

# COVID-19 Induced Psychosis, a case series

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## Background

The emergence and rapid spread of COVID-19, caused by SARS-CoV-2, has led to about 470 million confirmed cases and nearly 6 million deaths worldwide as of March 22, 2022. (2) The post-acute phase of COVID-19 (e.g. post-acute COVID-19 syndrome) has been reported in hospital admits with severe COVID-19, as well as in children and adults with mild disease (4). Among the post-acute phase sequelae are neurological and psychiatric pathology including first psychotic episodes in previously healthy patients. Moreover, occurring statistically more frequently in influenza virus or other respiratory infection cases (5). This case series presents two patients who developed a first psychotic episode after COVID-19.

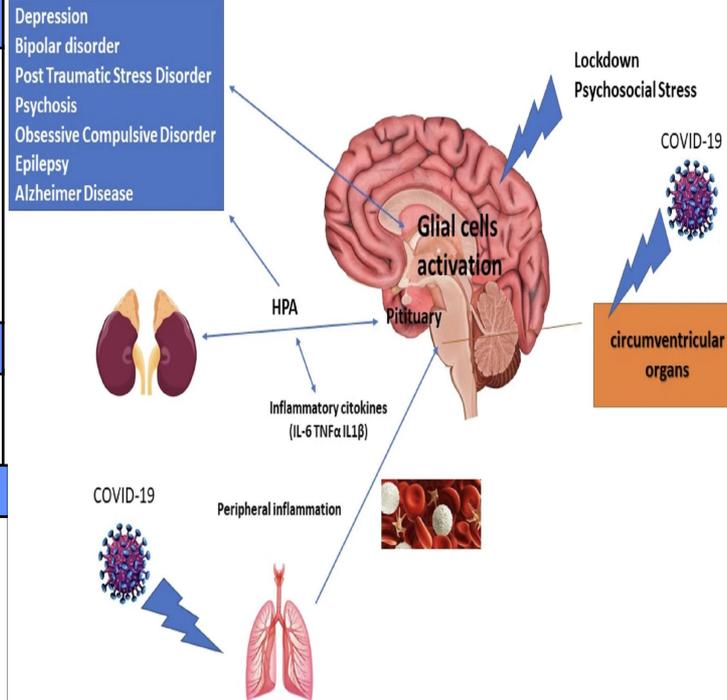
## Objective

To observe the relationship between COVID-19 virus and development of new onset psychosis.

## Case Reports

First patient in this series is a 45 year old single caucasian male with no personal or family history of mental illness. Patient was taken to the ED by his brother for evaluation of erratic behavior, insomnia, disorganized speech. Records showed patient agitated at sending facility and at one point attempted to jump out of a second story window to 'escape' from the hospital. Urine drug screen and blood alcohol negative. During psychiatric evaluation patient and collaterals reported recent COVID-19 pneumonia requiring 11 days of hospitalization to stabilize. Patient's friend and brother report in the days after discharge the patient was impulsive, bizarre in behavior and speech; impulsively took his friend's car and drove 400 miles to the 'thumb' of Michigan with no rational explanation. Patient denied auditory or visual hallucinations but endorsed worsening paranoia. Patient was admitted to the inpatient psychiatric unit for 12 days in which he received Haldol 5mg IM for acute psychosis with Ativan 2 mg IM for 3 episodes of acute agitation. He was initially started on Seroquel 100mg po QHS for psychosis and mood which was switched to Zyprexa 10 mg po QHS d/t tolerability. He was also offered Ativan 0.5 mg po TID for anxiety and easy agitation which was tapered and discontinued prior to his discharge. Discharge diagnosis was unspecified psychosis r/o psychosis secondary to medical condition, Covid-19 pneumonia.

Second case in series is a 40 year old single Caucasian male with history of alcoholism and no personal or family history of mental illness. Patient presented to ED with paranoid and persecutory delusions. Patient's family reported he had been refusing food and water out of fear of poison. He displayed bizarre behavior, disorganized thought process, mood instability with physical and verbal aggression as well as insomnia. Urine drug screen and blood alcohol level negative. Collateral information collected from patient's mother revealed patient's symptoms began approximately 6 months prior after hospitalization for Covid-19 respiratory symptoms. Patient was started on Risperidone 1 mg po BID for psychosis and mood, Zoloft 50 mg po QAM for depression and anxiety, Vistaril 25 mg po TID PRN for breakthrough anxiety. He was discharged 3 weeks later on Risperidone 1 mg po QAM and 3 mg PO QHS, Lithium 600 mg po BID, Fluvoxamine 100 mg po QAM. Patient was diagnosed with unspecified psychosis r/o alcohol induced psychosis r/o psychosis secondary to medical condition, Covid-19 pneumonia.



## Results

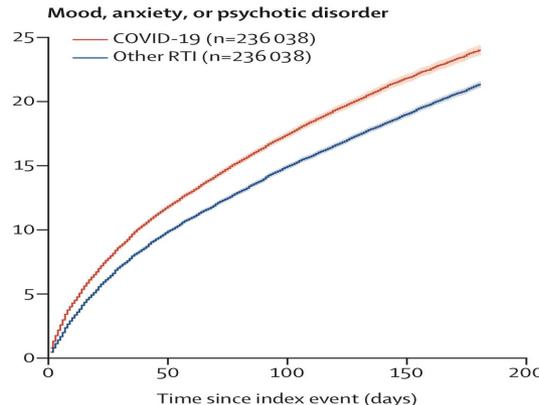
Both Patients treated with second-generation antipsychotic as well as anti-epileptic agent as mood stabilizer with addition of antidepressant and anxiolytic. Both patients treated successfully over 14 day period and discharged in the care of their families. Time limitations on acute-inpatient-treatment and stabilization precluded long-term observation of their behavior.

## Discussion

Development of first break psychosis after an infectious virus creates a dangerous level of morbidity in the population d/t countless vectors and ease of transmission. Evidence supports the association of SARS-CoV-2 infection with inflammatory changes in the brain and possible new onset psychosis. The differential diagnosis may include medication-induced (corticosteroids, hydroxychloroquine, etc), psychological stress and major inflammatory response as other possible etiologies (5). Psychosis d/t COVID-19 responsive to second generation antipsychotics and follows a similar treatment course as most psychotic disorders. Further investigation is justified due to the diagnostic and management implications of an infectious disease as the cause of new onset psychosis.

## References

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- (2) World Health Organization. WHO Coronavirus disease dashboard. <https://covid19.who.int/>. Date accessed: 03-22-2022.
- (3) Huang C, Huang L, Wang Y et al. "6-month consequences of COVID-19 in patients discharged from hospital: a cohort study." *Lancet*. 2021; 397: 220-232 <https://pubmed.ncbi.nlm.nih.gov/33428867/>
- (4) World Health Organization. What we know about Long-term effects of COVID-19. [https://www.who.int/docs/default-source/coronaviruse/risk-comms-updates/update-36-long-term-symptoms.pdf?sfvrsn=5d3789a6\\_2](https://www.who.int/docs/default-source/coronaviruse/risk-comms-updates/update-36-long-term-symptoms.pdf?sfvrsn=5d3789a6_2). Date: 2020. Date accessed: March 22, 2022
- (5) Taquet M, Geddes JR, Husain M, Luciano S, Harrison PJ. 6-month neurological and psychiatric outcomes in 236 379 survivors of COVID-19: a retrospective cohort study using electronic health records. *Lancet Psychiatry*. (2021) 8:416. doi:10.1016/S2215-0366(21)00084-5 <https://pubmed.ncbi.nlm.nih.gov/33836148>



Number at risk	30	60	90	120	150	180
COVID-19	84435	58504	41026	26310	15885	8741
Other RTI	122790	103824	89662	75998	63173	51033

Kaplan-Meier estimates for the incidence of major outcomes after COVID-19 compared with other RTIs Shaded areas are 95% CIs. For incidences of first diagnoses, the number in brackets corresponds to all patients who did not have the outcome before the follow-up period. RTI=respiratory tract infection.