



## EDITORIAL COMMENT

## Prime time for coronary calcium scoring: It should come, but will it?

### *Prime time para o score de cálcio coronário: deveria, mas... será que vai chegar?*

Nuno Bettencourt

Faculdade de Medicina da Universidade do Porto, Porto, Portugal



Coronary calcium scoring (CCS) is a simple, robust and powerful weapon for optimizing patient management that is still underused and poorly understood. Evidence shows that rather than identifying coronary stenosis and areas of ischemia, we should instead identify the patient at risk, using appropriate stratifying tools and treating high-risk patients accordingly while avoiding unnecessary medication in low-risk patients.<sup>1</sup> But, somehow, the appeal of identifying the responsible plaque and the exact area of myocardial ischemia involved in symptoms seems to outweigh any evidence that science can produce. As cardiologists, we like to know the mechanisms involved and try to act on them. Despite evidence that it is not really necessary to know exactly where the stenosis is and that stenoses do not need to be treated in stable coronary patients, years of common practice and cardiology teaching make us keep trying to find an obstructed vessel and areas of ischemia to act on. We are, once more, forgetting that rather than treating the stenosis and myocardial ischemia, we should be treating the patient. And patients with no obstructive disease are sometimes at higher risk of a coronary event than others with identified obstructive coronary artery disease (CAD). This is why fundamental information concerning overall coronary atherosclerotic burden and CV risk is frequently overlooked by physicians in general and cardiologists in particular.

CCS is one of the best stratification tools currently available. It is cheap, robust, and adds stratification power to all available clinical risk scores. It is currently indicated in asymptomatic intermediate-risk patients to further stratify CV risk and to manage accordingly, which is particularly important in the decision whether to start statin therapy.<sup>2–4</sup> Additionally, it is generally offered as supplementary information in symptomatic patients referred for computed tomography coronary angiography (CCTA).

In the very interesting paper by Matos et al.<sup>5</sup> published in this issue of the *Journal*, the authors retrospectively studied 467 patients who underwent CCTA for suspected CAD over a two-year period, aiming to assess the impact of CCS results on risk re-stratification by SCORE and MESA, two risk scores commonly used in clinical practice. In a subset of 184 patients, the impact of CCS on medical prescription was also studied, by comparing the prescription of statins and antiplatelet agents (APAs) before and after the examination according to three CAC categories (0, 1–100, and >100 Agatston units [AU]). As expected, the inclusion of CCS data resulted in the reclassification of risk in a significant proportion of cases. However, in the studied subgroup, the change in the proportion of patients receiving statins or APAs before and after the examination did not reach statistical significance. In the subgroup of patients with CCS >100 AU, there were increases of 10% and 15% in the prescription of statins and APAs (versus 2% and -1%, respectively, in patients with CCS 0 AU). The authors conclude that little change was

E-mail address: [bettencourt.n@gmail.com](mailto:bettencourt.n@gmail.com)

seen in the prescription of statins and antiplatelet therapy. I would not conclude that increases in prescription of this order of magnitude represent little change (despite the absence of statistically significant differences, which is mainly driven by the small sample size of 184 patients), but I tend to agree with the authors' disappointment at the lost opportunity for better treatment that these data represent in the vast majority of these patients.

This paper is therefore a wake-up call that touches a raw nerve: not all the information contained in a CCTA report is fully taken into consideration and translated into better patient management. This is unfortunately in line with previous studies from the same group<sup>6,7</sup> and data from other countries.

The ability of CCS to reclassify CV risk is well known and its use is recommended in the guidelines for therapeutic decision-making. However, its real effect on prescription patterns is unknown, especially when performed as part of a CCTA examination in symptomatic patients. In this context, the referring physician is focused on excluding obstructive CAD as the cause of symptoms and may undervalue or simply ignore the additional information offered by CCS.

Cardiologists, like the medical community in general, should be able to better utilize the amazing tools that science and technology have provided to us in recent decades. Some of the greatest achievements are not based on beautiful high-resolution images of the heart or high-tech state-of-the-art procedures. The magic of CAD treatment is to correctly identify patients in need of optimal medical therapy and to apply it in a timely fashion, while avoiding over-treatment and over-testing both in this population and in low-risk patients. CCS is a IIa indication in the guidelines in several contexts but seems to be overlooked both in primary care (where it would be most useful) and in hospital settings, as this study nicely demonstrates. While in the former, availability and reimbursement may be – in fact are! – the principale, in the latter, only tradition and the constant focus of procedure-driven cardiology on stenosis and ischemia can explain the underutilization of data that are readily available.

In a country fighting to keep health-related costs under control, where cardiovascular disease is the main cause of morbidity and mortality, better use of global cardiovascular risk stratification tools, particularly CCS, and treating accordingly, would most probably lead to better cardiovascular outcomes, while reducing unnecessary testing and inappropriate medication.

The evidence is there. If the data are also there, let's use them!

## Conflicts of interest

The author has no conflicts of interest to declare.

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