PATTERNS AND CORRELATES OF CIGARETTE SMOKING AMONG PEOPLE WHO INJECT DRUGS RECEIVING HCV TREATMENT

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BACKGROUND

Cigarette smoking has emerged as a leading cause of mortality among people with hepatitis C virus (HCV). Epidemiological data suggests that many **chronic health conditions associated with cigarette smoking**, such as non-hepatic cancers, cardiovascular disease, and respiratory conditions, **have become a major cause of mortality among this population**. In addition, cigarette smoking is associated with life-threatening complications among HCV individuals, including liver fibrosis, cirrhosis, and cancer.

Limited studies to date have assessed rates of smoking among people infected with HCV compared to other infectious diseases, such as including human immunodeficiency virus (HIV). While prior research exploring smoking among people with HCV included some individuals with a history of injection practices, no study to date has exclusively tried to characterize correlates of cigarette smoking among people who inject drugs (PWID). This represents a big gap in the literature as PWID represent the largest group of adults infected with HCV in the US (50-85%).

AIMS

This study aims at assessing rates and correlates of cigarette smoking among HCV-infected PWID.

METHODS

Participants

150 PWID who enrolled in a randomized clinical trial for HCV treatment . The purpose of this trial was to compare the effectiveness of three models of care for HCV treatment: self-administered individual treatment (SIT), group treatment (GT), and directly observed therapy (DOT). Participants were recruited from three opioid treatment programs (OTP) in Bronx, NY.

Inclusion criteria: (1)being aged ≥18, (2) being able to speak English or Spanish, (3) having HCV genotype 1, (4) being psychiatrically stable, (5) willing to receive HCV therapy onsite in their OAT program, (5) being HCV treatment naïve, (5) receiving opiate agonist treatment (OAT) in a OTP clinic, and (6) being able to provide informed consent.

Measures

➢ **Sociodemographic characteristics**: age, sex, race/ethnicity, educational attainment, income, and employment status.
➢ **Smoking-related measures:** four questions assessing smoking-related characteristics extracted from the National Health Interview Survey.
   ▪ **Current smoker** (≥100 cigarettes lifetime and currently smoking)
   ▪ **Former smoker** (≥100 cigarettes lifetime and not currently smoking)
   ▪ **Never smoker** (<100 cigarettes lifetime)
➢ **Drug and alcohol use:** Addiction Severity Index-Lite

Statistical Analyses

➢ Descriptive and frequency analyses.
➢ Chi-square and Student t test analysis.

RESULTS

Smoking status

➢ 84% (126/150) were current cigarette smokers
➢ 16% (24/150) were non-smokers
   ▪ 66.7% (16/24) were former smokers
   ▪ 33.3 (8/24) were never smokers
➢ Smokers were consuming on average 8.6 (SD= 7.4) cigarettes per day and started smoking when they were 16.6 (SD = 6.4) years old.

Table 1. Sociodemographic characteristics of the study sample

Characteristic	Smokers %/M(SD)	Non-smokers %/M(SD)
Age	50.6 ±10.5	54.7 ± 10.4
Gender, Male	81(64.2)	16(66.6)
Race/ethnicity		
Black	35(27.7)	5(20.8)
Hispanic or Latino	70(55.5)	14(58.3)
Other	21(16.8)	5(20.7)
Marital Status		
Married/living with a partner	48(38.0)	7(29.1)
Educational attainment		
Less than HS	55(43.6)	9(37.5)
≥ HS graduate/GED	71(56.2)	15(62.5)
Employment status		
Unemployed, retired, or disabled	107(84.9)	17(70.8)
Monthly income		
≤1500	73(57.9)	16(66.7)
Homeless	96(76.2)	20(83.3)

Table 2. Psychiatric and physical conditions by smoking status

Characteristic	Smokers %/M(SD)	Non-smokers %/M(SD)
Mental health diagnoses		
Depression	64(50.8)	9(37.5)
Anxiety	33(26.2)	9(37.5)
Bipolar	18(14.3)	4(16.7)
PTSD	9(7.1)	4(16.7)
Physical conditions		
Asthma/COPD	30(23.8)	8(33.3)
CAD	4(3.2)	0(0)
Diabetes	18(14.3)	8(33.3)
Cirrhosis	33(26.2)	8(33.3)
GERD/PUD	11(8.7)	2(8.3)
Hypertension	47(37.3)	11(45.8)
Low back pain	19(15.1)	4(16.7)
Migraine/headaches	5(4.0)	0(0)
Obstructive sleep apnea	1(0.8)	0(0)
Peripheral vascular disease	2(1.6)	1(4.2)
Seizure disorder	4(3.2)	1(4.1)

Note: PTSD= Post traumatic stress disorder; COPD= Chronic obstructive pulmonary disease; CAD= Coronary artery disease; GERD/PUD= Gastro-esophageal reflux disease/peptic ulcer disease

Table 3. Current substance use by smoking status (N=150)

Characteristic	Smokers %/M(SD)	Non-smokers %/M(SD)
Urine drug screen		
Opiates	32(25.4)	5(20.8)
Cocaine	**41(32.5)**	**3(12.5)**
Benzodiazepines	19(15.1)	4(16.7)
Amphetamines	14(11.1)	3(12.5)
Alcohol and drug use		
Past 30 days (days)		
Alcohol	**44(34.92)**	**3(12.5)**
Alcohol intoxication	**36(28.57)**	**0(0)**
Cannabis	38(30.16)	6(25)
Methadone	124(98.41)	24(100)
Opiates	28(22.22)	5(20.83)
Cocaine	**35(27.78)**	**1(4.17)**
Barbiturates	4(3.17)	2(8.33)

DISCUSSION

➢Among our sample of 150 individuals treated for HCV, we found that **the majority of the patients (84%) were current cigarette smokers**. The smoking prevalence found in this study is higher than the estimates reported in earlier studies among individuals suffering from HCV (i.e., 62.4%). This finding is likely due to the fact that our entire population was among PWID, a population most severely afflicted with socioeconomic disadvantage.

➢Another important finding of the current study was the identification of **recent alcohol and cocaine use as correlates of cigarette smoking** among this sample of PWID receiving HCV treatment. This finding is in agreement with earlier studies which have reported high rates of alcohol drinking and cocaine use among HCV antibody positive PWID.

➢**Cigarette smoking among HCV infected PWID is an important and timely topic,** especially with the national increase of HCV infections related to the growing opioid epidemic. While there has been an increased effort to develop initiatives to combat HCV, little attention has been paid to both understand and address compounding drug use, namely cigarette smoking that likely worsen health outcomes in this vulnerable population.

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INHSU 2019

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