Contribution: Higher volume EDs were associated with decreased rates of annual chest pain patient volume. The primary outcome of this study was all-cause mortality one year after the index ED visit. Mantel-Haenszel Chi-Square was used to compare crude outcome rates.

Results: There were 56,767 high-risk patients. The average age was 66 years and 53% were female. All-cause mortality rates were 6.8%, 6.3%, and 6.0% (p = 0.028), and rates of hospitalization for acute coronary syndrome were 5.8%, 4.6%, and 4.0% (p < 0.001) among low, medium, and high volume EDs respectively. There were 216,527 low-risk patients. The average age was 64 years and 42% were male. All-cause mortality rates were 2.0%, 1.9%, and 1.6% (p < 0.001), and rates of hospitalization for acute coronary syndrome were 1.5%, 1.4%, and 1.0% (p < 0.001) among low, medium, and high volume EDs respectively.

Conclusion: Higher volume EDs were associated with decreased rates of all-cause mortality and admission for acute coronary syndrome among chest pain patients who were discharged home. Future research should study the reasons for this finding and attempt to improve outcomes in lower volume EDs.

Keywords: chest pain

LO006
Interarm blood pressure differential as a clinical marker for acute aortic dissection in the emergency department
S.W. Um, BSc; R. Ohle, MA, MB, BCh, BAO; J.J. Perry, MD, MSc; University of Ottawa, Ottawa, ON

Introduction: Acute Aortic Dissection (AAD) is life-threatening, requiring early diagnosis. Although previous literature suggests interarm BP differential is an independent predictor of AAD, up to 20% of a healthy population can have a significant differential. Our objectives were to assess the rate of bilateral BP measurement in acute non-traumatic truncal pain patients, and the association of BP differential with non-traumatic AAD. Methods: This is a historical matched case control study: participants were adults ≥18 years old presenting to two tertiary care EDs with a triage diagnosis of truncal (i.e. chest, abdominal, flank, back) pain. Cases were selected based on an ED or in-hospital diagnosis of non-traumatic AAD confirmed by CT or Echo. Controls were from a single calendar year matched in a 1:1.5 ratio by sex and age within 5 years. ED and referral consult BP measurements were used. Exclusion criteria: clear diagnosis on basic investigation (i.e. UTI, pneumonia, pneumothorax, acute fracture) or pain >14 days/no pain. Sample size of 126 cases and 183 controls was calculated based on 20% exposure in controls (80% power and alpha of 5%), to detect an OR > 2. P-values were calculated using chi square analysis. Results: A total of 294 (119 cases, 175 controls) patients were included (mean 66 +/-14.5yrs, 59.5% male). Cases (199 potential: 119 included; 80 excluded). Controls (8239 potential: 305 reviewed; 175 included; 130 excluded). Bilateral BP was measured in 70.6% of cases (n = 84, mean difference = 15.5mmHg) versus 31.3% of controls (n = 55, mean difference = 10.9mmHg). Among included controls, most common diagnoses were: Unspecified Chest (36.0%) or Abdominal (9.7%) Pain, ACS (12.6%), Muscular Back Pain (5.1%), and Renal Colic (4.0%). BP differential >10mmHg was found in 58.8% of cases and 40.7% of controls (P = 0.10). A BP differential >20mmHg was found in 31.3% of cases and 22.2% of controls (P = 0.37). BP differential >20mmHg did not significantly increase the odds of AAD (OR 2.0 (95%CI 0.82-4.90), p < 0.129). Conclusion: Interarm BP differential is not routinely measured in ED patients with acute non-traumatic truncal pain, and there is no significant difference in the presence or magnitude of differentials in patients with or without AAD. Therefore, physicians should not rely on BP differentials to aid in their diagnosis or exclusion of AAD.

Keywords: aortic dissection, blood pressure