

5 September, 2013

Dear Editor,

Please find enclosed the edited full-text manuscript in Word format (file name ESPC Manuscript No: 4811.doc).

**Title:** Part III: Coronary CT angiography: Diagnostic value and clinical challenges

**Author:** Akmal Sabarudin, Zhonghua Sun

**Name of Journal:** World Journal of Cardiology

**ESPS Manuscript NO:** 4811

Reviewer 1:

The authors performed a review of the diagnostic value and limitations of coronary CT angiography according to different generations of scanners. The manuscript seems to have a more technical orientation rather than a describing the clinical value. This does not go in line with the title of the manuscript. Rather than discussing so many technical aspects, I suggest the authors to extend the discussion about the current role of CTCA in different clinical scenarios, the incorporation in clinical practice guidelines, results of large registries such as the CONFIRM and recent multicenter trials (particularly in acute chest pain), and the prognostic value. Furthermore, I would briefly mention the usefulness in myocardial perfusion, and the several dose reduction approaches available. It appears that the authors reduce most technical developments in the field of CT to the number of detectors. Indeed, in the abstract the authors mention a 640 scanner, which is unrealistic. The authors should balance the discussion about advantages disadvantages of the state of the art contemporaneous commercially available scanners, such high coverage (256-CT and 320-CT), dual source CT, and double energy CT with gemstone detectors for spectral imaging. Furthermore, too much attention is put into 4-slice CT scanners, almost useless for cardiac CT imaging, and 16 CT scanners. I suggest discussing only  $\geq 64$  slice CT scanners.

*Response: thank you for your constructive feedback. The manuscript has been revised by taking into account your comments, with inclusion of some large clinical trials such as CONFIRM and ROMICAT trials. The abstract has been revised as suggested, and more discussion is provided to focus on dual-source CT and dual-energy CT.*

Reviewer 2:

This is an excellent overview about the technical development of CT scanners and diagnostic value in coronary CT angiography. This manuscript is nicely structured and well written. I have one minor comment about this manuscript. (Comment) 1. Page 5, 64-slice CT, lines 6-8 In general, it seem to be difficult to evaluate the degree of stenosis using 64-slice CCTA in patients with a high CACS (severe calcified plaques). Therefore, I think it would be better to delete the word "severely". Please consider.

*Response: thank you for your positive feedback. The word "severely" is deleted as suggested.*

Reviewer 3:

In this manuscript the authors nicely describe the evolution of the use of CT for visualization of coronary anatomy. The time course of technical developments over the past 20 years is commented

the state of the art systems are described. While from a technical point of view this is a really nice work, the attraction for the clinician cardiologist could be further enhanced by including exemplary images of the coronary pictures obtained with the current and previous systems. It could also be a nice addition to add some examples of the potential pitfalls for misinterpretation in the text and figures.

*Response: thank you for positive feedback. Some images have been provided as suggested.*

Reviewer 4:

Clinical issues should be discussed in a more detailed way, referral to use of coronary CT in the guidelines etc.

*Response: this has been addressed in the revised manuscript regarding referral of coronary CT angiography in patients with different risk factors.*

Reviewer 5:

In this manuscript the authors review the technical developments of multislice CT and diagnostic value of coronary CT angiography in CAD. The article is interesting and well written. I only suggest to better describe the possible advantages of coronary CT angiography on coronary angiography and vice versa, particularly underlining the therapeutic advantages of coronary angiography.

*Response: Advantages and disadvantages of coronary CT angiography compared to invasive coronary angiography have been discussed as suggested. Therapeutic advantages of coronary angiography such as PTCA are beyond the scope of this article, thus, we did not include it.*

Thank you again for publishing my manuscript in the *World Journal of Cardiology*.

Sincerely yours,



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