

Readmissions among patients admitted with hypertensive emergency based on HIV status.

Background: People with HIV are at increased risk of developing cardiovascular diseases. Hypertensive emergency (HTNE), a complication of hypertension with potentially serious health implications has high healthcare utilization. The objective of our study is to evaluate the impact of HIV on readmission rates in patients with HTNE.

Methods: We utilized the National Readmissions Database (NRD) to identify all admissions during the 2010 to 2017 time period with a primary discharge diagnosis of HTNE and excluded those associated with a length of stay greater than seven days. Admissions were stratified by HIV status and comparisons were made with element-wise regression and the Rao-Scott chi-square test for continuous and discrete variables, respectively. We investigated predictors of all-cause readmission via multivariable logistic regression.

Results : A total of 612,854 hospitalizations with a primary discharge diagnosis of HTNE were identified, and 4,115 (0.7%) were associated with a positive HIV status. There was a total of 43,937 30-day readmissions, and the rate was higher in regard to positive HIV status (29.8% vs. 15.0%; $P < 0.001$). Renal failure was the most frequent reason for HIV readmissions and the second most frequent reason for non-HIV readmissions (15.6% vs. 10.3%; $P < 0.001$). In contrast, heart failure was the most frequent reason for non-HIV readmissions and the second most frequent reason for HIV readmissions (10.3% vs. 11.9%; $P = 0.234$). There was a higher median cost for HIV readmissions in comparison to non-HIV readmissions (\$7,660 vs. \$7,490; $P < 0.001$). Finally, HIV was attributed to 40.6% increased odds of readmission after adjusting for pertinent clinical and demographic factors ($P < 0.001$).

Conclusion: HIV positive status is associated with an increased risk for 30-day readmission after index hospitalization for HTNE. Older age, lower income quartile, presence of CKD, CHF, MI, pulmonary hypertension and discharge to other healthcare facilities were associated with higher rate of readmission. Smokers paradox and obesity paradox were observed as well. As a quality of care benchmark, it is pivotal to identify patients at the highest risk of rehospitalization to allow for targeted intervention to better understand and decrease readmissions due to HTNE in HIV patients.

Selected Variables of Interest	Odds Ratio	95% Confidence Interval		<i>P</i>
Age (Years)				
61 vs. 49	0.87	0.85	0.88	< 0.001
75 vs. 49	0.77	0.75	0.79	< 0.001
75 vs. 61	0.89	0.87	0.90	< 0.001
Biological Sex				
Male		Reference		
Female	1.04	1.00	1.08	0.039
Index Admission Length of Stay (Days)				

3 vs. 2	1.08	1.05	1.10	< 0.001
4 vs. 2	1.15	1.12	1.18	< 0.001
4 vs. 3	1.07	1.05	1.08	< 0.001
Income Quartile				
0-25th		Reference		
26-50th	1.00	0.96	1.04	0.961
51-75th	0.98	0.93	1.03	0.374
76-100th	0.95	0.90	1.00	0.057
Chronic Kidney Disease				
No		Reference		
Yes	2.13	2.04	2.21	< 0.001
Congestive Heart Failure				
No		Reference		
Yes	1.35	1.30	1.41	< 0.001
History of MI				
No		Reference		
Yes	1.22	1.14	1.30	< 0.001
Pulmonary Hypertension				
No		Reference		
Yes	1.08	1.01	1.16	0.035
Current or Past Smoker				
No		Reference		
Yes	0.95	0.92	0.99	0.013
Obesity				
No		Reference		
Yes	0.72	0.69	0.76	< 0.001
Discharge Disposition				
Home		Reference		
Other than Home	1.42	1.36	1.48	< 0.001