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Case report

CASE REPORT

Rapid recovery of taste and smell in a patient with SARS-CoV-2 following convalescent plasma therapy

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Learning point for clinicians

Loss of taste and smell commonly occurs in patients with SARS-CoV-2 infection. Early administration of convalescent plasma therapy may lead to a rapid improvement in symptoms, including a return of sense of taste faster than would occur without convalescent plasma therapy.

Background

The SARS-CoV-2 virus causes a spectrum of symptoms ranging from asymptomatic to respiratory failure. Many patients also suffer from a loss of taste and smell. A systematic review included 5649 patients and found a significant prevalence of both symptoms (3.2–98.3% for smell, pooled prevalence 41%, 5.6–62.7% for taste and pooled prevalence 38.2%).[1] Studies have reported a median taste and smell recovery time of 6–7 days (range 3–14).[2,3]

One trial with 35 322 patients found that passive antibody transfer using convalescent plasma infusions reduced mortality, most significantly when the therapy was administered within 3 days of covid-19 diagnosis.[4] Another smaller study showed an improvement in symptoms within 3 days of administration.[5]

Case presentation

A 65-year-old female patient presented to a secondary-care healthcare facility in Rehovot, Central Israel. She complained of having a high fever, cough, dyspnea on minimal exertion, nausea, headache, burning pain which radiated from her chest to her back and loss of her sense of taste and smell. Self-determination of oxygen saturation at home was 98% breathing room air. The saturation decreased to 96% following 5 min of walking in her house. Her past medical history included only asthma, which was managed with a fluticasone furoate/vilanterol (92/22 μg) combi-inhaler. A nasal swab taken the day before admission had tested positive for SARS-CoV-2 antigen.

Upon physical examination in the emergency department, she was hemodynamically stable with a temperature of 36.4°C. Her respiratory rate was within the normal reference range and her capillary oxygen saturation measured 95% on room air.

Blood tests

The full blood count revealed leukopenia (3.00 K/μl) and lymphopenia (0.8 K/μl). Hemoglobin and platelet counts were within the normal reference range. A biochemistry panel showed a raised lactate dehydrogenase (275 U/l). C-reactive protein, D-Dimer and Ferritin levels were all within the normal range.

An additional blood sample was taken to allow blood typing and crossmatching.

Imaging

A chest X-ray showed changes in the right lung base which were suspicious for the changes seen in pneumonia caused by SARS-CoV-2 (Figure 1).

The patient was admitted to the SARS-CoV-2 isolation unit where she received pharmaceutical treatment for SARS-CoV-2 according to local protocol. This consisted of oral

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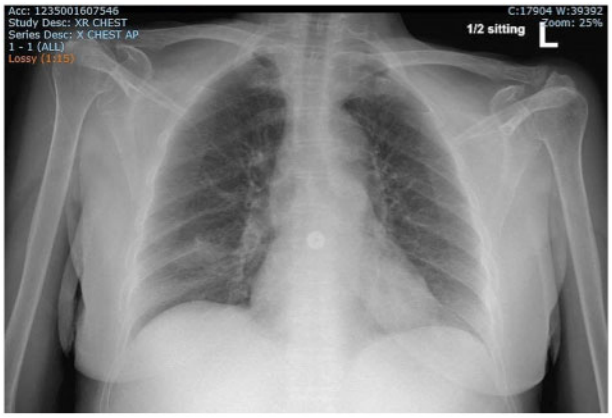

Figure 1. Chest X-ray on the day of admission showing changes in the right lung base suggestive of pneumonia.

dexamethasone 6 mg once daily, oral omeprazole 20 mg once daily, oral vitamin C 500 mg three times daily and oral zinc 50 mg once daily. She also received a prophylactic dose (40 mg) of subcutaneous enoxaparin once daily. In addition to the pharmaceutical treatment, she received two units of convalescent plasma therapy (∼200 ml each), 24 h apart, at ∼02:00.

A few hours after the first plasma treatment, the patient felt better and noticed that her sense of taste and smell had fully recovered. She received a second dose of plasma and was later discharged to her home to continue her recovery.

Discussion

The angiotensin-converting enzyme 2 is the functional receptor for the SARS-CoV-2 virus. It is highly expressed in the lungs and in several other organs including the epithelial cells of the oral mucosa. It has been suggested that damage to mucosal epithelial cells of the oral cavity in the early stages of SARS-CoV-2 infection may cause a loss of smell and taste.[2]

In this patient, administration of convalescent plasma resulted in the resolution of her loss of taste and smell after just 3 days of SARS-CoV-2 infection, which is a faster recovery than the average time reported in the literature. We suggest that the convalescent plasma therapy may have resulted in the resolution of the loss of taste and should be considered as an additional benefit of this therapy.

Written and informed patient consent was obtained prior to the submission of this case report.

Conflict of interest. None declared.

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