

Stratification of Cardiovascular Risk By Cardiac Computerized Tomography – Shall We Keep on Ignoring?

Marcelo Souto Nacif¹ and Adriana Dias Barranhas²

Universidade Federal Fluminense (UFF)¹, Niterói; Universidade Federal do Rio de Janeiro (UFRJ)², Rio de Janeiro, RJ – Brazil

In Volume 98, Issue 6, June 2012, we read with great interest the article written by Azevedo et al¹, in which the role of calcium scoring and coronary CT angiography in cardiovascular risk stratification was extensively discussed. The issue deserves thorough scientific discussion and the transition to everyday clinical practice should be rethought.

Although the intention has been to conduct a review based on scientific evidence in the literature, which often makes reference to populations not comparable to ours, it was observed that many of the studies used as scientific evidence represent a large portion of the Brazilian population. Examples of such are the works of Monteiro et al², Rosario et al³ and Azevedo et al⁴, in addition to the important CORE 64⁵, in which Brazil was the country that included the most patients.

We believe that the scientific base was very well prepared, but it lacked in discussing the transition to clinical practice. This is extremely important in line with the authors' experience, mainly due to the lack of Brazilian guideline updates, which

are dated from 2006⁶. In the last six years, clinical practice highlights the significant increase in the use of cardiac computed tomography (CCT), given that some services already use this method as a first option in cardiovascular risk stratification by noninvasive imaging.

Reinforcing that CCT is more than ready for use in daily clinical practice, the National Supplementary Health Agency (ANS) included computed angiotomography in the list of CT procedures, but what mostly caught our attention was the exclusion of the coronary calcium score, a technique that has higher scientific backing. Thus, two questions remain unanswered - what scientific evidence is still needed? Why are calcium scoring and coronary CT angiography not being widely used in clinical practice?

We believe this revision work was well done, but we find the discussion of the scientific evidence and its implementation in clinical practice to be very relevant. We know that cardiovascular risk stratification is of fundamental importance and, as doctors, we should offer the best medicine available to our population. Therefore, we suggest that we should not continue ignoring the CCT as a method of cardiovascular risk stratification.

Keywords

Risk Assessment; Calcium; Coronary Angiography; Coronary Disease; Tomography, Computed.

Mailing Address: Marcelo Souto Nacif •

Rua Barão de Cocais, 324, Bosque Imperial. Postal Code: 12242-042, São José dos Campos, SP – Brazil

E-mail: msnacif@yahoo.com.br, msnacif@gmail.com

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Reply

We would like to thank Doctors Nacif and Barranhas for their interest in our article¹ and for the opportunity to further discuss the application of calcium scoring in current clinical practice. We agree there is already a large volume of robust scientific evidence demonstrating the value of coronary calcium scoring in the stratification of cardiovascular risk of asymptomatic²⁻⁵ individuals. So why is it still not systematically used in everyday clinical practice? We believe that several factors are involved in the response to this question. The first factor relates to the concept of translational medicine, i.e., the long time interval existing between a new medical intervention (a new diagnostic test, a new drug or therapeutic procedure, for example) that has been discovered/proposed and its widespread implementation in clinical practice. This process is essential not only to test the safety and efficacy of the new procedure before it is used on patients, but also to be able to assess the cost-effectiveness of the proposed intervention. For some procedures, this process is simpler, and the “translational gap” is shorter. In the case of calcium scoring, due to the fact that it involves the use of ionizing radiation, and mainly because the method is being proposed as a *screening* test in asymptomatic individuals, the process becomes longer, arid and more time-consuming. Nevertheless, we believe that, at the moment, we can say with certainty that calcium scoring “passed” with flying colors throughout this entire process and, in the words of Doctors Nacif and Barranhas, it is more than ready to be integrated in daily clinical practice.

The second factor relates to the potential of the proposed procedure to change the clinical management of patients. At this point, calcium scoring still has long way to go. Even though, as reported in our revision paper, some important recent studies have shown that calcium scoring has the potential to

become an essential tool in clinical decision-making^{6,7}, this process is still incipient. Currently, calcium scoring has not yet been inserted in decision-making algorithms. We believe it is only a matter of time until calcium scoring is a part, for example, of the algorithms that define treatment with statins. However, before that happens, further studies are needed to better define the role of calcium scoring in each of the different clinical situations and how its outcome will help define clinical management. From our standpoint, this is one of the most relevant factors that still limits the wider use of calcium scoring in current clinical practice.

The third factor relates to the difficulty in obtaining permission for the examination by health plans. According to the most recent determination of the National (Supplementary) Health Agency, coronary calcium scoring is not included in the list of medical procedures compulsorily covered by health plans. For this reason, most of these plans do not authorize this procedure, even when prompted appropriately - in order to stratify the cardiovascular risk of the patient. Considering the volume and solidness of evidence in favor of calcium scoring accumulated over the last decade, we are convinced that it is time for the National Health Agency to review its position and include it in the list of compulsory medical procedures. In the face of current evidence, we have no doubt that, when properly indicated, calcium scoring will bring great benefit to patients and be confirmed as a cost-effective tool in cardiovascular risk stratification.

Sincerely,

Clerio F. Azevedo
Carlos E. Rochitte
João A. C. Lima

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