Poster 0754

Risks of Opportunistic Infections for HIV+ and Uninfected Veterans Undergoing Cancer Chemotherapy

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BACKGROUND

- Cancer is a leading cause of morbidity and mortality for persons with HIV (PWH)
- PWH with malignancies treated with chemotherapy may be at enhanced risk of opportunistic infections (OIs)
- We sought to clarify risks associated with OIs in PWH undergoing chemotherapy, using data from a large, national cohort of Veterans

METHODS

Population

- Data from the Virtual Cohort of Veterans Aging Cohort Study (VACS)
- Tumor site was collected from linked cancer registry data
- PWH and HIV-negative veterans who were diagnosed with malignancy between 01/01/1996 and 12/31/2018, and received at least one chemotherapy infusion

Outcome

- incidence of OIs 14 days to 6 months after first chemotherapy treatment

Analysis

- We calculated inverse probability weights of HIV infection, using the conditional probability of being a PWH given the baseline characteristics of age, sex, tumor site, race/ethnicity, year of cancer diagnosis, smoking status and alcohol use
- We used inverse probability weighted Poisson models to evaluate the association between HIV and OI risk overall, then stratified by hematological and non-hematological malignancies
- We assessed the risk of OIs in PWH, stratified by CD4 count at cancer diagnosis and by PCP prophylaxis use.

RESULTS

Table 1 : Baseline characteristics according to HIV-status in Veterans with malignancies treated by chemotherapy.

Characteristics	PWH (n=2,135)	Without HIV (n=3,031)	p-value
Age (median, IQR)	56 (49-62)	59 (54-64)	<0.001
Male, n (%)	2,105 (98.6)	2,962 (97.7%)	0.02
Race/Ethnicity, n (%)			<0.001
White	960 (45.0)	1,201 (39.6)	
African-American	973 (45.6)	1,562 (51.5)	
Hispanic	149 (7.0)	217 (7.2)	
Other	53 (2.5)	51 (1.7)	
Smoking, n (%)			<0.001
Never	395 (18.5)	458 (15.1)	
Current	1,146 (53.7)	1,757 (58.0)	
Former	327 (15.3)	554 (18.3)	
Unknown	267 (12.5)	262 (8.6)	
Charlson comorbidity index (median, IQR)	6 (4-8)	1 (0-2)	<0.001
Alcohol Use, n (%)	300 (14.1)	586 (19.3)	<0.001
Malignancies, n (%)			<0.001
Hematologic	645 (30.2)	479 (15.8)	
Non-hematologic	1,490 (69.8)	2,552 (84.2)	
PCP prophylaxis use, n (%)	640 (30.0)	126 (4.2)	<0.001
HIV-related characteristics			
Recent CD4, cells/mm3, median (IQR)	289 (141-512)	NA	
Controlled viremia	1,327 (69.0)	NA	

Table 2 : Opportunities infections by HIV-status among hematologic and non-hematologic malignancies

Types of OI	Hematologic Malignancies		Non-hematologic Malignancies		Total
	PWH (n=645)	Without HIV (n=479)	PWH (n=1,490)	Without HIV (n=2,552)	
Candida oesophagitis	11 (1.7)	1 (0.2)	22 (1.5)	9 (0.4)	43
Zoster	10 (1.6)	2 (0.4)	11 (0.7)	7 (0.3)	30
CMV	9 (1.4)	1 (0.2)	1 (0.07)	0 (0)	11
PCP	8 (1.2)	0 (0)	3 (0.2)	0 (0)	11
Atypical Mycobacterium	2 (0.3)	0 (0)	3 (0.2)	1 (0.04)	6
Cryptococcus	2 (0.3)	0 (0)	1 (0.07)	0 (0)	3
Salmonella bacteremia	0 (0)	0 (0)	0 (0)	1 (0.04)	1
Histoplasmosis	1 (0.2)	0 (0)	0 (0)	0 (0)	1

Table 3 : OI incidence rates/1000 p-y by cancer group

Types of Malignancies	OI Incidence rate/1000 p-y (95%CI)		Incidence rate ratio (95% CI)
	PWH	Without HIV	
All	94.4 (75.3-117.8)	17.5 (11.6-26.4)	4.6 (2.5-8.8)
Hematologic	163.6 (118.4-220.3)	18.6 (7.0-49.5)	10.0 (3.1-32.6)
Non-hematologic	65.3 (48.1-88.7)	17.3 (11.0-27.1)	3.3 (1.5-7.6)

- HIV was associated with increased rate ratio for OI:
  - 4.3 (95% CI 2.3-8.1) for all malignancies
  - 9.8 (95% CI 3.1-31.3) for hematologic malignancies
  - 3.1 (95% CI 1.4-7.0) for non-hematologic malignancies
- Among patients with CD4 levels >200/mm³ at diagnosis:
  - 3 of 3,613 non-hematological cancers (0.08%) were treated for possible PCP (no definitive case)
  - 2 of the 3,375 non-hematological cancers (0.06%) without PCP prophylaxis at cancer diagnosis were treated for possible PCP OIs. No toxoplasmosis occurred.

CONCLUSIONS

- OIs were significantly increased in PWH with malignancies undergoing chemotherapy
- 39% of OIs in PWH were Candida esophagitis
- Our study does not support systematic PCP prophylaxis in PWH with non- hematological malignancies and controlled HIV-disease, as ASCO recommends implementation for risks >3.5%

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