Impacts of the COVID-19 Pandemic on Adherence to Antidepressant Medications in Commercially Insured Adult Patients Receiving Pharmacotherapy for Depression

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Background

- On **March 13, 2020** the president of the United States declared a national emergency due to the novel SARS-CoV-2 virus (COVID-19).[1]
- A household pulse survey conducted by the Centers for Disease Control (CDC) from 8/19/2020 to 2/1/2021 found that an increasing proportion of US adults had reported symptoms of depression and antidepressant use amid the COVID-19 pandemic.[2]
- Major depressive disorder (MDD) places a large burden on public health, the National Center for Quality Assurance (NCQA) State of Health Care 2014 report estimated that 47-49% of patients remained on antidepressant therapy through 6 months.[3-5]
- A randomized clinical trial that tested the effects of a counselor-led adherence program in middle-aged adult patients suffering from depression found that adherence to antidepressants within the first 12 weeks of receiving newly prescribed therapy was associated with a decrease in depressive episodes and could improve the long-term outcomes of these patients.[6]
- Multiple studies of depression used a **medication possession ratio (MPR)** cut-off of 80% to measure adherence .[4,8]
- Despite the widespread understanding that the COVID-19 pandemic has created an environment where many determinants of poor mental health are exacerbated, there are currently no published studies in the US that assess the impacts of the COVID-19 pandemic on the adherence to antidepressants in commercially insured patients.[7]

Objective

- To assess the impacts of the COVID-19 pandemic on adherence to antidepressant medications in commercially insured adult patients receiving pharmacotherapy for depression with a diagnosis for MDD.

Methods

- **Study Design:** A retrospective analysis that utilized real-world claims and medical data from commercial health plans with contracts receiving various services from Magellan Rx Management as well as third party data providers was conducted from 3/13/2018 to 12/13/2020.

STUDY PERIOD
3/13/2018 to 12/13/2020

- **Inclusion Criteria**
  - First paid claim according to drug name for a serotonin-norepinephrine reuptake inhibitor (SNRI) or a selective serotonin reuptake inhibitor (SSRI) during the index event time frame
  - Diagnosis for MDD per ICD-10 code (F33.XX) either on the index event date or during the baseline period
- **Exclusion Criteria**
  - Less than 18 years old at the beginning of the study period
  - Pregnancy anytime during the study period
  - A break in eligibility anytime during the study period
  - Initiated two or more antidepressants (SSRI or SNRI) during the first 14 days of the follow-up period

Adherence was slightly increased among commercially insured adult patients who initiated antidepressant therapy during the COVID-19 pandemic compared to those who initiated pre-pandemic.

Methods *cont.*

- **Outcomes**
  - Adherence was defined as having an MPR >= 0.80
  - The MPR was calculated by using pharmacy claims data to assess prescription fill dates, and day supplies according to drug name
    » MPR (%) = (Sum of days supply in the study period / Number of days in the study period) * 100
    » Mean MPR was compared between the two groups
- **Statistical Analysis:**
  - SAS 9.4 M6 was used to perform all statistical tests.
  - Differences between the groups were assessed with a t-test for continuous variables and Chi-squared test for categorical variables

Results

Table 1. Patient Demographics

Metric		Pre-pandemic group (n= 15,228)	Post-pandemic group (n= 9,232)	p-value
Age (years), N (%)	Mean (Median) [SD]	39 (38) [14]	39 (37) [14]	< 0.0001
	18-29	4,706 (31%)	3,052 (33%)	
	30-39	3,352 (22%)	2,114 (23%)	
	40-49	3,005 (20%)	1,725 (19%)	0.0001
	50-59	2,808 (18%)	1,599 (17%)	
	60+	1,357 (9%)	742 (8%)	
Gender	F	9,956 (65%)	6,048 (66%)	0.8337

Table 2. Results

Metric	Pre-pandemic group (n= 15,228)	Post-pandemic group (n= 9,232)	p-value
MPR, Mean (Median)[SD]	0.74 (0.83) [0.38]	0.76 (0.83) [0.39]	< 0.0001
Adherent Patients: MPR ≥ 0.80, N(%)	8,010 (52.6%)	5,024 (54.4%)	0.0057

Figure 1. Average MPR per Study Group

p-value <0.0001

Figure 2. Percentage of Members with MPR >= 0.80 per Study Group

P-value 0.0057

Conclusions

- To answer our research question, the post-pandemic group had a statistically significant (higher) mean MPR when compared to the pre-pandemic group (0.76 and 0.74 respectively, p-value <0.0001) as noted in Table 2. Although there is a statistically significant difference, the clinical significance here is minimal.
- There was a difference in MPR of 0.02 which is approximately 3.6 days for the 180 day follow up period. The post-pandemic group was more adherent by about 3.6 days when compared to the pre-pandemic group.
- The post pandemic group also had a higher percentage of members that were adherent compared to the pre-pandemic group which was statistically significant (54.4% and 52.6% respectively, p-value 0.0057)

Limitations

- There are other classes of antidepressants (i.e., tricyclic antidepressants and monoamine oxidase inhibitors) that were not studied; therefore, these results may not be generalizable to all antidepressant medications.
- The study only accounts for individuals 18 years or older, adherence to these medications in those < 18 years of age remains unknown.
- Analysis is based on real world claims data. Services performed but not billed are not captured in the data. This may include physician samples for pharmaceutical products or services performed pro bono.
- Undetectable data quality issues may exist that are common to all claims data sources such as submitting a valid code but not the code that was intended.
- Pregnant members were excluded as their treatment guidelines differ from those being treated for depression without pregnancy. Therefore, these findings may not be generalizable to pregnant patients.
- Members that initiated 2 or more therapies within the first 14 days of treatment were excluded in order to simplify data.

References

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