Author's response to reviews

Title: Influence of trigger type, tube voltage and heart rate on calcified plaque imaging in prospectively ECG-triggered high pitch cardiac computed tomography

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Author's response to reviews:

Dear Editor,

thank you for the consideration of our manuscript, please find a point by point answer to the reviewer’s concerns below.

On behalf of the authors,
Tobias Penzkofer

Reviewer's report:

> Influence of trigger type, tube voltage and heart rate on calcified plaque imaging in prospectively ECG-triggered high pitch cardiac computed tomography

> Introduction:

> 1. Complete the first sentence (both in emergency setting and ?).
Thank you for the hint, the sentence was completed.

> 2. Modify the last sentence of the first paragraph. This is not in accordance to the content of the cited reference (Einstein, A.J., et al., Radiation dose to patients from cardiac diagnostic imaging. Circulation, 2007). It is an exaggeration with regards to the ionizing radiation of both protocol since there are multiple of strategies in minimizing radiation dose in cardiac imaging.
The sentence was changed accordingly.

> Materials and Methods:
CT Examination protocol

In retrospective ECG gated protocol, was pulsing done between 50-100% in all 3 different heart rates
and what is the rationale.

The rationale was to compare the best available image quality of the less recent method to high pitch cardiac CT. In order to achieve this, we were very generous with the pulsing setting for each heart rate.

Measurements

Were the measurement performed by a single observer? State the number of readers who performed the measurements and years of experience in cardiac imaging.

Results:

Comparison to Phantom Dimension

In first paragraph, the sequence of comparison was prospective ECG triggered and retrospective ECG-gating with the respective diameter and plaque thickness results. In the end of the paragraph it was reverse for the degree of stenoses. If this is the case then retrospective gated overestimated in vessel diameter and plaque thickness measurements more than retrospective gated. Check and make corrections.

Radiation Dose Comparison

The results are expected. But what about for the 3 different heart rates? Were they measured?

We agree comparing the doses for the different heart rates would be interesting, but it was out of the scope of this paper (and not included in the protocol).

Discussion: Specify the type of CT scanner that gave an effective radiation dose of 30 mSv, either with 64 slice CT scan or DSCT. At the same time provide the range with invasive coronary angiography not only 5 mSv. Get the data from reference 3 (Einstein etc).

The range of angiography doses was added. The scanner type is unfortunately not mentioned in the reference.

Fourth paragraph, < 60 bpm is an inclusion not exclusion.
The sentence was changed.