

## Letter to the Editor

**Usefulness of Coronary Computed Tomography Angiography in Asymptomatic Patients****Utilidad de la coronariografía no invasiva por tomografía computarizada en pacientes asintomáticos****To the Editor,**

We have read attentively the scientific letter by Descalzo et al.,<sup>1</sup> and would like to congratulate them on their interesting report. The relationship between cardiovascular risk factors and coronary artery disease has been extensively studied and, while risk scores are designed to predict cardiovascular events, they may also bear some relationship to the actual presence of the disease.

To stratify our patients, the European clinical practice guidelines recommend the use of risk scores and mention the SCORE system, validated in Spain, and also recommend, although to a lesser extent, the calcium score to reclassify asymptomatic patients at moderate risk.

In recent years, we have witnessed how technological advances achieved a progressive reduction in the radiation dose and an extraordinary improvement in the spatial resolution of the new coronary computed tomography scanners. The publication of multicenter studies has provided a better understanding of the diagnostic potential of this technique, and all of these factors have resulted in an exponential increase in the indications for and utilization of noninvasive coronary angiography (NCA), as is reflected in the increased number of appropriate clinical settings.<sup>2</sup> However, at the present time, according to the current recommendations for appropriate use, NCA findings in asymptomatic patients would only prove to be indeterminate in those at high risk. In asymptomatic patients, like those described in the report by Descalzo et al., previous studies have documented a prevalence of coronary artery disease of 16% to 27% in the general population.<sup>3</sup> However, in prospective studies, the prognostic importance of these findings is not clear. Subanalyses of the CONFIRM registry show that, in asymptomatic patients, a strategy based on NCA is not superior to the calcium score with regard to the reduction of clinical events.<sup>4</sup> Thus, they do not recommend this measure because it is associated with a higher radiation dose and the need for the use of a contrast material in this subgroup of patients.

Taking into account the importance and prevalence in coronary artery disease of soft plaques, which are undetectable in calcium scoring, perhaps the added value of NCA in the detection of lesions of this type should be reconsidered. In fact, studies carried out in patients at intermediate risk have revealed a higher rate of clinical events involving soft plaques,<sup>5</sup> and data from the CONFIRM registry show an added potential in the stratification of the severity

of coronary artery disease by means of NCA when compared to the calcium score alone in symptomatic patients.<sup>6</sup>

Finally, and to intensify the controversy, we should not forget the higher mortality rate recorded in prospective studies involving patients of both sexes with and without obstructive coronary artery disease (hazard ratios, 2.6 and 1.6, respectively) detected by NCA after 2 years of follow-up.<sup>7</sup> At the present time, there is no agreement as to the approach to adopt in a patient with nonobstructive coronary artery disease detected using this technique. As the authors of the original letter point out, we should look to future population-based studies to expand the potential of this technique, interpret the results, and act accordingly to achieve a net clinical benefit in our patients.

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**REFERENCES**

1. Descalzo M, Leta R, Rossello X, Alomar X, Carreras F, Pons-Llado G. Enfermedad coronaria subclínica por tomografía computarizada multidetector en población asintomática estratificada por nivel de riesgo coronario. *Rev Esp Cardiol.* 2013;66:504–5.
2. Mazimba S, Grant N, Parikh A, Patel T, Dahale B, Franco Z, et al. Comparison of the 2006 and 2010 cardiac CT appropriateness criteria in a real-world setting. *J Am Coll Radiol.* 2012;9:630–4.
3. Romeo F, Leo R, Clementi F, Razzini C, Borzi M, Martuscelli E, et al. Multislice computed tomography in an asymptomatic high-risk population. *Am J Cardiol.* 2007;99:325–8.
4. Cho I, Chang HJ, Sung JM, Pencina MJ, Lin FY, Dunning AM, et al. Coronary computed tomographic angiography and risk of all-cause mortality and nonfatal myocardial infarction in subjects without chest pain syndrome from the CONFIRM Registry (coronary CT angiography evaluation for clinical outcomes: an international multicenter registry). *Circulation.* 2012;126:304–13.
5. Ahmadi N, Tsimikas S, Hajsadeghi F, Saeed A, Nabavi V, Bevilacqua MA, et al. Relation of oxidative biomarkers, vascular dysfunction, and progression of coronary artery calcium. *Am J Cardiol.* 2010;105:459–66.
6. Villines TC, Hulten EA, Shaw LJ, Goyal M, Dunning A, Achenbach S, et al. Prevalence and severity of coronary artery disease and adverse events among symptomatic patients with coronary artery calcification scores of zero undergoing coronary computed tomography angiography: results from the CONFIRM (Coronary CT Angiography Evaluation for Clinical Outcomes: An International Multicenter) registry. *J Am Coll Cardiol.* 2011;58:2533–40.
7. Min JK, Dunning A, Lin FY, Achenbach S, Al-Mallah M, Budoff MJ, et al. Age- and sex-related differences in all-cause mortality risk based on coronary computed tomography angiography findings results from the International Multicenter CONFIRM (Coronary CT Angiography Evaluation for Clinical Outcomes: An International Multicenter Registry) of 23,854 patients without known coronary artery disease. *J Am Coll Cardiol.* 2011;58:849–60.

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