Background To investigate the association between Lp(a) and the risk of subsequent major adverse cardiovascular events (MACE) in a broad unselected population of patients with ACS.

Methods Seven hundred and ninety four inpatients diagnosed with ACS at Zhongshan Hospital of Fudan University were identified and retrospective chart review and analysis were undertaken. Long-term follow-up to confirm the subsequent MACE (cardiac death, non-fatal myocardial infarction, coronary revascularisation and stroke) was obtained by telephone or clinic visit. Cox proportional hazard model was used to evaluate the relationship between Lp(a) and MACE before and after adjustment of potential confounders. Results: Over the 1.6 years follow-up, 142 MACE were identified. After adjustment of age, sex, hypertension, diabetes, smoking as well as triglycerides, LDL-cholesterol and HDL-cholesterol, the risk of subsequent MACE in ACS patients steadily increased with the elevation of serum Lp(a) levels and the increment began to be significant when Lp(a)≥19.5 mg/dl (hazard ratio (HR): 1.83, 95% CI: 1.01 to 3.33, p<0.05). The HR for the incidence of subsequent MACE associated with one unit increase of lgLp(a) for females was 1.72 (95% CI: 1.12 to 2.64, p<0.01), higher than that for males (HR: 1.55, 95% CI 1.23 to 1.94, p<0.01). However, Lp(a) lost some of its predictive potential when patients were older than 70 years (HR: 1.28, 95% CI: 0.94 to 1.74).

Conclusions Lp(a) is an independent risk factor for subsequent cardiovascular events in patients with ACS, and the risk is higher in females than in males and would be attenuated by ageing.