

Inflammatory Bowel Disease, Subclinical Atherosclerosis, and Cardiovascular Disease: A Case-control Analysis

Maliha Naseer, Baldeep Pabla, Elizabeth A. Scoville, Dawn B. Beaulieu, David A. Schwartz, Sara N. Horst, Robin L. Dalal
 Department of Medicine, Division of Gastroenterology, Hepatology & Nutrition, Vanderbilt University Medical Center, Nashville, TN

INTRODUCTION

Inflammatory Bowel Disease (IBD) is classified with other immune-mediated inflammatory diseases (IMID). Many IMID such as rheumatoid arthritis and systemic lupus erythematosus have been shown to predispose patients to atherosclerotic cardiovascular disease (ASCVD) even without traditional cardiovascular risk factors. An association between IBD and ASCVD has been reported, but is less well-defined. In addition, there is lacking data on risk of subclinical atherosclerosis in patients with IBD.

SPECIFIC AIMS

1. To determine the characteristics of CAC scoring in IBD patients vs. aged-matched controls
2. To ascertain associations of CAC scores in this population with certain comorbidities.
3. To determine if certain patient characteristics are associated with higher CAC scores
4. To determine if IBD patients have higher risk of ASCVD outcomes such as MI, death, stroke (CVA), venous thrombosis (DVT) or cardiovascular intervention

METHODS

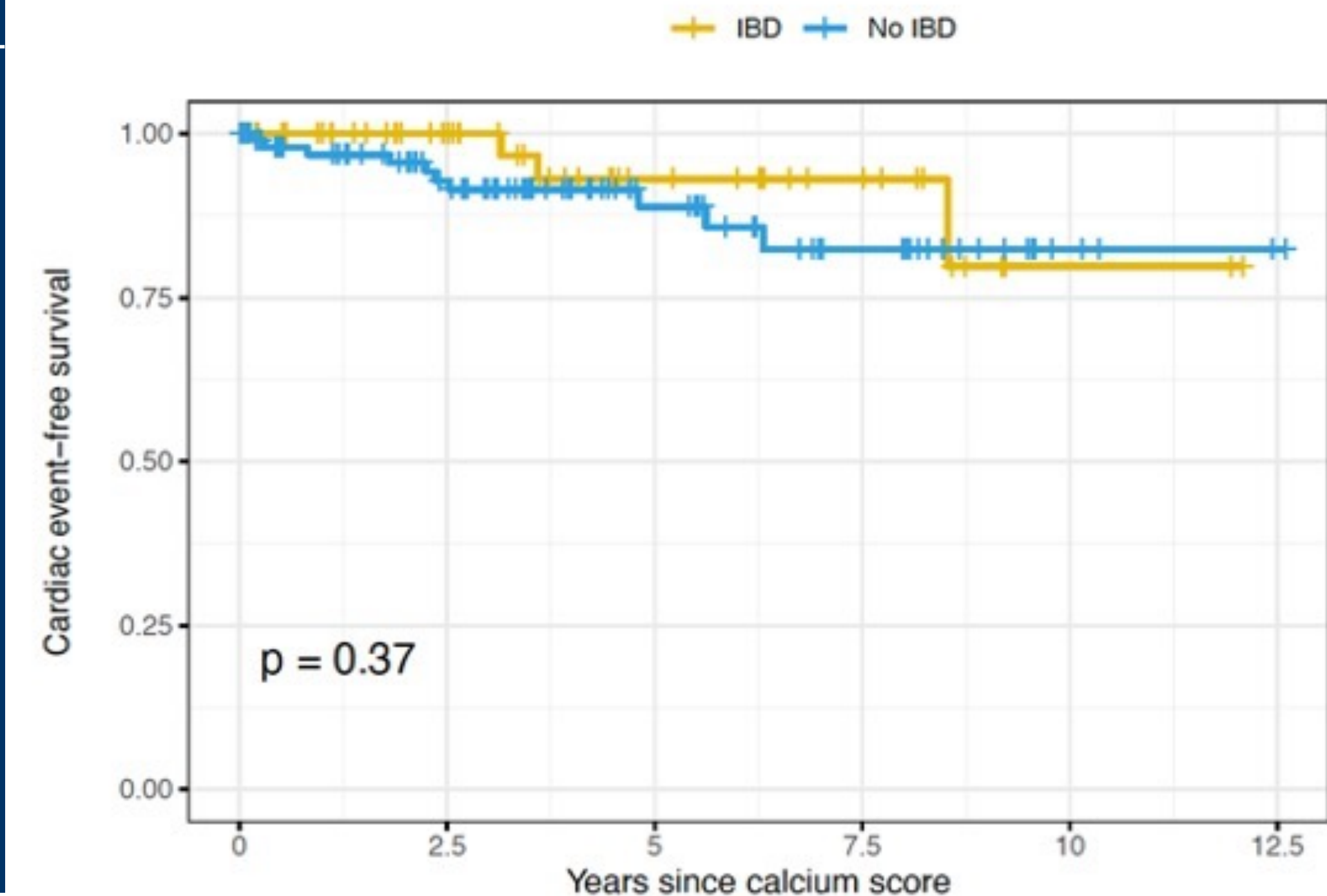
We performed a case-control analysis of patients seen at a tertiary medical center who underwent coronary calcium scoring (CCS) as part of routine clinical care. Patients with IBD were compared to patients without IBD for differences in CCS and development of cardiac events and/or death. Controls were randomly selected from age and sex matched lists of CCS and excluded if they had a prior history of ASCVD. The association of IBD status with time to cardiac events or death was compared using log rank tests, and Cox regression was used to estimate hazard ratios. Subjects were considered at risk from the time of CCS until they had the event of interest or were censored at last contact.

RESULTS

Table 1. Patient characteristics

	IBD	Non-IBD	P-Value
	n = 53	n = 106	
Age	55 (47-67)	56 (46-65)	0.97
Female	18 (34%)	34 (32%)	0.81
BMI	28 (25-31)	27 (25-31)	0.99
Race: Caucasian	53 (100%)	100 (94%)	0.21
Smoker	14 (26%)	28 (26%)	1
Statin Use	22 (42%)	57 (46%)	0.57
Diabetes	5 (9%)	10 (9%)	1
Aspirin Use	9 (17%)	26 (35%)	0.28

Figure 1. Cardiac event-free Survival in IBD cases vs. non-IBD Controls



CONCLUSIONS

IBD status does not appear to be associated with increased risk of subclinical atherosclerosis as measured by CCS. Elevation in the CCS is associated with risk of cardiac events and death; however, IBD status does not appear to be associated with risk of cardiac events and death. Larger studies are needed to further define the relationship between IBD, subclinical atherosclerosis, and ASCVD.