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A prolonged course of COVID-19 in a person with dementia

SHORT CASE REPORT

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BACKGROUND

The course of COVID-19 may be particularly long-lasting in elderly patients. Caring for patients with dementia suffering from COVID-19 is challenging due to unclear symptom presentation, delirium, and maintaining isolation procedures.

CASE PRESENTATION

A man in his sixties with dementia, hospitalised in a psychogeriatric ward, presented with mild upper respiratory tract symptoms and recovered within 24 hours. Ten days later he developed more severe symptoms. PCR test for SARS-CoV-2 was positive. Over the following two months his clinical state fluctuated, from almost symptom-free days to being bedridden and assessed as potentially terminal. After the initial positive test, he had three consecutive negative tests, before he again tested positive for SARS-CoV-2. Uncertainty as to whether the patient remained contagious resulted in isolation of the patient for over two months.

INTERPRETATION

PCR testing of SARS-CoV-2 does not differentiate between intact virus and remnants thereof, and patients may test positive for a long time. This along with a fluctuating clinical course makes it difficult for clinicians to decide when to end isolation of COVID-19 patients.

We present a case history of a patient with severe dementia and COVID-19 who had a prolonged and fluctuating course of illness. The PCR tests for SARS-CoV-2 alternated between positive and negative results, which complicated the diagnosis and choice of isolation regime.

A man in his sixties with severe Alzheimer-type dementia developed symptoms in the upper respiratory tract with a runny nose and a slight cough. Some months previously, he had been admitted from a nursing home to the psychogeriatric department because of psychomotor agitation. He had no

previous history of cardiac or pulmonary disease. The day after symptom onset, he was asymptomatic. Thus, he was not tested for SARS-CoV-2, since his condition was believed to be a common cold. Because of recurring symptoms and a new onset of fever ten days later, the patient was isolated and tested for SARS-CoV-2. Two days later, the result came back positive.

In the weeks that followed, the patient was bedridden. After two weeks he was considered pre-terminal because of dyspnoea and considerable general frailty. Mechanical ventilation was discussed, but assessed as not relevant after a consultation with the somatic hospital.

The further course of disease was of fluctuating nature. The dominant respiratory symptoms included a runny nose, cough and dysphagia. He also had a recurrent fever, especially in the afternoon and evening. After some weeks he also developed atypical symptoms, such as noticeably pale hands, rust-coloured urine, swollen feet and orange-coloured blotches on the upper and lower extremities and nails. In terms of behaviour, during better periods he was wandering and agitated. Maintaining infection control procedures was at times challenging. Even many weeks into the course of disease, his best days were not as good as before symptom onset. The clinical picture, characterised by fluctuations in activity and cognition, was fully consistent with delirium.

An oropharyngeal/nasopharyngeal sample for SARS-CoV-2 was analysed with a polymerase chain reaction test (PCR) on several occasions during the course of disease (on days 10, 40, 49, 62, 68 and 78, respectively). Proper collection of the sample was occasionally challenging. The first and the penultimate tests were positive, the others came back negative. The first positive test had a low cycle threshold (Ct) value (19), while the second and final positive tests had a high Ct value (38). C-reactive protein (CRP) was slightly elevated throughout the course of disease, with the highest value (83 mg/l) after two weeks of illness. A differential count of white blood cells showed normal findings or only a slightly elevated level with no obvious relation to disease intensity. There was no suspicion of a bacterial superinfection.

With the exception of the days when he was considered to be at a pre-terminal stage, his nutritional intake was generally good. More than two months after symptom onset he had his last day with fever. The remaining symptoms also subsequently receded. For the next seven days the patient had no clinical signs of respiratory symptoms, and the last test for SARS-CoV-2 taken in this period was negative. The isolation of the patient could thus finally be lifted.

Discussion

In this case history, a patient with severe dementia had symptoms of COVID-19 for a total of 70 days. Tests to confirm SARS-CoV-2 were performed at six different times during the course of disease over a period of two months. Because of persistent mild respiratory symptoms, fluctuating general condition and peaks of fever, we were hesitant to end isolation in spite of the initial negative tests. This caution was supported by a positive test that came back 68 days after symptom onset.

Examination for COVID-19 in patients with severe dementia is challenging. We considered it inappropriate and stressful for the patient to be transferred to a somatic hospital for diagnostic imaging and further examination. Our assessment of the patient's infectiousness was therefore based on the clinical course and repeated PCR measurements from the upper respiratory tract.

A PCR test for SARS-CoV-2 does not distinguish between intact and residual virus (1). The test can be positive for several weeks after recovery from infection, and a positive test does not necessarily signify that the patient remains infectious. A high Ct value, like the one we observed in the last positive test, may indicate a low level of infectiousness (2). The risk of infection is assumed to be at its highest around the onset of illness (3). The Norwegian Institute of Public Health (NIPH) recommends that isolation in a health institution be lifted when the patient is asymptomatic *and* when *either* two subsequent PCR tests come back negative *or* when seven symptom-free days have passed (3). Because of persistent symptoms, we were therefore hesitant to end the isolation. NIPH defines an asymptomatic state as achieved when a patient has returned to their habitual normal condition or no longer has the symptoms in question. In this patient, several weeks passed before he returned to his normal condition, and because of the respiratory symptoms we decided to continue isolation for ten weeks after disease onset. The possibility of false-positive PCR results is also present, especially with a low viral load and problems with the collection of samples, as may happen in patients with a reduced ability to cooperate. The patient's dementia complicated the understanding of the symptoms because of his inability to give informed consent and communicate his experience of illness, his wandering, psychomotor agitation and atypical symptoms. Whether all the atypical symptoms were caused by COVID-19 remains uncertain. In addition, the course of disease was complicated by what we considered to be delirium. This is a common condition in cases of COVID-19 in patients with dementia (4). Delirium takes a fluctuating course, with a variety of neuropsychiatric symptoms. As a result, it can often be difficult to distinguish delirium from a clinical exacerbation of dementia. The challenges associated with infection control and adapted mobilisation are thereby reinforced.

A prolonged course of COVID-19 most commonly occurs in elderly people (5). The healthcare services should be aware that such courses of illness are extremely stressful for the patients, their relatives and care staff. Despite the fact that patients with COVID-19 are most infectious around the onset of illness, it is difficult to choose an isolation regime for prolonged courses of disease in elderly patients with dementia. Infection control can be especially burdensome for this patient group, and the most serious courses of disease are also observed in the most frail patients (6).

The patient's next of kin have consented to the publication of this article. The use of clinical information has been approved by the data protection officer at Innlandet Hospital Trust (case number 137313). The article has been peer reviewed.

LITERATURE

1. Folkehelseinstituttet. Molekylær diagnostikk av Sars-Cov-2. https://www.fhi.no/nettpub/coronavirus/testing-og-oppfolging-av-smittede/molekylar-diagnostikk/ Accessed 23.8.2020.

2. Bullard J, Dust K, Funk D et al. Predicting infectious SARS-CoV-2 from diagnostic samples. Clin Infect Dis 2020; cia638. [PubMed][CrossRef]

3. Folkehelseinstituttet. Opphevelse av isolasjon ved covid-19. https://www.fhi.no/nettpub/coronavirus/testing-og-oppfolging-av-smittede/opphevelse-av-isolasjon/ Accessed 24.7.2020.

4. Rogers JP, Chesney E, Oliver D et al. Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: a systematic review and meta-analysis with comparison to the COVID-19 pandemic. Lancet Psychiatry 2020; 7: 611–27. [PubMed][CrossRef]

5. COVID-19 Epidemiologisk trend og fokus: Symptomer. København: Statens serum institut, 2020. https://files.ssi.dk/COVID19-epi-trendogfokus-25052020-us12 Accessed 15.6.2020.

6. Hewitt J, Carter B, Vilches-Moraga A et al. The effect of frailty on survival in patients with COVID-19 (COPE): a multicentre, European, observational cohort study. Lancet Public Health 2020; 5: e444–51. [PubMed][CrossRef]

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