1. No.
   2019G019

2. Title
   Influence of smoking on plaque inflammation and effects of smoking cessation

3. Period
   2019-2021

4. Summary
   [Background] We sought to visualize plaque inflammation that promotes arteriosclerosis of major blood vessels such as the carotid, coronary, aorta, and pericardial fat in current smokers, ex-smokers, and non-smokers.

   [Methods] A prospective observational study was performed in patients with acute coronary syndrome, stable coronary artery disease, and non-coronary artery disease. Using a semiconductor PET/CT and an ^{18}F-FDG tracer, the SUV max value and the target blood ratio (TBR) of the carotid artery, ascending and descending aorta, coronary arteries, and pericardial fat were measured as biomarkers of vascular inflammation.

   [Results] Consecutive 42 patients (smokers: n=11, ex-smokers: n=18, non-smokers: n=13) were studied. ^{18}F-FDG PET provided visualization of inflammation of the aortic and carotid artery walls. Quantitative evaluation of inflammatory lesions by TBR revealed no significant difference in TBR in any of the main coronary artery, carotid artery, ascending aorta, and pericardial fat in the three groups. There were no side-effects by ^{18}F-FDG PET/CT.

   [Conclusions] We confirmed that vascular inflammation of the coronary artery, carotid artery and aorta can be visualized by ^{18}F-FDG digital PET/CT.