Predictive Value of Pulse Pressure in Patients with Acute Coronary Syndrome

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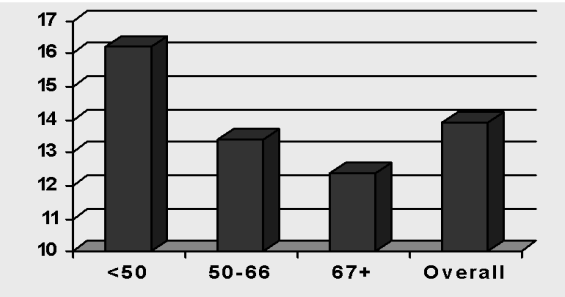
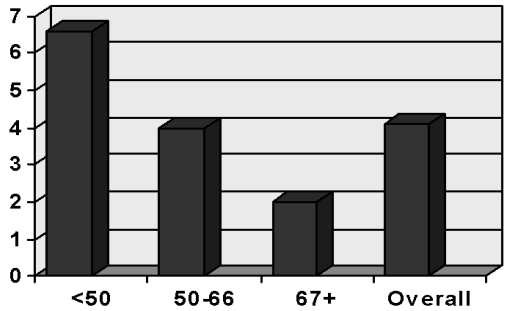
Background: High pulse pressure (PP) has been shown to be an independent predictor of cardiac events in patients with and without coronary artery disease. We sought to explore the predictive value of PP in patients in the setting of acute coronary syndrome (ACS).
Methods: Data was collected from the 2008 ACSIS (Acute Coronary Syndrome Israeli Survey). Systolic and diastolic blood pressures were recorded at the time of presentation to medical personnel. Patients who were in cardiogenic shock (CS) were excluded. PP was divided into tertiles for analysis (low =<50mmHg, mid 50-67mmHg, high ≥68mmHg).
Results: PP was available for 1760 of 1766 patients enrolled. 40 patients were excluded due to CS. Mean blood pressure was 143/83 with pulse pressure of 60mmHg. Mortality and MACE were highest in the low pulse pressure group (5.2% and 14.9% respectively) compared with 3.6% and 13.2% in the midPP group and 1.9% and 12.3% in the high PP group. (p = .01) Patients in the mid and higher PP group were older and had a higher incidence of hypertension, diabetes, and hyperlipidemia, and a higher incidence of cardiac, neurological and peripheral vascular disease. Patients in the lower PP group had a higher incidence of STEMI and were more likely to have moderately or severely decreased ejection fraction. On multivariate analysis including age, gender, smoking, and diabetes, high PP remained a strong predictor of survival (OR 0.6 95% CI 0.4-0.84, p<.004). In multivariate analysis of patients with STEMI, PP remained a predictor of survival, even after inclusion of systolic blood pressure as a variable (OR 0.3, 95% CI 0.1-0.7, p=.01)
Conclusions: Higher PP in the setting of ACS is a predictor of decreased MACE and increased survival. In the acute setting, high PP may be a marker of increased cardiac output and increased cardiovascular reserve.



30 Day MACE



30 day mortality