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COVID-19 and influenza A coinfection: A matter of principle[☆]



Coinfección por COVID-19 y gripe A: una cuestión de principios

Dear Editor,

In November 2019 a new health emergency emerged in the city of Wuhan with the world's first case of COVID-19.¹ At the same time, Spain was suffering its own seasonal flu epidemic. The first patient registered with coronavirus infection in Spain, a German tourist, was reported by the National Centre for Microbiology on 31 January 2020 in La Gomera in the Canary Islands. Until 24 February there were no reports of cases in Mainland Spain, until one, also considered as an imported case, was detected in Barcelona. Increasing numbers of people are suggesting that the influenza A epidemic in Spain may have masked the arrival of the COVID-19 virus weeks before the confirmed date in official records.²

We present the case of a patient admitted to our hospital on 18 January 2020 for bilateral influenza A pneumonia, in which a later PCR test on the nasopharyngeal exudate taken on admission confirmed co-infection with COVID-19. This was a 46-year-old patient from Madrid, with no relevant epidemiological history, who came in following onset of symptoms on 13 January consisting of a persistent dry cough brought on by breathing in, fever of up to 38 °C, arthromyalgia, significant prostration and progressively increasing dyspnoea. On examination, she had a temperature of 40 °C, blood pressure 95/64, heart rate 95 bpm, and O₂ saturation 89%. On auscultation, sounds were rhythmic without murmurs, with Velcro-like dry crackles in both lung fields. The initial analysis showed: leucocytes 1700/μl (neutrophils 1100, total lymphocytes 500), haemoglobin 13 g/dl, haematocrit 36%, platelets 72,000, CRP 1.5 mg/l, procalcitonin 0.09 ng/ml, ferritin 696 μg/l, CPK 516 U/l, LDH 712 IU/l, GPT 59 U/l, GPT 32 U/l and GGT 20 U/l. The D-dimer result was not available. The chest X-ray on admission showed consolidation in the left upper lobe and right perihilar region. A nasopharyngeal swab confirmed influenza A infection. Pneumococcal antigen and *Legionella pneumophila* serogroup 1 antigen were negative, as was the sputum culture. She was started on treatment with oseltamivir, oxygen therapy and cough suppressants. Four days after admission, as the patient's condition deteriorated both clinically and radiologically, with greater extension of the consolidation in her left lung and right perihilar region, reported as "worsening of the bilateral infectious or inflammatory process of the type of organising pneumonia", levofloxacin PLUS systemic corticosteroids were added to the treatment (Fig. 1). This produced a rapid clinical and radiological response, with the analytical parameters described returning to normal, allowing the patient to be

discharged from hospital with a tapering regimen of corticosteroids and baseline saturation of 95%. Four months later, the patient had been asymptomatic since discharge, but requested a PCR retest on the sample collected on 18 January because of a legal problem with her medical insurance, and in the light of the epidemiological situation of a coronavirus pandemic. The retest confirmed co-infection by SARS CoV-2.

The interest of our case is based on the verification of the presence of COVID-19 infection in Spain, prior to the data reported so far, the fact of co-infection with influenza A in the same process,³ and the rapid resolution of her clinical and radiological condition with the use of systemic steroids. Despite the recognised efficacy of steroids in treating severe respiratory symptoms during previous outbreaks caused by other coronaviruses (SARS and MERS),⁴ there is a strong recommendation against their use in the large amount of literature created as a result of the pandemic.^{5–7} Previous studies associate the use of steroids with a delay in the release of the virus without a clear improvement in survival. However, results are beginning to emerge showing reduction in deaths in specific stages of the disease, once viral replication has been controlled,⁸ which reflect the benefits in terms of their use as an immunomodulator in the inflammatory phase of infection. The pathology findings in series of cases on lung damage associated with the virus, such as the formation of hyaline membranes and evidence of fibrinous and organising pneumonia, may justify administration of steroids in these circumstances, to prevent subsequent development of respiratory distress.^{9,10} We hope that time and a better understanding of the disease will provide more evidence regarding their use.



Fig. 1. Chest X-ray on day four in hospital: progression of consolidation in the left lung and right perihilar region. Small bilateral pleural effusion.

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