Hepatitis C is Associated with Higher Short-Term Complication Rates after Initial Aseptic and Septic Revision Total Hip Arthroplasty: A Matched Cohort Study

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INTRODUCTION: Recent studies have documented high complication risk after primary total hip arthroplasty (THA) in patients with hepatitis C (HCV). However, it is unclear if HCV also negatively impacts outcomes of revision THA (rTHA). The purpose of this study was to compare complication rates after rTHA for patients with HCV versus matched controls.

METHODS: A retrospective matched cohort study was performed using the PearlDiver database. Patients who underwent rTHA were identified by claims containing procedural codes for rTHA without (i.e., aseptic) or with (i.e., septic) diagnosis codes for prosthetic joint infection (PJI) or concomitant antibiotic spacer insertion/removal. Within this population, patients with HCV (n = 1,746) were propensity score matched 1:3 with controls (n = 5,238) on age, sex, and several comorbidities (**Table 1**). Trend analysis of annual rTHA volume performed in patients with HCV between 2010 and 2019 was conducted with the Cochran-Armitage trend test. Multivariable logistic regression was used to compare rates of 90-day medical complications and prosthesis-related complications within two years after rTHA

RESULTS: From 2010 through 2019 (**Figure 1**), the proportion of rTHA procedures that were performed in patients with HCV trended significantly upward (3.9% to 4.8%, p < 0.001). Initial septic rTHA was significantly more common in the HCV cohort (28.0% vs. 19.0%, p < 0.001). Patients with HCV exhibited significantly higher rates of acute kidney injury (7.6% vs. 4.4%; OR 1.50), transfusions (20.6% vs. 14.6%; OR 1.38), and readmission (21.9% vs. 17.4%; OR 1.19) within 90 days and re-revisions for PJI within two years (10.9% vs. 6.5%; OR 1.73) (**Table 2**). In subgroup analyses based on the indication for initial rTHA (**Tables 3 and 4**), rates of re-revision for PJI after aseptic rTHA (7.1% vs. 3.8%; OR 1.82) and periprosthetic fracture after septic rTHA (4.5% vs. 1.6%; OR 2.77) were significantly higher in patients with HCV.

DISCUSSION AND CONCLUSION: The proportion of rTHA performed in patients with HCV significantly increased between 2010 and 2019. Patients with HCV exhibited significantly higher rates of 90-day medical complications, rerevisions for PJI after initial aseptic rTHA, and periprosthetic fracture after initial septic rTHA. This data can be useful to arthroplasty surgeons treating these patients who exhibit high complication risk and comprise an increasingly larger percentage of all patients undergoing rTHA.

13000							6.0%
13000			_		_		3.8%
1000	<	=		$ \overline{}$		~	48
100 TRA PUCABAN							10. 0
							2.0%
2900							1.0%
							LOS

Characteristics	HCV (n = 1,746)	No HCV (n = 5,238)	p-value
Age (Years), Mean ± 5D	58.44±9.10	58.43 ± 9.15	0.974
Female Sex, n (%)	789 (45.2)	2,366 (45.2)	1
U.S. Region, n (%)1			
Northeast	380 (21.8)	1,023 (19.5)	0.047
South	(81 (39.0)	1,911 (36.4)	0.063
Midwest	330 (18.9)	1,491 (28.5)	< 0.001
West	348 (19.9)	799 (15.3)	< 0.001
BMI, a (%) ²			
<30	121 (45.8)	290 (35.3)	0.003
10-35	55 (20.8)	191 (23.2)	0.467
35-93	39 (14.8)	136 (16.5)	0.558
>40	49 (19.5)	205 (24.9)	0.041
Comerbidities, n (%)			
Diabetes Mellitus	840 (48.1)	2,516 (48.0)	0.978
Obesity	709 (40.6)	2,133 (40.7)	0.955
Tobacco Use	1,272 (72.9)	3,813 (72.8)	0.988
Hypertension	1,543 (88.4)	4,635 (88.5)	0.931
Revision Indication, n (%)			
Asoptic	1,257 (72.4)	4,224 (80.6)	< 0.001
Septic	489 (28.0)	1,014 (19.4)	< 0.001
LOS (Davx), Mean + SD Region dots mailable for 99%	4.80 ± 4.57	3.76 ± 2.95	< 0.001

	mcv (n = 3,746)		Controls (n = 5,236)		Statistical Analysis (Steleronex Group, HCV Cobert		
Complication		%		- %	OR (99% CD)	p value	
90 Deptr							
Dogs Vois Thrombosis	- 11	0.6%	33	0.8%	0.54 (0.45-1.83)	0.872	
Pulmonary Embolism	22	1.5%	68	1.1%	1.02 (9.68-1.65)	0,544	
Acute Kidney Injury	132	7.6%	229	4.6%	1.50 (1.19-1.89)	938.0	
Urinary Tract Infection	186	6.2%	303	5.8%	1.06 (0.85-1.35)	0.525	
Transferior	359	20.6%	163	14.6%	1.38 (1.20-1.99)	< 0.801	
Inputient Exadminsion	363	21.9%	914	17.4%	1.19 (1.00-1.36)	0.814	
2 Tears							
Sopio En-Ravision	190	13.9%	341	6.5%	1.73 (1.43-2.10)	< 0.801	
Assptic Re-Revision	181	33,4%	560	30.7%	0.56 (9.80-1.14)	0.864	
Dislocation.1	43	2.6%	98	1.9%	1.27 (9.88-1.82)	0.199	
Periprorthetic Fracture	59	2.9%	104	2.8%	1,40 (3,95-1,97)	0.858	



