Introduction Comparatively diverse groups have been used to study the association between periodontal infection and cardiovascular disease. However there is no consensus regarding the most appropriate control group to be used for this purpose.

Objective To compare the use of hospital controls vs community controls for the association between periodontal disease (PD) and acute myocardial infarction (AMI).

Method We outlined two case-control studies with 621 subjects. In the first, the Case Group was compared with 207 individuals in the Hospital Control Group (HC), and in the second with 207 individuals in the Community Control Group (CC). The Case Group was with diagnosis of first AMI event. Controls Groups were individuals with no history of previous AMI, matched by sex and age. The HC was selected from the same hospital as the Case Group, while the CC comprised of neighbours of the Case Group. The participants underwent a complete periodontal examination, were evaluated for lips and glucose levels, anthropometric status, and responded to an interview. The ORs obtained were adjusted for confounder covariates and controlled by the co-effect modifying variables with a significance level of 5%.

Results Among patients with PD the chance for AMI was higher among those without PD. CC (OR unadjusted = 1.57; 95% CI [0.98 to 2.52]) and for HC (OR unadjusted = 1.73; 95% CI [1.11 to 2.72]). After adjusting for age, sex, smoking, education level, occupation, glycaemic index and HDL cholesterol increased the chance for both groups with statistical significance: CC (OR adjusted = 1.89; 95% CI [1.11 to 3.28]) and HC (OR adjusted = 1.92; 95% CI [1.14 to 3.25]).

Conclusions The findings indicate that the PD is associated with AMI, independently of the control group.