**COLON CANCER LATERALITY IS ASSOCIATED WITH ATHEROSCLEROSIS AND CORONARY ARTERY DISEASE**

S.C. Wang, J. Schulman-Marcus, J. Fantauzzi, T. Bevington, A. Sayegh, **R. Alreshq**,

E. Lee, A. Ata, M. Sidhu, M. Kambam, R. Lyubarova

Albany Medical Center, Albany, NY, USA

**Objective:** Identify the association between colon cancer laterality and coronary artery disease (CAD).

**Background:** There is a high incidence of CAD in patients with colon cancer. Primary right-sided colon cancer (RCC) is associated with a higher mortality than left-sided colon cancer (LCC), but the etiology of this phenomenon remains unclear. We sought to study whether cancer laterality is associated with the prevalence of clinical coronary artery disease, calcific atherosclerosis as measured by computed tomography (CT), and cardiovascular risk factors.

**Methods:** We conducted a single center retrospective study of 546 participants who had previously been diagnosed with colon cancer between January 2005 and December 2014. The presence of coronary and aortic calcifications was assessed by CT in 486 of these patients. We examined the prevalence of clinical CAD (prior myocardial infarction or revascularization), comorbidities, coronary and aortic calcification in patients with RCC (n=261) and LCC (n=285). Logistic regression analysis was performed to assess the likelihood of clinical CAD and calcific atherosclerosis by cancer laterality.

**Results:** The mean age for the entire cohort was 65±14 years, 48.5% were female, 8.2% were African-American, and 88.7% were Caucasian. There were no significant differences in baseline demographics between the groups. Compared to patients with LCC, patients with RCC were more likely to have hypertension, hyperlipidemia, hypothyroidism and clinical CAD. In the patients with available CT scans, RCC was associated with higher prevalence of coronary (62.4% right vs 36.9% left, p<0.001), thoracic (66.5% vs 41.1%, p<0.001), and abdominal calcifications (72.2% vs 48.6%, p<0.001) than LCC. On univariate and multivariate analyses, RCC was associated with higher likelihood of clinical CAD (adjusted odds ratio 2.38, 95% CI 1.35-4.21, p=0.003) as well as coronary and aortic calcification.

**Conclusion:** We found that both CVD risk factors and clinical CAD are prevalent in patients with colon cancer, and are independently increased in patients with RCC compared to LCC. RCC is similarly independently associated with a higher burden of calcific atherosclerosis.