

Letter to the Editor

Artificial intelligence in echocardiography

*La inteligencia artificial en la ecocardiografía*

To the Editor,

Application of artificial intelligence (AI) to the health field is revolutionizing medical knowledge and practice, including diagnostic imaging by echocardiography. From the perspective of cardiac sonographers, as the development and use of AI increases, the basic concepts of this technology are gaining importance as a part of continuous improvement in their daily work.

Lonrarc et al.¹ have indicated that AI has an impact on improving automation and standardization of all the components of the clinical workflow. This includes other imaging modalities such as computed tomography and magnetic resonance, which are affected by a strong dependence on the experience and variability between specialists.

Two subfields serve as the basis for most IA functions: *machine learning* (automatic learning), which involves programming a computer to store and analyze data using statistical management techniques in order to learn from experience and enable predictions in obtaining new data; and *deep learning*, which uses multilayer configurations known as artificial neural networks and is useful for processing huge amounts of data.²

AI applied to echocardiographic examination has helped to improve the accuracy of image reading, as machine learning and deep learning algorithms allow accurate recognition of 95% to 98% of the slices obtained. This enables faster, more confident examinations, and provides the information and time to compare, associate, and interrelate diagnostic concepts between all the imaging studies of a particular patient.³

It should be noted that there is some concern that this type of echocardiographic examination may replace the work of standard echocardiography. Nonetheless, the idea that their work could be substituted by remote robotic scanning systems motivates health professionals to rapidly acquire these necessary skills and techniques.⁴

In conclusion, AI is an important tool for echocardiography and an interesting element for image analysis, interpretation, and optimization.⁵ AI will not replace cardiac sonographers, but it will help make their practice more efficient.

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CONFLICTS OF INTEREST

None to declare.

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The danger of meta-analyses

*El peligro de los metanálisis*

To the Editor,

According to the Cochrane organization, improving precision is one of the main objectives of meta-analyses.¹ Effectively, most

studies that do not demonstrate statistically significant differences are only useful for recommending that a larger study—with the power to observe such differences—be carried out. Given the difficulty of obtaining a large enough sample size, meta-analyses represent a free, simple way to reduce the effect of random sampling.