Risk of Adverse Cardiovascular Outcomes in Postmenopausal Women With Inflammatory Bowel Disease

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BACKGROUND

- Previous studies suggest an increased risk of adverse cardiovascular (CV) outcomes among individuals with inflammatory bowel disease (IBD).
- This increased risk is observed in the absence of traditional CV risk factors such that younger (<40-50 years) and female individuals with IBD are at higher risk of coronary heart disease (CHD) and stroke than their non-IBD counterparts.
- This study aimed to assess the risk of adverse CV outcomes among postmenopausal women with IBD.

METHODS

- We performed a survival analysis of participants enrolled in the Women's Health Initiative (WHI, 1993-2010).
- Participants in the WHI clinical trials and observational study were included.
- We excluded participants with missing data on self-reported IBD diagnosis at enrollment, missing model covariate data, no follow-up data, or a previous history of one of the CV outcomes of interest: CHD, ischemic stroke, venous thromboembolism (VTE), or peripheral arterial disease (PAD).
- We assessed the risk of each outcome between women with and without IBD using Cox proportional hazard models, stratified by WHI trial group and WHI follow-up period.
- Models were adjusted for age, socio-demographics, comorbidities, family history and lifestyle factors.

RESULTS

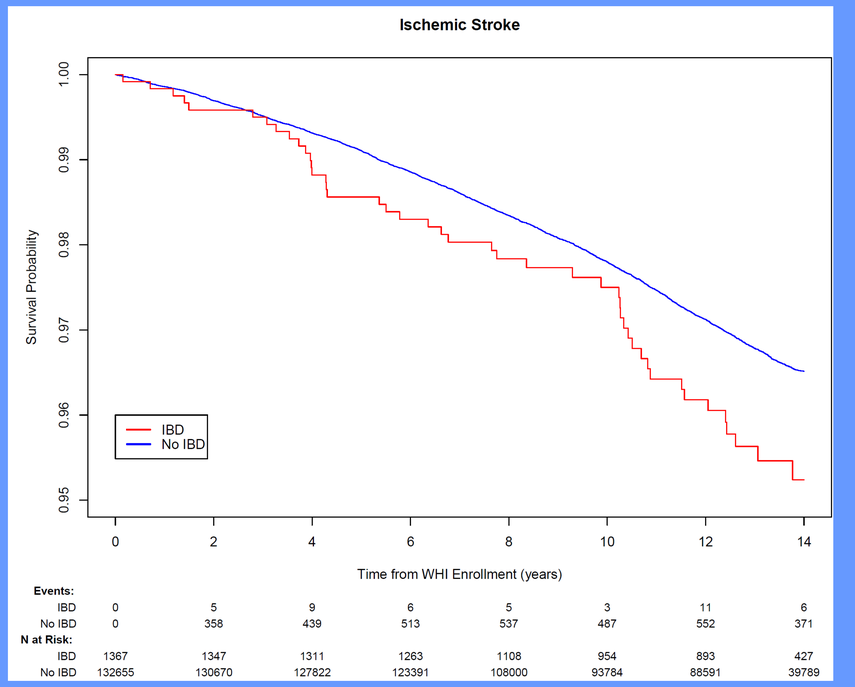
- A total of 1,367/134,022 women reported IBD (1.02%).
- The mean baseline age for both groups was 63 years.
- After adjusting for age and other potential confounders, no significant difference was observed in women with vs. without IBD for the risk of CHD, VTE or PAD. However, ischemic stroke was significantly higher in women with IBD.

Outcome		IBD	No IBD	
CHD	Events (Ann%)	57 (0.36)	5385 (0.35)	
		HR (95% CI)	HR (95% CI)	*p*-value
	Model 1	1.05 (0.81, 1.37)	1.00 (ref)	0.69
	Model 2	0.99 (0.76, 1.28)	1.00 (ref)	0.92
	Model 3	0.98 (0.75, 1.27)	1.00 (ref)	0.87
Ischemic Stroke	Events (Ann%)	47 (0.30)	3329 (0.21)	
		HR (95% CI)	HR (95% CI)	*p*-value
	Model 1	**1.41 (1.06, 1.88)**	**1.00 (ref)**	**0.02**
	Model 2	**1.35 (1.01, 1.81)**	**1.00 (ref)**	**0.04**
	Model 3	**1.34 (1.00, 1.80)**	**1.00 (ref)**	**0.05**
PE/DVT	Events (Ann%)	40 (0.25)	3251 (0.21)	
		HR (95% CI)	HR (95% CI)	*p*-value
	Model 1	1.23 (0.90, 1.68)	1.00 (ref)	0.20
	Model 2	1.14 (0.83, 1.56)	1.00 (ref)	0.42
	Model 3	1.13 (0.82, 1.55)	1.00 (ref)	0.45
PAD	Events (Ann%)	6 (0.04)	871 (0.06)	
		HR (95% CI)	HR (95% CI)	*p*-value
	Model 1	0.68 (0.31, 1.52)	1.00 (ref)	0.35
	Model 2	0.67 (0.30, 1.49)	1.00 (ref)	0.33
	Model 3	0.65 (0.29, 1.47)	1.00 (ref)	0.30

Table 1: Hazard ratios of self-report IBD on outcome events.

Model 1: Adjusted for age. Model 2: Model 1 + ethnicity, race, education, hypertension, diabetes, hypercholesterolemia, family hx of MI, family hx of stroke, rheumatoid arthritis, lupus, BMI. Model 3: Model 2 + smoking, alcohol, physical activity, visit to regular doctor in the past year, any insurance.

Figure 1. Kaplan-Meier Plot of Ischemic Stroke Associated with IBD



CONCLUSION

Among post-menopausal women, risk of ischemic stroke may be increased in those with compared to those without IBD. Accounting for traditional CV risk factors, such as metabolic comorbidities and lifestyle may attenuate the risk.