Dilemma of countering happy hypoxaemia COVID-19 patients

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DESCRIPTION

Some patients with COVID-19 experience low oxygen levels without dyspnoea.1 This paradoxical ‘happy hypoxaemia’ has baffled both physicians and patients. We report on one striking case that illustrates the marked difference that can be present between the respiratory symptoms experienced by the patient and objective signs of hypoxaemia and pulmonary disease. This paradox creates a management challenge.

A 65-year-old man who was an ex-smoker was hospitalised after testing positive for SARS-CoV-2 on PCR. He had experienced a fever for 2 days but was asymptomatic on admission, despite having an oxygen saturation of 86% in room air (oxygen therapy targeted SpO2 ≥94%). We started oxygen therapy from 2 L/min. Chest CT revealed mild bilateral pneumonitis in the lower lung lobes (not shown), but no signs of pneumonitis in the upper lobes (figure 1A). He was treated with oxygen, dexamethasone, favipiravir and low-molecular-weight heparin. Despite receiving treatment, his oxygen level worsened gradually, and he required supplemental oxygen at a flow of 4 L/min. His CT on day 3 revealed ground glass opacities (GGO) in the upper lung lobes (figure 1B). Thus, remdesivir and tocilizumab were added to his treatment. His CT on day 10 revealed that the GGO had transitioned to organising pneumonia (figure 1C). He remained unaware of his poor clinical condition and demanded to be discharged. His physicians agreed to discharge him on home oxygen therapy the following day. However, the following morning, his hypoxaemia had started to improve and he agreed to remained hospitalised. His oxygen level steadily improved and the supplemental oxygen was stopped on day 15. A repeat chest CT revealed that the organising pneumonia had regressed (figure 1D).

This case illustrates that some COVID-19 patients with happy hypoxaemia can recover rapidly. Physicians should encourage such patients to remain hospitalised and should monitor them closely if they are discharged early, in order to prevent excessive use of oxygen therapy.

The large number of COVID-19 patients is overwhelming hospitals and causing bed shortages. Patients with happy hypoxaemia may request early discharge. However, physicians should be cautious about early discharge of patients with happy hypoxaemia because remaining in hospital enables their therapy to be monitored, and they may make a more rapid recovery.

Figure 1 Chest CT images of the upper lobes of the lungs (A) day 0: there is no pneumonitis in upper lobes on admission. (B) day 3: Ground glass opacities have emerged. (C) day 10: the ground glass opacities have progressed to organising pneumonia. (D) day 15: the organising pneumonia has regressed but some ground glass opacities remain.

Learning points

► Happy hypoxaemia is not uncommon among COVID-19 patients.
► Patients with happy hypoxaemia can worsen and recover within a short period.
► It is preferable for some patients with happy hypoxaemia to remain in hospital for monitoring of their response to medication and to ensure the optimal use of oxygen therapy.

Contributors KK wrote the manuscript. KC, HT, TH and TI experienced to see this patient. All authors approved the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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