

Hepatitis C Virus co-infection and the risk of Peripheral Artery Disease among HIV-infected patients: Population-based study

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Background

- ◆ HIV infection is associated with an increased risk of
 - Ischemic stroke¹
 - Acute myocardial infarction²
 - Incident peripheral arterial disease (PAD)³
- ◆ Among HIV-infected patients, the association of hepatitis C virus (HCV) co-infection and peripheral arterial disease remains unclear

Objective

- ◆ To describe the risk of incident PAD among HIV and HIV/HCV patients
- ◆ To evaluate whether HCV co-infection is associated with an increasing risk of incident PAD among HIV-infected patients

Methods

- ◆ A Population-based cohort study was constructed using the US administrative claims, IQVIA PharMetrics Plus™ Claims database, of commercially insured patients in the United States between January 1st 2008 and September 30th 2018
- ◆ The index date for each patient was defined as the date of the first claims diagnosis for HIV/HCV
- ◆ Eligible patients had to be at least 18 years of age and continuously enrolled in the health plan for at least 12 months prior to the index date
- ◆ All patients were followed until the incidence of PAD, loss of health plan eligibility or end of study database (September 30th 2018)
- ◆ Demographic and clinical characteristics of the HIV and HIV/HCV cohort were evaluated by t-test, and chi-square test
- ◆ Logistic regression and Cox proportional regression models were used to evaluate the events of PAD by HCV status among HIV-infected patients

Results

- ◆ A total of 148,149 HIV-infected patients, 4.52% of whom were HCV co-infected (HIV/HCV), contributed 316,094 person-years of follow-up
- ◆ The rates of PAD were significantly higher among HIV/HCV co-infected patients when compared to HIV-monoinfected patients: 4.9 vs. 2.8 events per 100 person-years, respectively
- ◆ In an adjusted multivariate model, after controlling for age, type 2 diabetes, hypertension, calendar year of exposure to antiretroviral therapy, and other risk factors for PAD, hazard ratios (HRs) among those with HIV/HCV vs. HIV was 1.24 [95% confidence interval (CI): 1.11-1.39; p<0.0001]

Table 1: Demographic characteristics of Patients with HIV vs HIV/HCV

	HIV-monoinfected (n=141,453)	HIV/HCV(n=6,696)	P-value
Age (years) [Mean(SD)]	40.08(13.09)	47.67(12.5)	<0.0001
Male (%)	63.71	62.84	0.3073
ART Exposure (%)	54.83	43.97	<0.0001
DAA Exposure (%)	---	10.57	---
Hypertension (%)	17.45	23.49	<0.0001
Myocardial Infarction (%)	0.32	0.67	<0.0001
Stroke (%)	0.11	0.28	0.0004
Unstable Angina (%)	0.22	0.72	<0.0001
Transient Ischemic Attack (%)	0.42	0.90	<0.0001
Congestive Heart Failure (%)	1.41	4.39	<0.0001
Chronic Renal Insufficiency (%)	3.08	7.06	<0.0001
Diabetes (%)	5.51	10.59	<0.0001
Hypercholesterolaemia (%)	5.62	13.55	<0.0001
Hypertriglyceridaemia (%)	1.85	4.38	<0.0001
Dyslipidaemia (%)	12.05	19.24	<0.0001
Smokers (former and current) (%)	8.22	12.93	<0.0001
Drug Abuse (%)	7.35	11.68	<0.0001

ART, antiretroviral therapy; HCV, Hepatitis C virus, DAA, Direct-Acting Antiviral; SD, standard deviation

Results (cont'd)

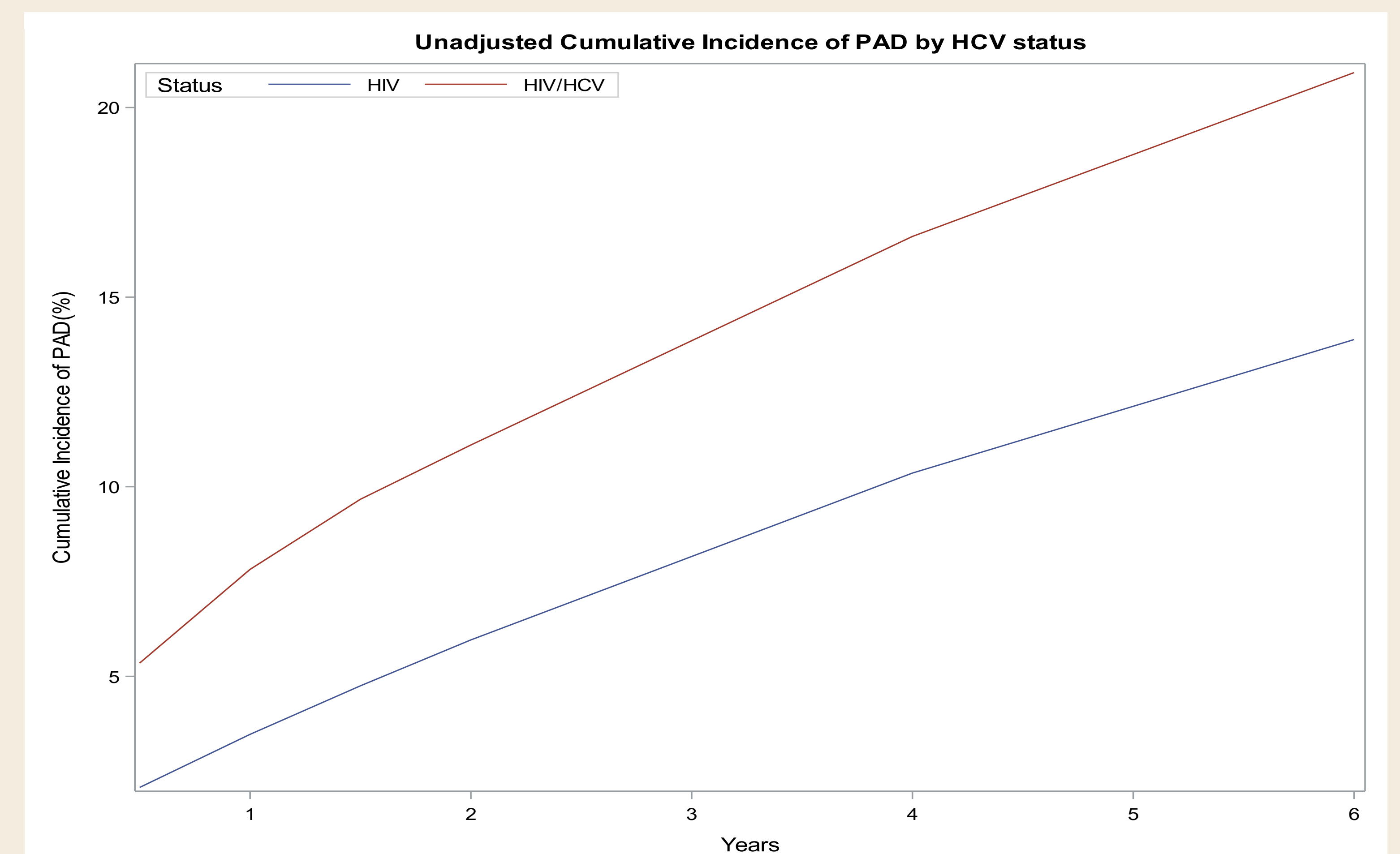


Table 2: The risk of Peripheral Artery Disease (PAD) by hepatitis C virus (HCV) status

Event	Patient Group	Number of events	Person-years (×100)	Event rate	Unadjusted hazard ratio (95% CI)	Adjusted hazard ratio (95% CI)*
PAD	HIV/HCV	856	174.1	4.92	1.75(1.08-2.83)	1.24(1.11-1.39)
	HIV	8401	2986.9	2.81		

HIV, HIV-monoinfected; HIV/HCV, HIV/HCV co-infected patients; *Adjusted for hypertension, age, diabetes, smoking, use of antiretroviral therapy and other risk factors for peripheral artery disease

Conclusions

- ◆ In the era of direct-acting antivirals and highly active antiretroviral therapy, HCV co-infection was associated with a significant risk of PAD among HIV-infected patients

References

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Abbreviations

- ◆ ART –Antiretroviral therapy
- ◆ DAA - Direct-Acting Antiviral
- ◆ HIV– Human immunodeficiency viruses
- ◆ HIV/HCV - HIV/HCV co-infected patients
- ◆ HCV– Hepatitis C virus
- ◆ PAD– Peripheral arterial disease