



Letter to the Editor

The novel whole-organ high-definition CT scanner: A promising diagnostic method for coronary stented patients with unfavorable HR



Tao Zheng, Jun Yang*, Jian Yang, Xiao-wen Liu, Ying Yang, Qi Li

Department of Cardiology, The First College of Clinical Medical Sciences, China Three Gorges University, Yichang 443000, Hubei Province, China

ARTICLE INFO

Article history:

Received 4 December 2018

Received in revised form 7 January 2019

Accepted 16 January 2019

Dear Editor,

With great interest, we have read the article by Andreini et al. [1]. This study revealed that a novel whole-organ high-definition CT scanner was able to evaluate coronary stents with good interpretability, diagnostic accuracy and low radiation exposure, also in presence of unfavorable HR and heart rhythm.

Despite the use of drug-eluting stents, coronary artery in-stent restenosis (ISR) was still as a clinically common occurrence [2]. So there is a great need to accurately identify patients who may merit invasive evaluation. The diagnostic to patients with suspected ISR has been difficult, but that novel CT scanner brings the technological innovations: improved spatial resolution (0.23-mm), 0.28-s gantry rotation time and so on [1,3]. Myocardial CT perfusion (CTP) was combined functional and anatomical evaluation in one technique, and one prospective study showed that coronary computed tomography angiography (CCTA) plus CTP may have a potential role in diagnostic performance as compared to CCTA alone in identifying significant ISR [4]. It also indicates that the novel CT scanner may have a very wide application prospect in the field of coronary stented CT evaluation, but there is a long way to go. Firstly, stent size, especially stents with a diameter < 3.0 mm, could be further discussed according to CT performance. Moreover, the time of stent implantation and calcification in coronary artery are the key factors affecting the quality of CT imaging

and the accuracy of ISR diagnosis, it could also be considered in this article. Collectively, the novel CT scanner merits larger scale clinical studies.

Conflict of interest

None.

Acknowledgments

This work was supported by the National Natural Science Foundation of China (Grant Nos. 81170133, 81670333) and the Science and Technology Pillar Program of Hubei Province, China (Grant No. 2015BKA340).

References

- [1] D. Andreini, G. Pontone, S. Mushtaq, E. Conte, M. Guglielmo, M.E. Mancini, A. Annoni, A. Baggiano, A. Formenti, P. Montorsi, M. Magatelli, L. Di Odoardo, E. Melotti, M. Resta, G. Muscogiuri, C. Fiorentini, A.L. Bartorelli, M. Pepi, Diagnostic accuracy of coronary CT angiography performed in 100 consecutive patients with coronary stents using a whole-organ high-definition CT scanner, *Int. J. Cardiol.* 274 (2019) 382–387.
- [2] M.D. Dake, G.M. Ansel, M.R. Jaff, T. Ohki, R.R. Saxon, H.B. Smouse, S.A. Snyder, E.E. O'Leary, G. Tepe, D. Scheinert, T. Zeller, Sustained safety and effectiveness of paclitaxel-eluting stents for femoropopliteal lesions: 2-year follow-up from the Zilver PTX randomized and single-arm clinical studies, *J. Am. Coll. Cardiol.* 61 (2013) 2417–2427.
- [3] M. Rief, E. Zimmermann, F. Stenzel, P. Martus, K. Stangl, J. Greupner, F. Knebel, A. Kranz, P. Schlattmann, M. Laule, M. Dewey, Computed tomography angiography and myocardial computed tomography perfusion in patients with coronary stents: prospective intraindividual comparison with conventional coronary angiography, *J. Am. Coll. Cardiol.* 62 (2013) 1476–1485.
- [4] D. Andreini, S. Mushtaq, G. Pontone, E. Conte, J. Sonck, C. Collet, M. Guglielmo, A. Baggiano, D. Trabattani, S. Galli, P. Montorsi, C. Ferrari, F. Fabbiochi, S. De Martini, A. Annoni, M.E. Mancini, A. Formenti, M. Magatelli, M. Resta, E. Consiglio, G. Muscogiuri, C. Fiorentini, A.L. Bartorelli, M. Pepi, Rationale and design of advantage (additional diagnostic value of CT perfusion over coronary CT angiography in stented patients with suspected in-stent restenosis or coronary artery disease progression) prospective study, *J. Cardiovasc. Comput. Tomogr.* 12 (2018) 411–417.

* Corresponding author at: Department of Cardiology, First College of Clinical Medical Sciences, Institute of Cardiovascular Diseases, China Three Gorges University, Yiling Road 183, Yichang 443000, Hubei Province, China.

E-mail address: yangjun@ctgu.edu.cn (J. Yang).