Background: Amphetamine use is associated with an increase in acute myocardial infarction, but to date, little research has been done to assess the severity of coronary artery disease in these patients. Current management favors a non-invasive approach for ACS associated with amphetamines, based on the assumption that ischemia reflects coronary vasospasm.

Methods: We analyzed all patients admitted to UC Davis Medical Center for chest pain who underwent cardiac catheterization in 2007-8. We compared patients who tested positive for amphetamines on urine toxicology to patients without known amphetamine use. Patients were assessed for age, gender and cardiac risk factors. Outcomes variables included degree of coronary artery disease in all major vessels, ejection fraction, need for intervention (either CABG or percutaneous intervention) and presence of acute myocardial infarction (CK-MB three times normal).

Results: Of 775 patients analyzed, 23 (3%) tested positive for amphetamines. Compared to patients without known amphetamine use, amphetamine-positive patients were younger (age 51.7 vs. 63.0, p<0.001) and were more often male (87.0% vs. 63.5%, p=0.021). The prevalence of diabetes was less in amphetamine-positive patients (13.0% vs. 37.0%, p=0.019) and there were non-significant trends for lower rates of hypertension, congestive heart failure and prior MI. Between amphetamine-positive and control patients, there was no difference in rates of acute MI (43.5% vs. 37.3%, p=0.548), or frequency of intervention (56.5% vs. 66.1%, p=0.339). The degree of stenosis was significantly reduced in the circumflex artery (32.7% vs. 53.1%, p=0.012), but was similar in the right coronary (56.3% vs. 61.7% p=0.498), left main (5.9% vs.15.3%, p=0.074) and left anterior descending arteries (37.1% vs. 41.6%, p=0.558). The ejection fraction was also similar between the two groups (47.4% vs. 48.5%, p=0.695).

Conclusion: Despite younger age and a trend for fewer risk factors in amphetamine-positive patients, the severity of coronary artery disease and need for intervention were similar in the two groups. Thus, an invasive strategy may be appropriate in patients who present with ACS and amphetamine use.