



Demographics of Hepatitis C Virus Antibody and RNA Positivity within an Emergency Department Screening Program



Talia Segal¹, BS; Ashar Ata, MD, MPH, PhD²; Adam Rowden, DO³; Danielle Wales, MD, MPH³; Michael J. Waxman, MD, MPH⁴
 Albany Medical College¹, Albany Medical Center Department of Emergency Medicine², Albany Medical Center Internal Medicine/Pediatrics³

Introduction

In support of the recent United States Preventive Services Task Force's (USPSTF) revised recommendations for non-targeted hepatitis C virus (HCV) screening, we have noted a shift away from active infections within the birth cohort (patients born between 1945-1965), as these individuals have often undergone successful treatment, and a shift towards younger adults who are RNA positive, especially people who use intravenous drugs (PWID).

Methods

Located in Northeastern New York State, Albany Medical Center conducts routine emergency department (ED) HCV screening, with active linkage to care.

We performed a retrospective study of our HCV linkage to care data from April 2019 to June 2020.

Patients were offered screening if they belonged to the birth cohort, were PWID, or at staff discretion.

We estimated the effect of birth cohort, intravenous drug use and other potential risk factors on RNA positivity by calculating the relative risk with 95% confidence intervals (CI) and Modified Poisson Regression.

Table 1. Characteristics in HCV Antibody Screening in an Emergency Department

Proportion of PWID in non-birth cohort vs. birth cohort		
Non-birth cohort	62.9% (n=78)	RR = 2.97 (2.04 to 4.31)
Birth-Cohort	21.2% (n=25)	

Proportion of Homeless Patients in non-birth cohort vs. birth cohort		
Non-birth cohort	17.7% (n=22)	RR = 1.90 (0.967 to 3.75)
Birth-Cohort	8.59% (n=11)	

Table 2. HCV RNA Positivity Rate Among PWID and Homeless Populations Screened in an Emergency Department

PWID Patients-RNA Status		
RNA+	62.2% (n=56)	RR = 2.22 (1.58 to 3.13)
RNA-	30.9% (n=47)	

Homeless Patients-RNA Status		
RNA+	24.4% (n=22)	RR = 2.05 (1.50 to 2.80)
RNA-	7.24% (n=11)	

Results

There were 242 people that were HCV antibody positive. The mean age was 50.9 years-old, with 118 (48.8%) in the birth cohort and 103 (42.56%) PWID.

As compared to the birth cohort, a significantly greater proportion of non-birth cohort patients were PWID (62.9% vs 21.2%, RR = 2.97 [95% CI = 2.04 – 4.31]) and homeless (17.7% vs 8.6%, RR=1.90 [95% CI = 0.97-3.75]).

Birth cohort patients were 0.55 times (95%CI: 0.39 to 0.79) less likely to be RNA positive. PWID were 2.22 times (95% CI: 1.58 to 3.13) and homeless people were 2.05 times (95% CI: 1.50 to 2.80) more likely to be RNA positive.

After multivariable adjustment, birth cohort was not a significant risk factor for RNA positivity but PWID (RR: 1.84; 95% CI: 1.26 to 2.68) and homelessness (RR: 1.69; 95% CI: 1.20 to 2.39) were significantly associated with RNA positivity.

Conclusions

These data suggest that the RNA positivity rate is higher among the non-birth cohort age group but is explained by the higher prevalence of drug use and homelessness. The findings support USPSTF's new guidelines for testing all adults and shed light on the demographics of populations at risk for active infection vs. populations who are antibody positive and RNA negative.

Further research might explore (a) whether these findings are applicable to other clinical settings and geographic locations and (b) the feasibility of targeting patients with active infection in settings such as the ED.

This work was supported by the Gilead FOCUS Foundation. FOCUS funding supports HIV, HCV, and HBV screening and linkage to the first medical appointment after diagnosis. FOCUS partners do not use FOCUS awards for activities beyond linkage to the first medical appointment.