



LETTER TO THE EDITOR

Appropriate use criteria for transthoracic echocardiography[☆]



Uso apropriado da ecocardiografia transtorácica

To the Editor,

As a cardiologist who is head of an echocardiography laboratory, I was interested and pleased to see the first article published on an important topic: the appropriate use of echocardiography in Portugal. I congratulate Dr. Paulo Fonseca and co-workers on their paper¹ in the December 2015 issue of the *Journal*.

The echocardiography laboratory of Hospital Central do Funchal covers the Portuguese island of Madeira, which has a population of around 260 000. A rapid rise in referrals for transthoracic echocardiography (TTE)² and the resulting increases in waiting lists and difficulties in triage for TTE led my team to analyze the rate of indications for outpatient TTE in Madeira, including all referrals from hospital outpatient clinics and all health centers on the island.

We performed a retrospective observational study that included 468 consecutive patients who underwent TTE on an outpatient basis between January and April 2014, in accordance with the 2011 appropriate use criteria (AUC) of the American College of Cardiology.³

The proportion of appropriate exams in our center was 76.1% (a similar figure to that of Fonseca et al.), with 12.8% inappropriate and 11.1% of uncertain appropriateness.⁴

The volume of outpatient TTE exams in our center is around 3000 per year, which means that around 400 inappropriate exams are performed annually.

Unlike in studies on other countries,^{5,6} but interestingly like Fonseca et al., we saw a higher rate of inappropriate TTE requested by cardiologists than by physicians of other specialties (10.5% vs. 2.4%, $p < 0.0001$). Most (78%) of these inappropriate exams were repeat TTE of patients with no change in clinical status, also as in Fonseca et al.

In addition to the factors described by Fonseca et al. and by Ana Galrinho in her accompanying editorial comment,⁷ another possible explanation for this finding is related to the clinical information included in the referral form. The process of applying the AUC in our center was independent of the referring physician; prime importance was given to the clinical information contained in the referral request. The clinical information provided by cardiologists was incomplete in 88.2% of cases, compared to 11.8% of those referred by physicians of other specialties ($p = 0.0002$), and this may skewed the application of the AUC. Information was defined as incomplete if the AUC could not be applied solely on the basis of the referral request and a thorough search of the patient's electronic medical record was needed for a correct classification.

It is my personal belief that even among cardiologists experienced in echocardiography there is a lack of familiarity with the AUC guidelines, which are also lengthy and somewhat dense. Hopefully the guidelines of the European Association of Cardiovascular Imaging, which were designed for use in Europe, will help fill this gap.⁸

The results of our study led us to set up a structured referral system for TTE and an easily accessible and comprehensible checklist to be used throughout the Autonomous Region of Madeira that establishes AUC and scheduling priorities. We look forward to seeing whether implementation of these changes will have a positive impact on the numbers of TTE referrals to our center.

In my opinion, medical societies, and echocardiographic societies in particular, as well as the bodies responsible for regulating training programs for interns of different medical specialties, need to make greater efforts to increase awareness of the AUC for TTE.

Inappropriate referral for echocardiography is costly and may contribute to an overall decline in the quality of health-care, by compelling patients to undergo unnecessary initial and repeat exams that reduce the resources available for those who really need them.

The key is always to "refer the right patient for the right test at the right time".

Conflicts of interest

The authors have no conflicts of interest to declare.

[☆] Please cite this article as: Gomes S, Freitas E, Pereira D. Uso apropriado da ecocardiografia transtorácica. Rev Port Cardiol. 2019;38:229–230.

References

1. Fonseca P, Sampaio F, Ribeiro J, et al. Critérios de adequação para ecocardiografia transtorácica num centro terciário. *Rev Port Cardiol*. 2015;34:713–8.
2. Pearlman AS, Ryan T, Picard MH, et al. Evolving trends in the use of echocardiography: a study of Medicare beneficiaries. *J Am Coll Cardiol*. 2007;49:2283–91.
3. Douglas PS, Garcia MJ, Haines DE, et al. ACCF/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SCCT/SCMR 2011 appropriate use criteria for echocardiography. *J Am Coll Cardiol*. 2011;57:1126–66.
4. Procedimento concursal nacional de habilitação ao grau de consultor da carreira médica, aberto pelo aviso n.º 140340/2014, publicado no Diário da República (2.ª série), n.º 242, de 16 de Dezembro de 2014.
5. Ballo P, Bandini F, Capecchi I, et al. Application of 2011 ACC/AHA appropriateness of use criteria in hospitalized patients referred for transthoracic echocardiography in a community setting. *J Am Soc Echocardiogr*. 2012;25:589–98.
6. Gurzun M, Ionescu A. Appropriateness of use criteria for transthoracic echocardiography: are they relevant outside the USA? *Eur Heart J Cardiovasc Imaging*. 2014;15:450–5.
7. Galrinho A. Comentário Editorial a «Critérios de adequação para ecocardiografia transtorácica num centro terciário». *Rev Port Cardiol*. 2015;34:719–22.
8. Garbi M, Habib G, Plein S, et al. Appropriateness criteria for cardiovascular imaging use in clinical practice: a position statement of the ESC/EACVI taskforce. *Eur Heart J Cardiovasc Imaging*. 2014;15:477–82.

Susana Gomes*, Estela Freitas, Décio Pereira

Laboratório de Ecocardiografia, Serviço de Cardiologia do Hospital Central do Funchal, Funchal, Portugal

* Corresponding author.

E-mail address: susanagomes@netmadeira.com (S. Gomes).