Objectives To explore whether the use of Peripheral Arterial Tonometry (PAT) in the evaluation of admission vascular endothelial function of acute myocardial infarction (AMI) patients can predict recurrence of major adverse cardiovascular events (MACE).

Methods 116 consecutive patients clinically diagnosed with AMI received evaluation of vascular endothelial function using PAT technique within 72 h of admission, reactive hyperaemia index (RHI) was calculated. By the cut point of normal RHI (1.67) patients were divided into the normal endothelial function group (RHI \(\geq 1.67\)) and the endothelial dysfunction group (RHI \(< 1.67\)), follow-up of MACE was conducted in both groups during hospitalisation (median value 8.0 days) and after discharge from hospital (243.8±68.3 days). MACE included cardiac death, recurrent acute myocardial infarction, recurrent unstable angina during hospitalisation, ischaemic stroke, elective PCI or CABG, and hospitalisation due to cardiovascular causes.

Results There was no significant difference in recurrence of MACE between PAT-determined endothelial dysfunction group (RHI\(< 1.67\)) and normal endothelial function group (RHI \(\geq 1.67\)) both during hospitalisation and after discharge from hospital (\(p=0.098\) and 0.104, respectively), yet Kaplan-Meier survival curves showed that during hospitalisation the cumulative event-free incidence of endothelial dysfunction group tended to be lower than that of normal endothelial function group, although the difference was not statistically significant (\(p=0.367\)).

Conclusions PAT cannot predict recurrence of major adverse cardiovascular events in AMI patients both during hospitalisation and after discharge from hospital.