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SPECIAL ARTICLE

Positioning document on incorporating point-of-care ultrasound in Internal Medicine departments[☆]



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Abstract This positioning document describes the most important aspects of clinical ultrasonography in the internal medicine setting, from its fundamental indications to the recommended training period. There is no question as to the considerable usefulness of this tool in the standard clinical practice of internists in numerous clinical scenarios and settings (emergencies, hospital ward, general and specific consultations and home care). Ultrasonography has a relevant impact on the practitioner's ability to resolve issues, increasing diagnostic reliability and safety and providing important information on the prognosis and progression. In recent years, ultrasonography has been incorporated as a tool in undergraduate teaching, with excellent results. The use of ultrasonography needs to be widespread. To accomplish this,

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we must encourage structured training and the acquisition of equipment. This document was developed by the Clinical Ultrasonography Workgroup and endorsed by the Spanish Society of Internal Medicine.

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PALABRAS CLAVE

Ecografía clínica;
Ultrasonidos;
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Formación

Documento de posicionamiento sobre la incorporación de la ecografía clínica en los servicios de Medicina Interna

Resumen Este documento de posicionamiento describe los aspectos más importantes de la ecografía clínica en el ámbito de la Medicina Interna, desde sus indicaciones fundamentales hasta el período de formación recomendado. Actualmente ya no quedan dudas sobre la gran utilidad de esta herramienta para la práctica clínica habitual del internista en múltiples escenarios clínicos y ámbitos de actuación (urgencias, planta de hospitalización, consulta general y específica y atención domiciliaria). Su uso tiene un impacto relevante en la capacidad de resolución del profesional, al aumentar su fiabilidad y seguridad diagnóstica, además de proporcionar información pronóstica y evolutiva importante. Además, en los últimos años se ha incorporado como una herramienta en la enseñanza pregrado con excelentes resultados. Por tanto, es necesario generalizar su uso y para ello se debe fomentar la formación estructurada y la adquisición de equipos. El documento ha sido elaborado por el Grupo de Trabajo de Ecografía Clínica y avalado por la Sociedad Española de Medicina Interna.

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Background and concepts

Clinical ultrasonography or point-of-care ultrasound consists of the systematic application of ultrasound as an extension and supplement to conventional physical examinations. The Spanish Society of Cardiology (SEC) also refers to clinical cardiac ultrasonography as echocardiography. Similarly, the concept of multiorgan ultrasonography has been suggested as an instrument for the comprehensive evaluation of various regions of the body. Clinical ultrasonography in no way replaces board-certified evaluations performed in radiology rooms or cardiac imaging laboratories.¹

The main purpose of clinical ultrasonography is to rule out a relevant disease (given the technique's high sensitivity and negative predictive value). Given that ultrasonography competence is achieved within a short training period, incorporating ultrasound training within the internal medicine specialty program is feasible. Moreover, the procedure lasts approximately 15 min and should therefore be acceptable for the internist's clinical practice. This basic tool offers the following features:

Streamlining of the diagnostic process, which can provide a prognostic benefit in some cases.

- Screening of numerous diseases.
- Monitoring of certain treatments.
- Implementation of invasive procedures, such as extraction of fluids and cannulation of central venous pathways.

- Assessment of the patient's hemodynamic and congestive state.

Table 1 describes the main indications for clinical ultrasonography and the elements that should be assessed.

Key aspects of clinical ultrasonography in internal medicine

Patient safety

Ultrasonography facilitates the safety of certain procedures. Specifically, the ultrasound-guided cannulation of central pathways markedly decreases associated complications.²⁻⁷ In the hands of nurses, ultrasonography also enables the cannulation of peripheral pathways of complex access, avoiding the need to use central venous catheters.⁸

Other "interventionist" procedures in which ultrasonography is of considerable assistance include thoracentesis and paracentesis. Reducing the risk of pneumothorax associated with thoracentesis is especially important.^{9,10} Performing a blind thoracentesis is therefore considered inappropriate when the center has an ultrasound machine.

Another essential point related to patient safety is the promoting of measures that prevent nosocomial infections associated with the use of catheters and tubes. Ultrasonography is useful for detecting acute urine retention and pathological postvoid residue and for monitoring blood

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