients receiving both PP1M and PP3M in the study period. Discontinuation rates of patients who received PP3M were not significantly different than patients who received PP1M. For patients who received both PP1M and PP3M, discontinuation rates were also not significantly different across both time frames. Our results are aligned with similar studies assessing the same objectives. The study shows the merits of PP3M over PP1M