[gw22-e0465]

**ASSOCIATION OF GLOMERULAR FILTRATION RATE
WITH HIGH-SENSITIVITY CARDIAC TROPONIN T
IN A COMMUNITY-BASED POPULATION STUDY IN
BEIJING**

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10.1136/heartjnl-2011-300867.281

Objective The reduced level of glomerular filtration rate (GFR) is an independent risk factor for cardiovascular disease (CVD) mortality and persistently elevated cardiac biomarkers are frequently observed in patients with end-stage renal disease. In general population, however, the clinical use of the serum levels of cardiac biomarkers has limitations because of the low sensitivity of the assay system. Recently, a highly sensitive cTnT (hs-cTnT) assay has become commercially available. In the present study, the authors investigated the cTnT level using highly sensitive commercial assay, evaluated the association of eGFR with hs-cTnT in community-based population in Beijing.

Methods The serum hs-cTnT levels were measured in a community-based population (n=1497; 48.1% men; aged ≥ 45 years) living in Pingguoyuan area of the Shijingshan district, a metropolitan area in Beijing, China. The lower detection limit of the hs-cTnT assay used in the present study was 3 pg/ml. eGFR was evaluated by the Chinese modified Modification of Diet in Renal Disease equation. Anthropometry, blood pressure, fasting plasma glucose (FPG), serum total cholesterol (TC), triglyceride (TG), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), uric acid (UA) and NT-proBNP were measured. Pearson's correlation and a multivariate logistic regression modelling were used to establish the relationship between eGFR value and detectable hs-cTnT value.

Results With the highly sensitive assay, detectable hsTnT levels were seen (> 3 pg/ml) in 798 subjects (54.9%) and concentrations of cardiac troponin T were at or above 13.3 pg/ml in 178 patients (11.9%). The level of hs-cTnT was increased in patients with hypertension, diabetes, coronary artery disease and/or renal insufficiency. The result of Pearson correlation showed that eGFR was associated with hs-cTnT ($r=-0.14$, $p<0.001$). After adjustment for other risk factors, the results of multivariate logistic regression analysis showed eGFR were independently inversely associated with hs-cTnT (adjusted odds ratio, 0.57; 95% CI, 0.36 to 0.77; $p<0.001$) in this study group.

Conclusion The present study showed that after adjusting for multiple potential confounders, eGFR were significantly associated with cardiac troponin T concentrations as measured with a highly sensitive assay in the community-based subjects.