



Enfermedades Infecciosas y Microbiología Clínica

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Letter to the Editor

Point-of-care ultrasonography: Present and future in infectious diseases



Ecografía clínica: presente y futuro en enfermedades infecciosas

Dear Editor,

The speciality of Infectious Diseases may soon be a reality. In this scenario, it is essential to reflect on the training courses for our future residents and physicians, in order to guarantee that they receive comprehensive and quality training in all aspects related to infectious diseases.

Within the resources currently available, point-of-care ultrasound (POCUS) has gained special importance in recent years. This technique, characterised by being quick, harmless and non-invasive, is performed directly at the patient's bedside and provides immediate results to the operator, complementing the physical examination and speeding up clinical decision-making. Despite its progressive introduction in a number of medical specialities, in many of which, such as Internal Medicine, it already forms part of the training programme, routine application in Infectious Diseases remains infrequent.

In the hospital setting, infectious disease is common and often carries high mortality rates, particularly in cases of sepsis, where approximately 50% of patients have no obvious source of infection or confirmed microbiological isolation at the time of diagnosis.¹ In these cases, multi-organ POCUS plays a crucial role, allowing us not only to identify the most probable source of infection, but also to rule out other possible causes of shock.^{2,3}

In the assessment of patients with respiratory symptoms, ultrasound is more sensitive than plain chest x-ray. It facilitates the visualisation of lung consolidations, both directly and indirectly, and allows differential diagnosis to be made with other causes of dyspnoea, thus saving unnecessary antimicrobial treatments, within the overall strategy of prudent use of antimicrobials. Additionally, this technique has demonstrated its effectiveness in the evaluation of pleural effusions and in assisting with their drainage.^{4,5}

Ultrasound is equally valuable in skin and soft tissue infections. It allows the depth of infection and the presence of collections amenable to drainage to be determined.⁶ Furthermore, it facilitates differential diagnosis with other disorders with a similar clinical presentation, such as venous thromboembolic disease, again allowing for rationalisation of antimicrobial use.

In patients with suspected endocarditis, it allows us to perform an initial assessment of the cardiac cavities and valves to identify vegetations or signs of complications such as valvular insufficiencies and abscesses.⁷

Its utility in infectious abdominal disease is equally broad. Among other aspects, It enables the evaluation of the bile duct in cases of suspected cholecystitis or cholangitis, the characterisation of liver abscesses, the evaluation and puncture of free fluid in suspected cases of peritonitis, the identification of signs

of ureteral obstruction and renal abscesses in complicated urinary tract infections, or bowel examination for signs of appendicitis or obstruction.⁸

In the out-of-hospital setting and in low-resource areas, its speed and relatively low cost position it as an essential tool in the management of tropical diseases. There is growing evidence of its effectiveness in diseases such as liver abscess, Chagas disease, schistosomiasis, echinococcosis and cysticercosis.⁹ It has also gained relevance in these settings in the evaluation of patients with HIV infection and tuberculosis.¹⁰

With all of the above, it is evident that, although POCUS requires specific training and its results may vary in sensitivity depending on both the patient and the physician performing the scan, there is no question of its value in the management of infectious diseases.

With a view to the creation of the speciality, we believe that, in addition to proposing the inclusion of this technique in the training courses of future specialists, the Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (SEIMC) [Spanish Society of Infectious Diseases and Clinical Microbiology] should take the initiative and promote the creation of a working group on the use of ultrasound in infectious diseases. The main goals of this group would be to promote research into new applications of POCUS in our field, to organise workshops and training courses for healthcare professionals, and to develop examination protocols in collaboration with the rest of the scientific societies. These joint efforts would ultimately aim to optimise the diagnosis and treatment of our patients, contributing to a broader and deeper understanding of infectious diseases.

Conflicts of interest

The authors of this manuscript declare that they have no relevant conflicts of interest that affect the impartiality or validity of the content of this article. This includes, but is not limited to, commercial relationships, consultancy work, sponsorships or financial benefits that might conflict with the submitted work.

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<https://doi.org/10.1016/j.eimce.2024.01.015>

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On the limitations of the tuberculous meningitis diagnosis



Sobre las limitaciones del diagn  stico de meningitis tuberculosa

Dear Editor,

In the original article “Mortality and sequelae of tuberculous meningitis in a high-resource setting: A cohort study, 1990–2017”,¹ the authors study the mortality and sequelae of tuberculous meningitis in a retrospective cohort of patients from 1990 to 2017. To make the diagnosis of this clinical condition, a uniform case definition was used based on expert opinion,² which highlights the difficulties of diagnosis posed by tuberculous meningitis. This definition was intended to try to facilitate the comparison of research data, rather than for use in clinical practice. Persons with microbiological or molecular confirmation of *M. tuberculosis* in the CSF are assigned confirmed tuberculous meningitis. The remaining cases are defined as probable or possible, using an expert-generated classification system where higher scores designate an increased likelihood of tuberculous meningitis. True cases are expected to be represented by all definite cases, most probable cases and some possible cases.³ It is striking to us that the authors of the article published in your journal have conducted a joint analysis of patients with a confirmed diagnosis along with other cases where said diagnosis is only probable or possible. In Table 1 of their article, these last two groups represent 79 cases of a total of 135 patients analysed (nearly 60% of the total). Given that we do not have absolute certainty that these patients indeed suffer from tuberculous meningitis, we believe that it would have been more appropriate to study only patients with a confirmed diagnosis. Having included

a heterogeneous group of patients in their analysis (with confirmed, probable and possible diagnoses), it is possible that the conclusions obtained have certain limitations.

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<https://doi.org/10.1016/j.eimce.2024.03.008>

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