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Two basic questions usually neglected: the definition of the technical parameters and contrast injection: reply

We thank Lee *et al*. for their interest in our work.[1] The authors raise the point that the technology itself would be one of the main points of the study and that a more precise description of the technical aspects of 64-slice CT should have been provided. The aim of our study was to report the first clinical experience with the recently introduced 64-slice CT for evaluating patients with suspected coronary artery disease and to assess the diagnostic accuracy of this new technique in comparison with invasive coronary angiography. It was not the purpose to report on technical details and 64-slice CT scanner properties, as this has been already done by Flohr *et al*.[2]

The 64-slice CT scanner used in our study uses a periodic motion of the focal spot, resulting in double sampling in longitudinal z-direction. With a basic detector collimation of $32 \times 0.6\ mm^2$ and double sampling technique, 64 overlapping 0.6 mm slices per rotation are acquired corresponding to the sampling scheme of a $64 \times 0.3\ mm^2$ detector. A recent technical study[2] demonstrates this technique to provide high z-axis resolution especially in cardiac CT scan protocols, which require very low pitch values.

In accordance with the previously described technical principles,[2] we used the term 'slice collimation' to distinguish this characteristic of the 64-slice CT system from the term 'detector collimation'.

We do agree with Lee *et al*. that the definition of pitch is table feed divided by total detector coverage. Although the focal spot motion increases the amount of samples acquired per projection, the detector coverage per rotation is still determined by the physical width of the used detector rows. Therefore, the physical coverage of the detector equals 19.2 mm based on $32 \times 0.6\ mm^2$ detector collimation. The pitch used was 0.24 with a rotation time of 0.37 s, resulting in a table speed of 4.6 mm/rotation and 12.4 mm/s. Compared to the previous 16-slice CT scanners, this represents a significant enhancement of the table speed, thus reducing breath-hold times from 16 to 20 s with 16-slice CT scanners to ~10–12 s with the used 64-slice CT scanner.

The 64-slice CT scanner used has an adaptive array detector design with 40 detector rows, the 32 central rows having a collimated slice width of 0.6 mm and the eight outer rows a collimated slice width of 1.2 mm.[2] For coronary CT angiography, all inner 32 detector rows are used.

We thank Lee *et al*. for their considerations about contrast injection technique. In our study, there was no dependency between the heart rate and the low vessel opacification in distal coronary segments. No segment down to the diameter of 1.5 mm had to be excluded from analysis because of poor image quality. Therefore, we consider our 64-slice CT protocol as highly robust and being diagnostic even in patients with no beta-blockers and high heart rates. It should be always aimed at an optimization of the contrast injection technique, particularly for improved visualization of distal segments in patients with higher heart rates. However, no systematic study verifying the assumption of Lee *et al*. has been published until now.

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Heart rate reduction through lifestyle modification

We read with great interest the article of Diaz *et al*.[1] reporting on the long-term prognostic value of resting heart rate. In the accompanying editorial of Palatani,[2] the role of heart rate as a strong predictor in subjects with coronary artery disease is emphasized. Palatini further points to the important fact that beta-blocking therapy in survivors of myocardial infarction or patients with congestive heart failure was effective only in subjects with high heart