



Case report

COVID-19: Risk of alcohol abuse and psychiatric disorders

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ABSTRACT

Alcohol abuse along with difficulties in communication has led to increased morbidity and mortality among patients with psychiatric disorders. This issue has a higher importance during the COVID-19 Pandemic. Standard recommendations to prevent the spread of infection such as self-quarantine, hand washing, covering mouth and nose while coughing may be difficult to enforce in patients with mental illnesses. There is a controversy in discharge and management of patients with history of alcohol abuse and psychiatric disorders when they come to the Emergency Departments (ED) with mild presentation of COVID-19.

We discussed a 39 years old patient known case of paranoid schizophrenia who came to the ED with mild fever, cough and headache. She was soon discharged from the ED after having a normal chest radiograph. She was recommended to be in self-quarantine for at least 14 days. Her COVID-19 condition deteriorated rapidly in a week, and she was brought back to the ED after she had an altercation with her friends while drinking.

Patients with psychiatric disorders especially schizophrenia or those who have been diagnosed with alcohol abuse may have a higher risk for progression of their mild COVID-19 to a severe form. On the other hand, they have a role in the spread of COVID-19 in the community due to lower compliance with preventive measures. A higher rate of alcohol abuse in psychiatric patients and their lower compliance to self-quarantine calls for a different approach when they come to the ED with COVID-19 presentations.

1. Introduction

Life-style related risk factors such as smoking and alcohol abuse along with difficulties in communication has led to increased morbidity and mortality among patients with psychiatric illnesses. This issue is highlighted during coronavirus disease (COVID-19) pandemic when the importance of self-quarantine as a preventive strategy has become clear to many people around the world. As we are dealing with the challenges to overcome and understand this contagious and lethal disease, an arising question is related to the best approach when the patients come to the primary care physicians or emergency departments with a mild disease. Fever and cough are the two common symptoms at presentation in patients with COVID-19 which look the same as many other pulmonary infections, however it is not hidden anymore that COVID-19 can rapidly deteriorate the patients' respiratory condition. Until such time that a vaccine or cure for COVID-19 is available, preventive measures have a great role in controlling the disease. Standard recommendations to prevent spread of infection such as hand washing, covering mouth

and nose while coughing and sneezing, etc. may be difficult to enforce in patients with mental illness [1].

According to the Chinese Center for Disease Control and Prevention Report, 87% of the patients with COVID-19 were between 30 and 79 years old. The most common type of presentation representing 81% of the patients was classified as a mild form, no pneumonia and mild pneumonia. Out of 16186 patients 22% were diagnosed only based on symptoms and exposures. They were not tested for COVID-19 because of insufficient testing capacities to meet current needs [2]. Therefore, due to the limitations of testing, it is important to differentiate the high risk groups among which few studies have discussed the role of psychiatric illnesses and alcohol abuse in COVID-19. We discuss a case with history of schizophrenia who presented with mild COVID-19 signs and symptoms and her respiratory condition deteriorated rapidly.

1.1. Case history

A 39 year-old female who was known case of schizophrenia and a history of autoimmune seizures came to the Emergency Department

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Abbreviations

ARDS	Acute Respiratory Distress Syndrome
COVID-19	Coronavirus Disease 2019
CXR	Chest X-Ray
ED	Emergency Department

(ED) with COVID-19 presentations in April 2020. She was previously diagnosed with paranoid schizophrenia and acute psychosis in her last psychiatric hospital admission during February 2019. Her medications included valproic acid, clonazepam, benztropine, lamotrigine, risperidone and paliperidone palmitate.

1.2. COVID-19 related ED admissions

The patient came to the ED with complaint of fever, cough and headache in April 2020. She also had a questionable history of exposure to someone positive for COVID-19. The patient was febrile in the ED but nontoxic in appearance and in no distress. Her initial Chest X-Ray (CXR) was reported normal by radiologist (Fig. 1A). She was discharged without being tested for COVID-19 since the physicians assumed it would not change the management of this patient. She was discharged on the same day with recommendation of self-quarantine for 14 days, or longer if symptoms persist.

One week later, the patient was brought back to the ED by her mother after she got an altercation with her friends. She had fever and shortness of breath. Per patient, she had been drinking at home with friends since the day prior to the admission when she got an altercation with her friends and her mother called the cops. At some point the patient disclosed fever and shortness of breath to triage but denied to the physician when asked. This time her CXR showed patchy bilateral perihilar and basilar opacities. Her next day follow up CXR represented worsening multifocal opacities of the bilateral lungs. A COVID-19 RT-PCR test was performed during her second visit to the ED that was reported positive. She was intubated around 24 hours after the second ED admission when she had a rapid respiratory deterioration due to hypoxemia and acute respiratory failure (Fig. 1). Finally, the patient was extubated and discharged after 54 days of ICU admission with diagnosis of Acute Respiratory Distress Syndrome (ARDS) due to COVID-19.

1.3. Patient comorbidities

Apart from the patient's psychiatric illness, other comorbid conditions of this patient were autoimmune diseases including autoimmune Diabetes Mellitus, positive Glutamic Acid Decarboxylase (GAD65) antibodies in CSF suggesting an autoimmune origin of the seizures which were primarily diagnosed as idiopathic refractory temporal lobe epilepsy with bilateral mesial temporal sclerosis. She also had a history of autoimmune hypothyroidism with high level of Thyroid Peroxidase (TPO) antibodies. According to her internal medicine physician her psychiatric conditions made it difficult for her adherence to diet control and diabetic treatment. Although she had a telemedicine follow up with her endocrinologist and her blood sugar was controlled, her COVID-19 condition deteriorated rapidly.

2. Discussion

As discussed in this case, a higher rate of alcohol abuse in psychiatric patients and their lower compliance to self-quarantine calls for a different approach when they come to the ED with signs and symptoms of COVID-19. In order to avoid worsening of their condition and the spread of COVID-19 in the community we need a different preventive, diagnostic and therapeutic measures in these patients.

Chronic alcohol abuse significantly increases the risk of ARDS. This association is indicated by a 1.89- fold increase in the odds of ARDS in persons with high alcohol consumption [3]. ARDS is the most common complication causing death among hospitalized patients with COVID-19 [4].

According to a survey, 12 million adults in the UK reported drinking to relax or overcome feeling depressed. The fact that many people use alcohol to cope with feelings of depression and/or stress is well-documented in patients with mental health diseases. The effects of long-term social isolation on stress levels, including increased neuroendocrine responses, have been described in animals however little is known about the effect of chronic isolation in general human population during the on-going lockdown in many countries. Chronic alcohol misuse can also result in neuroendocrinopathies and emotional dysregulation. One of the known risk factors for alcohol misuse and alcohol use disorder is impulsivity which is a common feature of psychiatric disorders. Drinking lowers disinhibition which means fewer personal constraints to be in place. This high-risk group of COVID-19 patients may not only suffer from the effects of alcohol misuse but also it is likely

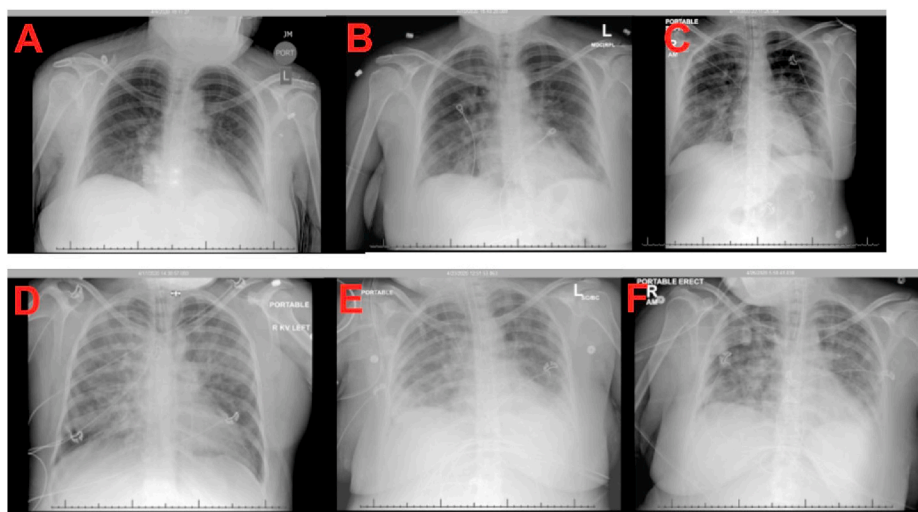


Fig. 1. Chest Radiographs of the patient: A. Day 1., first ED admission: Normal CXR. B. Day 7, second ED admission: Patchy bilateral perihilar and basilar opacities. C. Day 8, after intubation: Patchy bilateral perihilar and basilar opacities D. Day 14. slightly hyperinflated with widespread right greater than left apparent airspace type opacities E. Day 20. bilateral lung opacities F. Day 23, diffuse interstitial and airspace opacities.

that they be in compliance to the self-quarantine instructions when they are suspicious for COVID-19 [5,6].

Ismene *et al.* showed that almost 10% of people diagnosed with alcohol abuse have also a diagnosis of schizophrenia. The odds of having schizophrenia was 1.9 times higher in alcohol abusers compared to those who did not have alcohol abuse. Among the psychiatric disorders schizophrenia showed to have the highest association with alcohol abuse and alcohol dependence [7].

3. Conclusion

Patients with psychiatric disorders specially schizophrenia or those who have been diagnosed with alcohol abuse may have a higher risk for progression of mild COVID-19 to a severe form. Moreover, they have an important role in the spread of this disease among community since they may not be able to comply with the self-quarantine and standard preventive recommendations. It is important that residents, fellows and primary health care professionals pay special attention to psychiatric patients with any signs and symptoms of COVID-19. Performing a diagnostic test for COVID-19 is recommended for the patients who have a psychiatric comorbidity or a history of alcohol abuse with any COVID-19 presentations. It may be required to admit them in the hospital or have frequent and closer follow ups. Screening for alcohol abuse in this group of patients may have a significant role to have a better preventive measure and decrease the burden of COVID-19.

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Informed consent and patient details

This study involves patient data. University of Miami IRB committee has approved it, and the IRB approval number is 20200325.

CRediT authorship contribution statement

Sara Haddadi: Conceptualization, Data curation, Funding acquisition, manuscript, Writing - original draft, preparation. **Mukunthan Murthi:** Manuscript edition. **Ihsan Salloum:** Data curation, interpretation, manuscript edition. **Mehdi S. Mirsaeidi:** Conceptualization, Manuscript edition, Supervision.

Declaration of competing interest

None.

References

- [1] A.R. Kavoov, COVID-19 in people with mental illness: challenges and vulnerabilities, *Asian J Psychiatr* 51 (2020) 102051.
- [2] Z. Wu, J.M. McGoogan, Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a Report of 72 314 cases from the Chinese center for disease control and prevention, *J. Am. Med. Assoc.* 323 (2020) 1239–1242.
- [3] E. Simou, J. Leonardi-Bee, J. Britton, The effect of alcohol consumption on the risk of ARDS: a systematic review and meta-analysis, *Chest* 154 (2018) 58–68.
- [4] R. Chen, W. Liang, M. Jiang, et al., Risk factors of fatal outcome in hospitalized subjects with coronavirus disease 2019 from a nationwide analysis in China, *Chest* 158 (1) (2020) 97–105.
- [5] J.M. Clay, M.O. Parker, Alcohol use and misuse during the COVID-19 pandemic: a potential public health crisis? *Lancet Public Health* (2020).
- [6] Alcohol and Mental Health. <https://www.mentalhealth.org.uk/a-to-z/a/alcohol-and-mental-health2020>.
- [7] Ismene L. Petrakis MD, Gerardo Gonzalez, M.D., Robert Rosenheck, M.D., and John H. Krystal, M.D. Comorbidity of Alcoholism and Psychiatric Disorders.