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Scientific letter

Impact of COVID-19 pandemic on hepatitis C elimination from the clinical microbiologist perspective. Are we ready?☆

Visión microbiológica del impacto de la pandemia de COVID-19 sobre la eliminación de la hepatitis C. ¿Estamos preparados?

Spain has been recognised as one of the best-placed countries in the world to achieve the goal of eliminating hepatitis C by 2030[1–3], in accordance with the World Health Organization's (WHO) 2016 directives[4]. This has undoubtedly been aided in particular by the near-universal implementation of one-step diagnosis in microbiology departments of the National Health System[5], as well as the incorporation of alerts in the reports issued[6], and also, without doubt, strategic initiatives including diagnosis via dried blood spot (DBS) testing in settings with vulnerable and difficult-to-access populations, capture of recently diagnosed and unreferred patients, and finally, recapture of already-known patients with HCV infection who were lost to follow-up. Through all of these contributions, clinical microbiology has positioned itself as a central pillar of the HCV elimination strategy in Spain.

The COVID-19 pandemic has become a huge obstacle to achieving the WHO's ambitious goal of eliminating hepatitis C by 2030. In our country, the pandemic caused by SARS-CoV-2 has presented an immense challenge for our National Health System, especially as Spain has been one of the most affected countries. In the absence of a vaccine or effective treatment, diagnosis is the only way of being able to contain the pandemic, by detecting contagious individuals, isolating them to avoid new infections and starting contact tracing. This challenge therefore particularly affects our hospitals' microbiology departments, which are experiencing an exponential increase in diagnostic testing for SARS-CoV-2.

The consequences of the COVID-19 pandemic are starting to manifest in the negative impact that it is having, to varying degrees, on HCV elimination in different countries as a result of the availability or resources and priorities[7,8]. As microbiologists, we are also witnessing with concern the paralysis or deceleration, to a greater or lesser degree and for various reasons, of most of the initiatives listed above, and we believe that if this continues we run a serious risk of starting to go backwards in our efforts to eliminate hepatitis C.

It is therefore necessary to try as far as possible not to abandon these lines of action that have been so successful, though always remaining within the bounds of realistic optimism and in the hope that the negative economic effects of the pandemic will not have an impact at an institutional level on the clear benefit of hepatitis C elimination. Clinical microbiologists are truly "slaves" to this pandemic. Our "new normal" has enabled us to "get back to" our work, with the addition of the enormous care load resulting from the pandemic. As professionals, we need to design strategies to – in the case of hepatitis C elimination, and in many other fields where clinical microbiology plays a fundamental role – enable us to minimise the impact of the COVID-19 pandemic. Although this is a difficult task, we must fight to obtain the resources we need to be able to continue.

Finally, in spite of the negative impact, a glimmer of opportunity has presented itself: the pandemic has thrust to the forefront the use of mass testing, contact tracing, etc., and in this sense, when we look to a future without coronavirus, it is important that we consider certain new possibilities for hepatitis elimination, such as sample pooling strategies for population screening, as well as highlighting the value of active screening protocols for infection[9].

In conclusion, as the European Association for the Study of the Liver makes clear in its latest document[10], we will continue to work towards the goal proposed by the WHO of eliminating hepatitis C by 2030, constantly adapting to the COVID-19 pandemic our important diagnostic role in the treatment cascade that is key to eliminating HCV.

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Mycobacterium malmoense: When the weird starts to stop being weird☆

Mycobacterium malmoense*: cuando lo raro empieza a dejar de serlo*

In recent years, an increase has been observed in the isolation of microorganisms from the *Mycobacteriaceae* family such as *Mycobacterium malmoense*. These mycobacteria can cause both extrapulmonary and pulmonary disease, and are clinically relevant in 70–80% of patients with pulmonary disease.[1] We need to determine the presence or absence of disease based on agreed criteria,[2] taking into account that such disease generally occurs in immunosuppressed individuals with general or local immunodeficiency. There are case series in which it has been isolated in patients with cystic fibrosis, prior tuberculosis, pneumoconiosis[3] and Crohn's disease, but we present the case of a patient without underlying illness with pulmonary disease caused by *M. malmoense*.

A 45-year-old female smoker (15 cigarettes per day) with 23 pack years of cumulative tobacco use, with no other history. She was seen for chronic bronchitis, right pleuritic pain over the last year, and, in recent months, uncomplicated respiratory infections. A chest X-ray was ordered, which showed evidence of pulmonary infiltrate with cavitation in the right apex, which was not present on an earlier X-ray performed eight years earlier. The study was expanded with a chest CT which revealed the presence of nodular opacities, some with cavitation in the right upper lobe (RUL) (Fig. 1). A microbiological study in sputum was also ordered; bacilloscopies were negative, but *M. malmoense* was isolated in two determinations in the culture, and was also isolated in bronchoalveolar lavage.

The diagnostic guidelines of the American Thoracic Society (ATS)[2] and the British Thoracic Society (BTS) were reviewed, and based on microbiological, clinical and radiological criteria, the pathogenic nature of *M. malmoense* was evaluated and the decision made to begin treatment with azithromycin, rifampicin and ethambutol. No sensitivity study was performed due to the limited value in this case. The patient was informed of the possible adverse effects of the treatment and received advice on stopping smoking.

In follow-up visits at three and six months, the patient reported adequate tolerance of the treatment and that she was asymptomatic. Subsequent sputum bacilloscopies and mycobacteria cultures converted to negative at one month from the start of treatment, remaining so in subsequent monthly follow-ups. Likewise, an improvement was observed in the chest CT ordered at six months. Spirometry was performed, showing mild peripheral airway obstruction, with a negative bronchodilator test, thus ruling out the presence of chronic obstructive pulmonary disease at that time (forced vital capacity [FVC] 3,130 ml [110%], maximum expiratory volume in the first second of forced expiration [FEV1] 2380 ml (98%), FEV1/VC 74.85%, maximal mid-expiratory flow [MMEF] 75/25 1910 ml [57%]).

In view of the results, it was decided to maintain the treatment for one year, based on the BTS recommendations.[2] *M. malmoense* is an environmental mycobacterium that generally does not cause disease in humans and human-to-human transmission has not been described.

Infections of this type are more common in other environments, such as northern Europe, although its isolation is becoming increas-

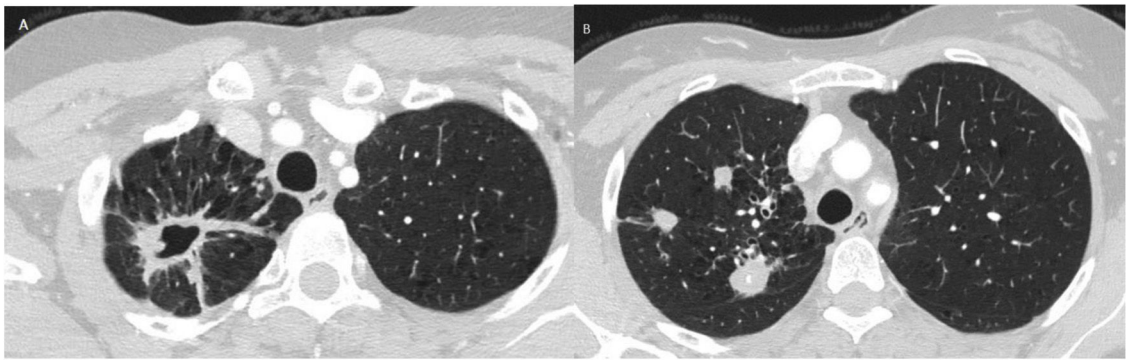

Figure 1. Chest CT: radiological findings suggestive of post-primary tuberculosis with involvement of apical and posterior segments of the RUL, traction bronchiectasis and bilateral centrilobular emphysema predominantly in the upper lobes. (A) Major cavitation of 36 mm associated with pleuroparenchymal scarring. (B) Multiple heterogeneous nodular opacities.

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