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EDITORIAL COMMENT

Estimating the pre-test probability of coronary artery disease according to the ESC guidelines: Are we getting there?

Probabilidade pré-teste de doença coronária obstrutiva: o ajustar da mira!

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In 2019 the European Society of Cardiology (ESC) updated its method for estimating the pre-test probability (PTP) of obstructive coronary artery disease (CAD) in the guidelines on chronic coronary syndromes.[1] In this issue of the *Journal*, Lopes et al. present a single-center cross-sectional study enrolling 320 consecutive patients with stable chest pain undergoing coronary computed tomography angiography (CCTA) for suspected CAD, aiming to compare the performance of the new PTP method with the prediction model in the 2013 guidelines.[2]

Using as reference standard the presence of obstructive coronary disease, defined as ≥50% stenosis on CCTA (or invasive coronary angiography when it was performed subsequently), the authors compared the two prediction models in terms of calibration, discrimination and the ability to change the downstream diagnostic pathway.

Despite the important limitations of the study, particularly the absence of coronary angiography (and so of the defined gold standard) in a proportion of patients with calcium score >400 – in which the presence of obstructive CAD was directly assumed or confirmed according to subsequent functional tests, if performed – this article further supports the adoption of the 2019 PTP estimation method. According to the study results, the updated 2019 prediction model provides a more accurate estimation of the PTP of obstructive CAD than the previous model: while the 2013 model significantly overestimated the likelihood of obstructive CAD, the updated 2019 method showed good calibration, with a net reclassification improvement of 10%, and similar discriminative power. Another potential advantage of the new PTP model – which was not addressed in this publication – is the incorporation of dyspnea as a discriminatory symptom of CAD, enabling assessment of PTP in previously excluded patients.

Besides improving disease prediction, adoption of the 2019 ESC guidelines will most certainly have a significant impact on the appropriate selection of non-invasive testing for the diagnosis of CAD. As the authors correctly state, the new guidelines not only updated the PTP model but have simultaneously lowered the threshold for testing, aiming to keep false negatives below 5%. Taken together, these new recommendations tend to emphasize the unique role of CCTA in CAD assessment, based on its superior performance in ruling out CAD in populations with lower PTP. It is now clear that a diagnosis of CAD should no longer be

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based solely on treadmill testing and catheterization or on other functional testing but should rather take advantage of the different methods available, according to the different pre-test probabilities under study. Technical developments and evidence accumulated in recent decades have supplied the necessary tools for a much more precise and personalized medicine and pushed guidelines forward. However, the bottleneck for guideline-driven quality medicine in CAD diagnosis, at least in some European countries like Portugal, seems to be the lack of availability and/or reimbursement for the correct test. In the name of quality of care, current efforts should focus on removing these constraints, in order to guide the appropriate management of patients with suspected CAD, while avoiding exposure to unnecessary procedures and costs.[3]

Quality studies like the one presented in this issue of the *Journal* by Lopes et al. may provide a much-needed perspective on the real-world clinical impact of guideline changes and are therefore very welcome. The authors should be congratulated for their work, while readers and the medical community in general should feel encouraged to act in order to break down all the barriers that block the application of current guidelines.

Conflicts of interest

The author has no conflicts of interest to declare.

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