1. **No.**

   FP01811130

2. **Title**

   Longitudinal analysis of smoking intensity and passive smoking confirmed by urinary cotinine levels for atherosclerosis and cardiovascular disease.

3. **Period**

   2017-2019

4. **Summary**

   The aim of this study is to clarify harmful effects of smoking and passive smoking on atherosclerotic end-organ damages as well as cardiovascular events in a large-scale cohort study consists of more than 10 thousand community residents. Although smoking status was usually assessed using a self-administrated questionnaire, we measured urinary cotinine level as a marker of smoking intensity and potential passive smoking for precise evaluation of the harmful effects of smoking on the cardiovascular outcomes.

   Urinary cotinine level was markedly higher in smokers. However, there was a small number of past or never smokers those spot urine sample contained detectable levels of cotinine; those were considered as passive smokers. The passive smokers showed higher white blood cell count, a marker of chronic systemic inflammation, not only in the cross-sectional analysis but also in the longitudinal analysis with 5-year interval. Furthermore, incidence rate of ischemic heart diseases during 8.6 years follow-up period was significantly higher in the passive smokers.

   In non-smokers, detection of urinary cotinine might be a risk factor for worse cardiovascular outcomes possible due to representation of continuous exposure to secondhand smoke. Higher rates of tobacco resumption in the cotinine-detected individuals might be involved in the association with continuous chronic inflammation and incidence of ischemic heart diseases.