READMISSIONS AMONG PEOPLE LIVING WITH HIV ADMITTED FOR HYPERTENSIVE EMERGENCY

Shantanu Patil, MD Sanu Rajendraprasad, MD Manasa Velagapudi, MBBS Sarah Aurit, MPH, Venkata Andukuri, MD and Venkata Alla, MD

Creighton University and CHI Health

Introduction:

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:

Data source: National Readmissions Database (NRD)

Study cohort:

All adult admissions discharged alive between January 1st and November 30th of each year from 2001-2017 with a primary discharge diagnosis of HTNE and HIV status per the following International Classification of Diseases 9th Clinical Modification (ICD-9-CM) and ICD-10-CM codes.

Results:

- 612,854 hospitalizations with a primary discharge diagnosis of HTNE
- 4,115 (0.7%) were associated with a positive HIV status
- 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).
- Higher median cost for HIV readmissions in comparison to non-HIV readmissions ($7,660 vs. $7,490; P < 0.001).
- HIV was attributed to 40.6% increased odds of readmission after adjusting for pertinent clinical and demographic factors (P < 0.001)

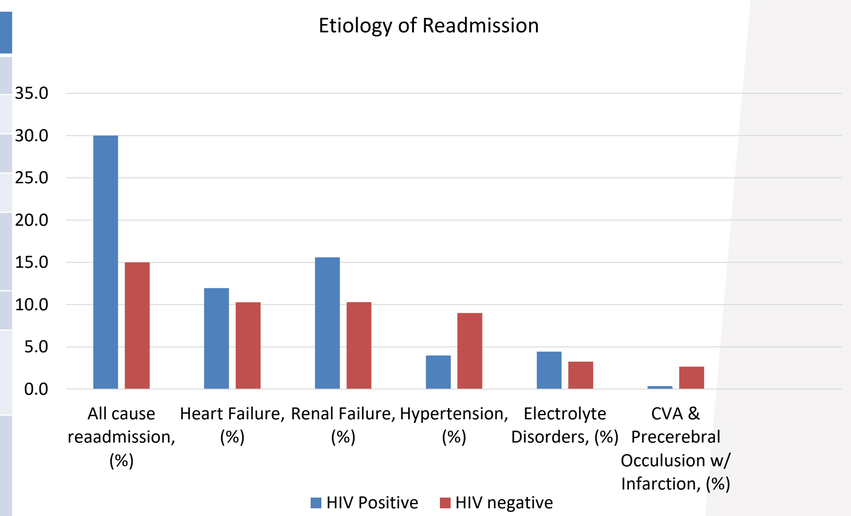
Discussion:

- HIV had a higher morbidity burden despite being significantly younger (mean age 42 years vs. 70 years).
- Social factors and continuity of care could impact outcomes in HIV populations to a greater extent.

Table 1. Baseline characteristics of patients admitted with HTNE based on HIV status

Characteristics	HIV Status		P
	Negative	Positive	
	n=608,739	n=4,115	
Age in years, Mean (SE)	61 (0.1)	48 (0.3)	< 0.001
Age categories (%)			
< 65 years	58.0	42.0	< 0.001
≥ 65 years	92.3	7.7	
Female sex (%)	57.4	41.5	< 0.001
Median household income category for patient's zip code (percentile)			
0-25th	42.3	60.8	< 0.001
26th-50th	25.5	20.9	
51st-75th	19.5	12.9	
76th -100th	12.7	5.4	
Elixhauser comorbidity index, Mean (SE)	10 (0.1)	23 (0.6)	< 0.001
Diabetes without complications (%)	26.7	16.7	< 0.001
Diabetes with complications (%)	10.5	6.5	< 0.001
Dyslipidemia (%)	31.6	16.2	< 0.001
Current or past smoker (%)	31.5	41.0	< 0.001
History of stroke or TIA (%)	15.5	12.0	<0.001
Drug abuse (%)	5.9	17.8	< 0.001
Deficiency anemia (%)	24.3	48.8	< 0.001
Congestive Heart Failure (%)	14.6	20.8	< 0.001
Obesity (%)	18.9	8.9	< 0.001
Atrial fibrillation or flutter (%)	8.7	3.0	< 0.001
Chronic kidney disease (%)	39.8	73.1	< 0.001
Psychoses (%)	3.9	6.8	< 0.001
Length of Stay, Mean (SE)	2.8 (0.0)	3.0 (0.1)	< 0.001
Location/Teaching status of hospital (%)			
Non-metropolitan	11.6	6.3	< 0.001
Metropolitan non-teaching	36.1	27.8	
Metropolitan teaching	52.3	65.9	

Figure 1. Total frequency and cause of readmission based on HIV status



- Pathophysiology and progression of HTN in patients with HIV may be distinct due to factors related to chronic inflammation, microbial translocation, immune suppression and reconstitution, lipodystrophy, HAART mediated metabolic effects and HIV-related renal disease.
- CKD was present in approximately 75% of patients with HIV positive status, compared to less than half in those without HIV and was the most common cause for readmission in HIV patients.

Conclusion:

In this study of patients hospitalized for HTNE, HIV positive status was associated with an excess risk of 30-day readmission. Further research into the exact mechanisms of this excess risk and the impact of targeted interventions to improve outcomes in HIV patient with HTN is necessary.

References:

1. Kirkland EB, Heincelman M, Bishu KG, Schumann SO, Schreiner A, Axon RN, Mauldin PD, Moran WP. Trends in Healthcare Expenditures Among US Adults With Hypertension: National Estimates, 2003-2014. *J Am Heart Assoc*. 2018;7(11):e008731. doi:10.1161/JAHA.118.008731