

Lung Cancer Screening in at-risk patients with HIV in a Midwestern Clinic

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Introduction

Patients with HIV (PWH) have an increased risk of cancer compared to the general population.¹

HIV-related cancers can be subdivided into AIDS-defining cancers (ADCs) and non-AIDS-defining cancer (NADCs).

Lung cancer is a NADC that has a two- to five-fold increased risk for development, occurs at younger ages, progresses rapidly, is diagnosed at later stages, and has increased mortality.²

Tobacco use is the main contributor for development of lung cancer and highlights the importance of tobacco cessation counseling in PWH.

Currently, no US guidelines exist for tobacco cessation counseling in PWH, but the European AIDS Clinical Society has released their recommendations.³

In 2013, the U.S. Preventive Services Task Force (USPSTF) released lung cancer screening (LCS) guidelines for the general population.⁴

However, the USPSTF guidelines may not be applicable to specific populations, such as PWH.

Project Purpose

The objective of this study is to evaluate the frequency of and factors associated with LCS using computed tomography in at-risk PWH.

Methods

A retrospective chart review of patients seen at a Midwestern HIV Clinic between July 1, 2016 to June 30, 2018 was conducted.

We defined patients as eligible for lung cancer screening if they met the USPSTF criteria: adults aged 55 to 80 years old, have a 30 pack-year smoking history, and currently smoke or have quit within the past 15 years

Demographic, clinical, laboratory, and referral for LCS information were collected.

Descriptive statistics and logistic regression models were used for analysis.

Results

Our analysis included 347 patients who were further evaluated using secondary inclusion criteria and who met the USPSTF lung cancer screening guidelines (Fig 1).

Referral was made for 22/256 patients (13% met the USPSTF criteria and 5% did not).

Patients who received tobacco cessation counseling (OR 7.83, P=0.048) and with hepatitis C infection (OR 4.32, P=0.002) were more likely to receive LCS referral.

Out of those who received LCS referral, 12/22 (55%) completed the referral.

Patients with hepatitis C infection were more likely to complete LCS referral (OR 8, P=0.038).

Figure 1. Inclusion criteria for retrospective chart review

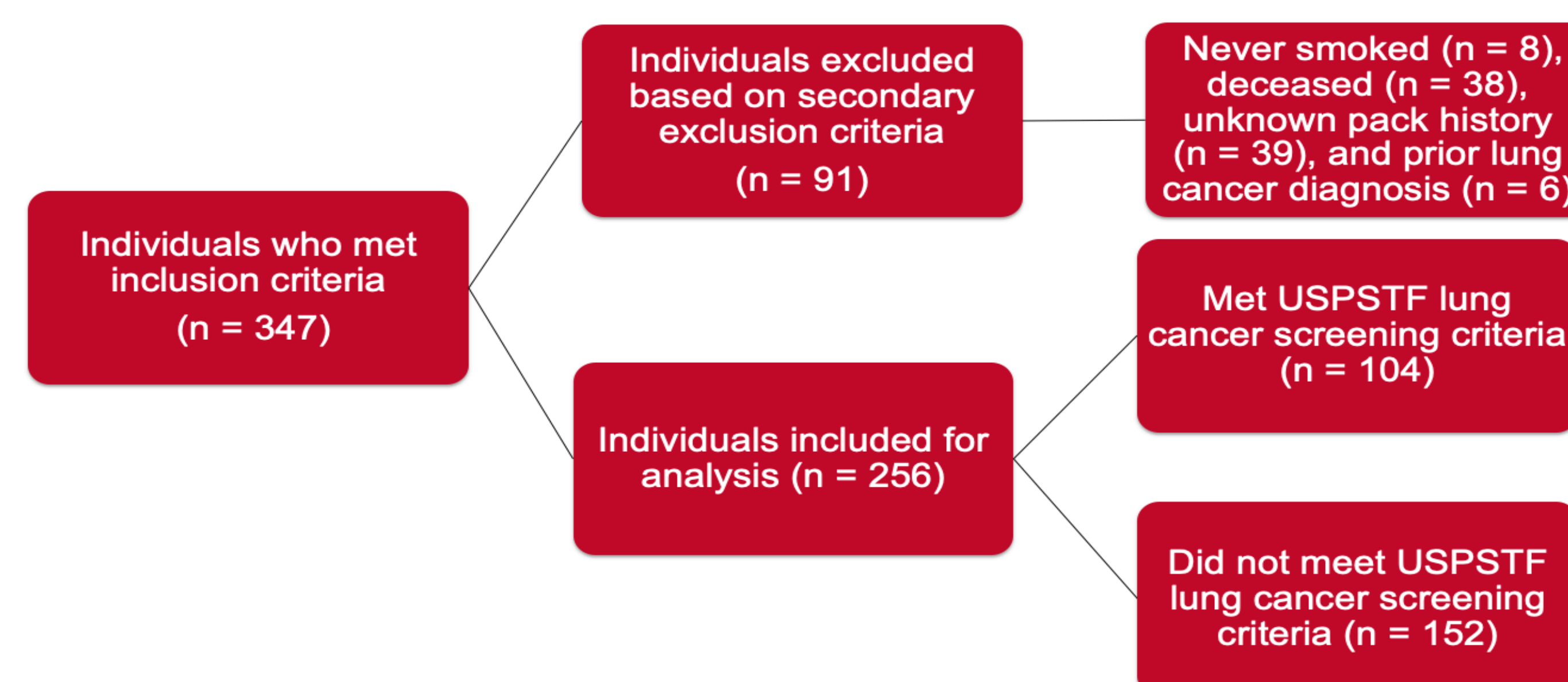


Table 1. Lung cancer screening referral in PWH with specific factors . All tests are chi-square tests except as noted: a – t-test; b – Fisher's exact test.

	N	Received referral Mean (sd) or n (%)	No referral Mean (sd) or n (%)	p-value
Age, years	256	60.8 (3.5)	60.8 (5.1)	0.984 ^a
Gender				
Male	256	18 (82)	175 (75)	0.703 ^b
Female		4 (18)	56 (24)	
Transgender, male to female		0 (0)	3 (1)	
HIV Risk Factors				
Heterosexual	213	9 (45)	113 (59)	0.244
MSM (males only)	153	11 (69)	86 (63)	
Race/Ethnicity				
Non-Hispanic White	256	11 (50)	160 (68)	0.168 ^b
Non-Hispanic Black		9 (41)	59 (25)	
Other		2 (9)	15 (6)	
Poverty Level				
Less than 100% of FPL	196	10 (48)	76 (43)	0.796 ^b
100-200% of FPL		8 (38)	60 (34)	
Over 200% FPL		3 (14)	39 (22)	
Insurance				
Private	256	11 (50)	121 (52)	0.908 ^b
Medicare/Medicaid/VA		11 (50)	106 (45)	
RW/Pending/None		0 (0)	7 (3)	
Tobacco Cessation Counseling	253	21 (95)	169 (73)	0.019 ^b
Hepatitis C	256	10 (45)	38 (16)	0.001
Number of visits 2017-2018 (Any)	256	12.0 (9.2)	9.0 (9.6)	0.155 ^a

FPL – federal poverty level, VA – Tricare/Veterans Administration, RW – Ryan White Part C

Table 2. Logistic regression models for factors that may influence lung cancer screening referral

	N	Odds Ratio	p-value
Age, years	22	0.95	0.683
Male vs. Female	22	1.25	0.840
Heterosexual	20	0.46	0.394
MSM (males only)	16	2.63	0.383
Tobacco Cessation Counseling	253	7.70	0.048
Hepatitis C	256	4.30	0.002
First CD4 T-cell Count			
0-200	249	Ref.	Ref.
201-350		1.49	0.587
351-500		3.72	0.042
501+		1.27	0.718
First CD4 T-cell Count > 500	249	0.70	0.479

Conclusion and Future Directions

Only 13% of patients who met USPSTF criteria were referred for LCS.

Patients who received tobacco cessation counseling were more likely to receive a referral.

Patients with hepatitis C infection were more likely to receive and complete LCS referral.

While our study is limited by the sample size and retrospective nature, it highlights the need for improved LCS in PWH.

Future prospective studies should examine the factors associated with LCS in PWH.

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