

## Problems with treatment of COVID-19 (+) patient with psychiatric disorder – a case report

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### Summary

The COVID-19 pandemic has put an unusual strain on medical staff across the globe. Psychiatric disorders and their effect on patients' behavior turn the management of coronavirus disease into an even more of a challenging task. In this paper we present a case report of a COVID-19-positive patient suffering from organic mental disorders and alcohol dependence syndrome, thus shedding some light on a perspective of mental health professionals working in a psychiatric hospital setting, transformed into an infectious diseases unit designated solely to cover treatment of SARS-CoV-2 infected patients with mental disorders, on problems and issues arising during provision of immediate healthcare in psychiatry departments in today's pandemic-stricken world. We believe that our experience from such an endeavor could prove invaluable for other mental health specialists and therefore sharing it seems especially timely and valid.

**psychiatry, COVID-19, SARS-CoV-2, mental health, organization**

This most recent pandemic has put an unusual strain on healthcare professionals around the globe, making them face difficulties unheard of in their careers. Management of coronavirus disease (COVID-19) requires a unique regime concerning patients' behavior, as they are expected to pay increased attention to self-hygiene, undergo mandatory quarantine and wear different forms of protective gear. Physicians need to carefully re-evaluate pharmacological treatment in order to avoid possible harmful drug interactions when novel therapies aimed at coronavirus are administered [1]. All this has proven to be especially problematic in psychiatric wards [2].

In this case report, we present a 46-year-old unmarried male patient, with no children, primary education, previously diagnosed with al-

cohol dependence syndrome (ADS) and organic personality disorder. The patient has the history of alcohol withdrawal therapy, which he completed twice over the past 10 years and has now declared alcohol abstinence for over 2 years. He has been a nicotine user since he was 15 years old and now admits to smoking approximately 30 cigarettes daily. Prior to his admittance into this hospital, from March 02 2020, the patient was hospitalized in the psychiatric ward of the Regional Hospital in Kołobrzeg, where he had been escorted by the police. He was found wandering around recreational plots where he lives, carrying a chainsaw and scattering pieces of paper. The police described his behavior as inadequate, aggressive at times. The patient harassed people he met on his way. During hospitalization in Kołobrzeg, his behavior was described as agitated, restless, vulgar, verbose, sexually inappropriate, including incoherent delusions and sleep disturbances. Preliminary treatment consisted of valproate 1000mg/d, levomeprom-

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azine 250mg/d and citalopram 20mg/d and resulted in partial improvement, mostly in reduction of agitation and aggressive behavior. On March 07, 5 days after SARS-COV-2 was discovered in another patient on the ward, the patient was diagnosed with COVID-19. On March 10, he was transferred and admitted to the Department of Psychiatry of the Pomeranian Medical University, ie. the unit designated to treat patients with psychiatric disorders tested positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

Transformation of a regular mental health facility into a unit specializing in the treatment of patients infected with a highly contagious virus was an immense and challenging endeavor in itself. The number of hospital beds had to be drastically reduced. That put an additional strain on other, already overcrowded, psychiatric hospitals in the region. The ward had to be equipped with a mechanical ventilator and blood gas analyzer. Apart from standard medical staff consisting of psychiatrists and psychiatric nurses, constant on-site presence of an anesthesiologist and an anesthesiological nurse was mandatory as well as daily support from an internal medicine specialist. In order to provide safe means of patient transportation (eg. to the unit where the necessary CT scans could be performed), additional ambulance units needed to be dispatched, thus straining emergency medicine system in the region. Incidentally, the design of the building itself, as is common in psychiatric hospitals[3], did not meet the standards created for units responsible for treatment of infectious diseases. Establishing secure pathways, clean rooms and airlocks for personnel to use therefore proved to be somewhat of a challenge, too.

On admission to the Psychiatry Department, the patient reported no somatic complaints, although minor cough was observed. Preliminary laboratory tests showed no disturbances in blood morphology, coagulation times, sodium and potassium levels, TSH, AST, ALT, GGTP and Glucose serum levels. Valproate concentration on preliminary dose was diagnosed below therapeutic level at 30,2 µg/ml. CRP was 36,17mg/l and CPK 243 U/l. Body temperature was 36,6 degrees Celsius, blood pressure 122/80 mmHg, heart rate 110/min and breath count at 15/min. Chest CT scan revealed changes char-

acteristic of interstitial lung inflammation- in segments 1,2 and 6 of left lung tissue consolidation zones of 30mm and 53mm and 18mm level of fluid in the left and 14mm in the right pleural cavity. The patient was conscious and alert, oriented to person, but not to time. His speech was slurred, mood labile and affect blunted. Increased psychomotor activity was observed. The patient denied hallucinations and there were no signs thereof manifest in his behavior. He expressed delusions of grandeur, believing that he had established a system to win every lottery, with a great fortune awaiting him and that he had discovered a way to cure coronavirus infection and therefore wanted to "treat other patients". He denied any suicidal ideation and claimed never to have attempted suicide. His sleep pattern was disturbed. Upon consultation with an infectious diseases specialist, his treatment was altered and he was administered azithromycin 500mg for 5 days and chloroquine 500mg for 10 days. Due to potential harmful interaction with coronavirus treatment, citalopram was discontinued and levomepromazine was reduced by 50mg daily up to discontinuation [4]. Valproate dosage was slowly increased to 2000 mg/d, olanzapine and tiapride were introduced and their dosages gradually increased to 20 mg/d and 400 mg/d, respectively. Lorazepam in the maximum dose of up to 3 mg/d was used temporarily.

On the first day after the admission, the patient's state rapidly deteriorated. His cough exacerbated, which was initially attributed to the fact that he started smoking immediately after the medical examination had concluded. However, what ensued were a rapid increase in body temperature of up to 38.2 Celsius centigrade, and in breath count of up to 25/min. The patient reported shortness of breath, a feeling of weakness and fatigue. Fortunately, administration of 1g of paracetamol alleviated the above symptoms.

Nevertheless, during the first weeks into his treatment, the patient would not obey the quarantine ward rules. He left his room on a regular basis, visit other patients, all the while knowing that such activity was prohibited. His inappropriate behavior was attributed to delusional ideation. He constantly removed his face mask, arguing that he had difficulty breathing. Howev-

er, he would not limit smoking despite strict recommendations.

Due to introduced treatment, the patient's mental state gradually improved. He regained his full awareness, delusions had withdrawn, his mood stabilized, psychomotor activity and sleep pattern normalized. His affect remained blunted. As regards his behavior, the patient ceased to visit other patients' rooms and remained in his own room more, but did not reduce smoking and would still object to wearing a protective mask at all times. His somatic state did not deteriorate any more over the remainder of his treatment. Follow-up laboratory test results showed no disturbances, and valproate concentration increased to 51,8 µg/ml. Real time-PCR assay for SARS-COV-2 detection were performed on a weekly basis. . On 27.04.20 first negative result was obtained. On the next day confirmation test yielded negative result as well. The patient spent another week of quarantine in hospital in order to minimize the risk of possible faecal-oral transmission[5,6] and was discharged on May 05, 2020 with diagnosis of organic delusional disorder, alcohol dependency syndrome and COVID-19.

Treatment of COVID(+) patients with psychiatric disorders proves to be a challenging task. Weak compliance, presence of psychotic features and their effect on patients' behavior render containment of infection in regular psychiatric settings next to impossible. Rapid and unpredictable character of the novel disease requires immediate availability of highly specialized and well-equipped intensive care units. Transformation of typical, remote, solitary psychiatric facilities into Infectious diseases hospitals proves

to be a problematic and potentially risky task. Therefore, our experience dictates that creation of smaller, specialized quarantine units with the support of a potentially on-site consulting psychiatrist in hospitals with full diagnostic capabilities and intensive care units seems to be a promising alternative.

*The Authors declare no conflict of interest.*

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