Author's response to reviews

Title: Significance of Fragmented QRS Complexes for Identifying Culprit Lesion in Patients with Non ST-Elevation Myocardial Infarction: A Single-Center, Retrospective Analysis of 183 Cases

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Author’s response to reviews: see over
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Title: Significance of Fragmented QRS Complexes for Identifying Culprit Lesion in Patients with Non ST-Elevation Myocardial Infarction: A Single-Center, Retrospective Analysis of 183 Cases

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Author's response to reviews: see over
Reviewer's report
Title: Significance of Fragmented QRS Complexes for Identifying Culprit Lesion in Patients with Non ST-Elevation Myocardial Infarction: A Single-Center, Retrospective Analysis of 183 Cases

Version: 4 Date: 10 April 2012

Reviewer: Heikki Huikuri

Reviewer's report:
It is still unclear how much the analysis of fQRS increases the sensitivity/specificity in diagnosing the culprit coronary lesion compared to more conventional ECG findings, such as ST segment depression. This analysis should be done and reported in the manuscript.

1. However, the clinical significance of these findings remains unclear. ST-segment depression is the most important ECG criteria for non-STEMI as well as for predicting the culprit lesion. It remains uncertain, whether the assessment of fQRS provides any additional information.

Based on the reviewer’s comments, we reviewed the data and recalculated the sensitivity and specificity of fQRS and ischemic T-waves for the diagnosis of culprit lesions. The comparison of diagnostic accuracy between fQRS and ischemic T-waves was mentioned in the RESULTS section. Receiver operating characteristic curves was revised as the reviewer suggested.

The following sentences were added in the 4th paragraph of the RESULTS section:

The presence of fQRS for the diagnosis of left anterior artery (LAD) lesions was less sensitive (58.04% versus 62.07%) but more specific (74.95% versus 58.16%) compared with the presence of ischemic T-waves. The sensitivity and specificity of fQRS for the diagnosis of left circumflex artery (LCx) lesions were 89.41% and 71.70% compared with 53.42% and 70.64% for ischemic T-waves, respectively. For the diagnosis of right coronary artery (RCA) lesions, the presence of fQRS was more sensitive (92.25% versus 66.15%) and less specific (65.52% versus 66.34%) than ischemic T-waves. We found that the total sensitivity and specificity of fQRS (77.13% and 71.47%) were higher than those values for ischemic T-waves.

Receiver operating characteristic (ROC) curves were used to evaluate the diagnostic accuracy of fQRS and ischemic T-waves for the diagnosis of culprit lesions in patients with NSTEMI. The areas under the ROC curves for fQRS and ischemic T-waves were 0.75 (95% CI, 0.66–0.85) and 0.54 (95% CI, 0.41–0.64), respectively. Thus, the total diagnostic accuracy was significantly higher for fQRS than that for ischemic T-waves (Figure 1; p = 0.03).

The following sentences were added in the 3rd paragraph of the DISCUSSION:
ST-segment change is an important ECG criteria for the diagnosis of STEMI, but the sensitivity and specificity of ST segment depression and/or T-wave inversion for predicting the culprit lesion are not very high. Our results showed that the fQRS complexes had better diagnostic accuracy than ischemic T-waves for the identification of culprit vessels. These findings also suggest that fQRS could identify the correct culprit lesion in some patients without ischemic T-waves.

2. After reading through your manuscript, we feel that the quality of written English needs to be improved before the manuscript can be considered further. Two native speakers helped us to revise our article, and several language mistakes have been modified.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests: I declare that I have no competing interests.