Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Reactivation of COVID-19 pneumonia: A report of two cases

Dear Editor

In April 2020, information about the first cases tested positive for COVID-19 again after having recovered from the infection, documented with two negative samples within 24 hours, were brought to public attention in South Korea.[1] This issue raises concern weather more precautions should be taken in declaring recovery from COVID-19 infections and monitoring of vulnerable patients. We are reporting two cases of patients with PCR-confirmed COVID-19 pneumonia, who experienced reactivation after negative PCR sampling.

Case 1

On March 09th 2020, an 81-year-old woman was transferred to our hospital from a psychiatric institution due to fever and cough. Past medical history was remarkable for non-insulin-dependent diabetes mellitus, coronary artery disease, atrial fibrillation and bipolar disorder. Laboratory results on admission showed leukocytosis of 11.4 10^9/l and C-reactive protein (CRP) of 100mg/l. Arterial blood gas analysis on ambient air revealed a pO2 of 7.72 kPa and pCO2 of 8.24 kPa. Chest X-ray displayed infiltrates in the left upper and lower lobe. Nasopharyngeal swab resulted in a positive PCR for Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2). The patient was hospitalized and treated symptomatically. On day 3 of hospitalization, fever resolved while CRP was undulating. The patients' general state of health improved significantly during the following 2 weeks and oxygen saturation was 95%. On March 24th she was discharged after SARS-CoV-2-PCR had been tested negative by nasopharyngeal swab the day before.

On April 18th the patient was re-admitted for dyspnea, fever and confusion after PCR taken on 14th of April had again been positive for SARS-CoV-2. According to the family physician, symptoms had developed anew and gradually over the previous 4-5 days. On admission, laboratory results showed a CRP of 175 mg/L, creatinine of 118 µmol/L and sodium of 167 mmol/L. Computed tomography (CT) of the chest revealed infiltrates in the right upper lobe as well as bilateral pleural effusion. After discussion with the family physician further escalation of treatment was omitted. The patient died on April 22nd.

Case 2

A 77-year-old woman received transfemoral aortic valve replacement for severe aortic stenosis on March 23rd 2020 in another hospital and experienced ischemic stroke during the procedure. In the course of hospitalization, she developed cough and fever and was tested positive for SARS-CoV-2 by PCR from a nasopharyngeal swab. CT of the chest performed on March 28th was normal. Concerning COVID-19, the clinical course of disease was unremarkable and the patient was transferred to our hospital on April 1st. On admission, she was afebrile and hemodynamically stable. Laboratory results showed CRP of 13 mg/l and LDH of 685 U/l. Fever and respiratory symptoms had resolved. Nasopharyngeal swabs for SARS-CoV-2 were taken serially on April 2nd and 3rd resulting in negative PCRs and the patient was discharged to a rehabilitation facility on April 8th.

April 22nd the patient was re-admitted to our hospital from the rehabilitation facility due to non-productive cough for 4 days and positive PCR result for SARS-CoV-2. On admission, she presented with lymphopenia of 0.49 10^9/l, CRP of 47 mg/l and LDH of 615 U/l. Arterial blood gas analysis revealed hypoxemia of 8.8 kPa on ambient air. CT of the chest exhibited beginning ubiquitous ground glass opacities with predomination in the right upper lobe. Treatment was started with hydroxychloroquine and azithromycine as well as supportive oxygen. The patient is currently hospitalized on the COVID-19 isolation ward.

Discussion

So far, little is known about immunity after COVID-19 infection.[2] Ye et al. found evidence for COVID-19 reactivation in a small group of cases with no specific clinical characteristics to distinguish them.[3] With recurrence of symptoms and positive PCR-testing after clinical remission and negative nasopharyngeal swab in the presented two cases, reactivation of SARS-CoV-2 must be assumed. Re-infection appears unlikely since COVID-19 infection rates were low in the region of our hospital and the trend of new infections declining at the time the patients were treated. These cases underline that caution should be exercised especially in vulnerable patient populations even after they appear to have overcome the infection. Close monitoring on an outpatient basis appears crucial.

Author statement

All authors had access to the data and a role in writing the manuscript.

Declaration of Competing Interest

None

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