



Should We Do More?

Amy Spallone, MS4¹ and Sheran Mahatme, DO, MPH^{1, 2}

¹Department of Internal Medicine, Albany Medical College, Albany, NY and ²Section of Infectious Diseases, Stratton VA Medical Center, Albany, NY

ABSTRACT

The incidence of non-AIDS-defining cancers (NADCs) is occurring at a much higher rate among HIV-infected persons when compared to the general population due to prolonged survival with antiretroviral therapy.

We analyzed the types of malignancy in our population and correlated if applicable and appropriate preventive screening methods were performed prior to the subsequent diagnosis of malignancy.

A retrospective medical chart review was performed from 2004-2014 at the Stratton VAMC using ICD-9 codes for HIV and all neoplasms. Preventive screening methods (e.g. smoking cessation counseling, colonoscopy, etc.) were collected for analysis.

Twenty-two patients (78%) were diagnosed with a NADC. Skin cancer was the most common followed by equal numbers of anal, prostate, and lung cancers. Only three patients had documented skin cancer prevention counseling or follow-up. Two patients received anal pap smears, but neither anal cancers in our study were detected by prior screening. Ninety-six percent of males had prostate specific antigen testing, including both patients diagnosed with prostate malignancies. Seventy-nine percent of patients had smoking cessation counseling, including the two individuals who developed lung cancer.

The shift in cancers diagnosed (NADC) among this population highlights the importance cancer screening plays in chronic HIV care. While good screening compliance and cessation counseling was observed in our clinic population, areas of improvement to align more with published guidelines were noted (skin and anal cancer screening). Patients undergoing regular surveillance had objectively shorter diagnosis-to-treatment courses. Whether differing or additional screening from standard guidelines is warranted in HIV patients requires further study.

BACKGROUND

- The advent of highly active antiretroviral therapy (HAART) has improved the life expectancy of people living with HIV. This has led to an increased number of HIV-infected individuals who are at risk of developing non AIDS defining cancers (Table 1) due to aging.
- In the United States, NADCs such as lung, liver, colorectal, anal, and skin cancers now account for the majority of overall cancer burden found in HIV-infected individuals.
- Not only are NADCs often more aggressive in nature, the prognosis for HIV-infected cancer patients is typically worse than in those who are uninfected.
- Risk factors described as potential causes of NADCs include HIV itself, coinfection with oncogenic viruses, advanced age, multiple sexual partners, sun exposure, smoking, alcohol use, substance abuse, and HBV and HCV coinfection. The association of HAART as well as the degree of immunosuppression with this risk remains uncertain.
- Primary preventive measures play a critical role in reducing the risk of NADCs, however, standard cancer screening guidelines in people living with HIV/AIDS (PLWHA) are not defined

Objectives

The objectives of this study were to:

- Determine the rates of HIV-infected patients with a concurrent diagnosis of malignancy
- Correlate if appropriate preventive screening methods were performed prior to the subsequent diagnosis of NADCs

Methods

A retrospective medical chart review was conducted based on the ICD-9 codes corresponding to HIV diagnosis (042, 042.0, 042.1, 042.2, 042.9, V08) and neoplasms (≥ 140 and ≤ 240) from September 2004 to September 2014 at the Albany-Stratton VAMC's outpatient HIV clinic population using the electronic medical record. Documented malignancies were stratified into AIDS-defining and non-AIDS-defining cancers and application of current screening guidelines were assessed. Sociodemographic factors were also collected to further evaluate trends within this select VA HIV outpatient population.

RESULTS

Table 1. AIDS-defining vs. non-AIDS-defining cancers

ADC:	NADC:
Non-Hodgkin Lymphoma	Oropharyngeal*
• Diffuse large B cell	Colorectal
• Primary CNS	Esophageal
• Burkitt's	Anal
Kaposi's sarcoma	Liver
Invasive cervical	Pancreas
	Stomach
	Lung
	Bone
	Melanoma
	Skin**
	Breast
	Uterus
	Vaginal
	Ovarian
	Prostate
	Penile
	Testicular
	Bladder
	Kidney
	Hodgkin
	Multiple myeloma
	Leukemia
	Brain

Long, JL, Engels, EA, Moore, RD, et al. "Incidence and Spectrum of Malignancy in the HAART era in an Urban Cohort of HIV-infected Individuals." *J Clin Oncol* 2008; 26: 409-416.

*Lips, tongue, pharynx

**Basal cell, squamous cell

Benign tumors vs. ADCs and NADCs

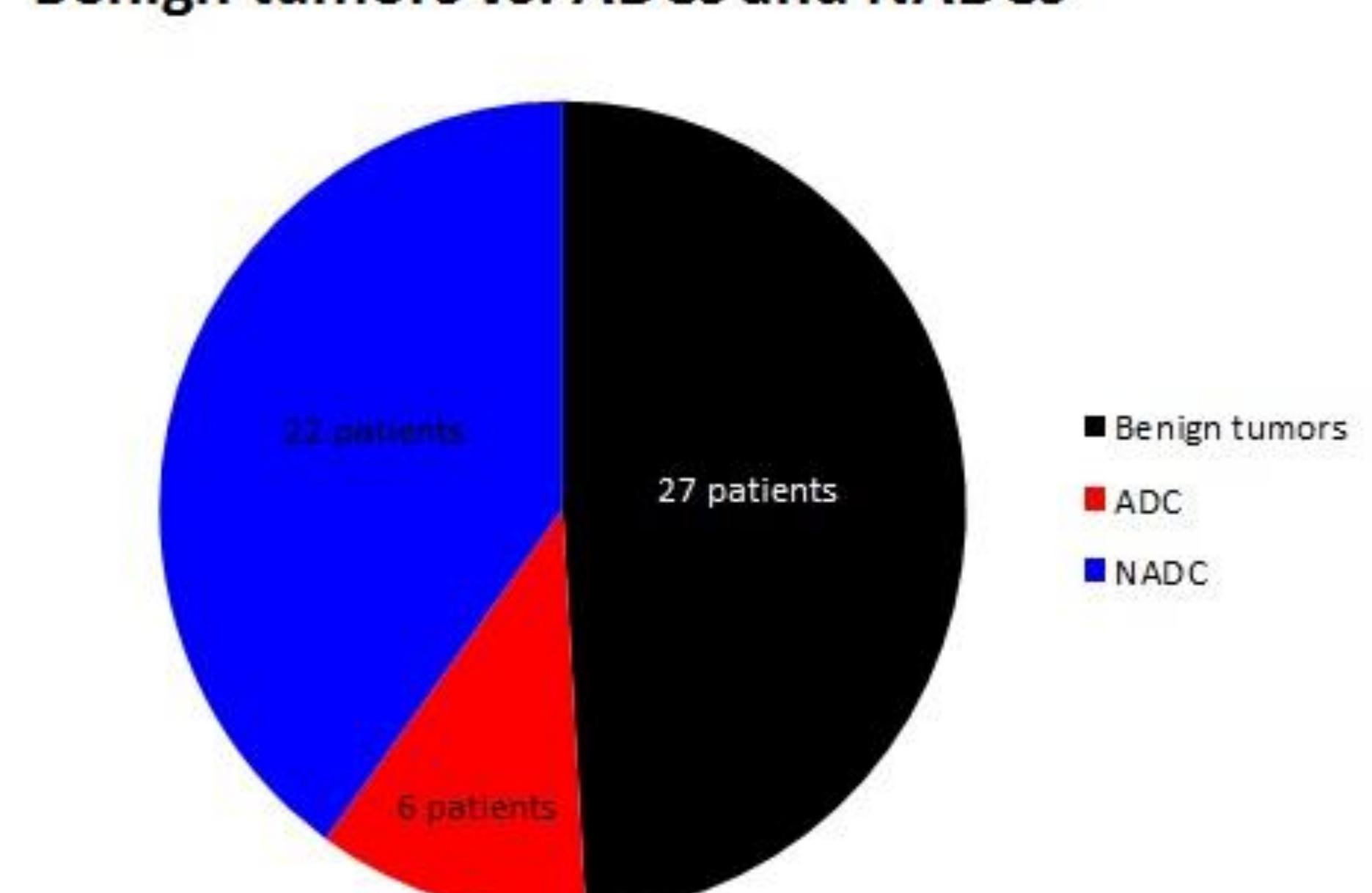


Figure 1: 55 patients identified with concurrent diagnoses of HIV and malignancy, 28 patients with diagnosed ADC or NADC after excluding benign neoplasms (i.e. colonic polyps)

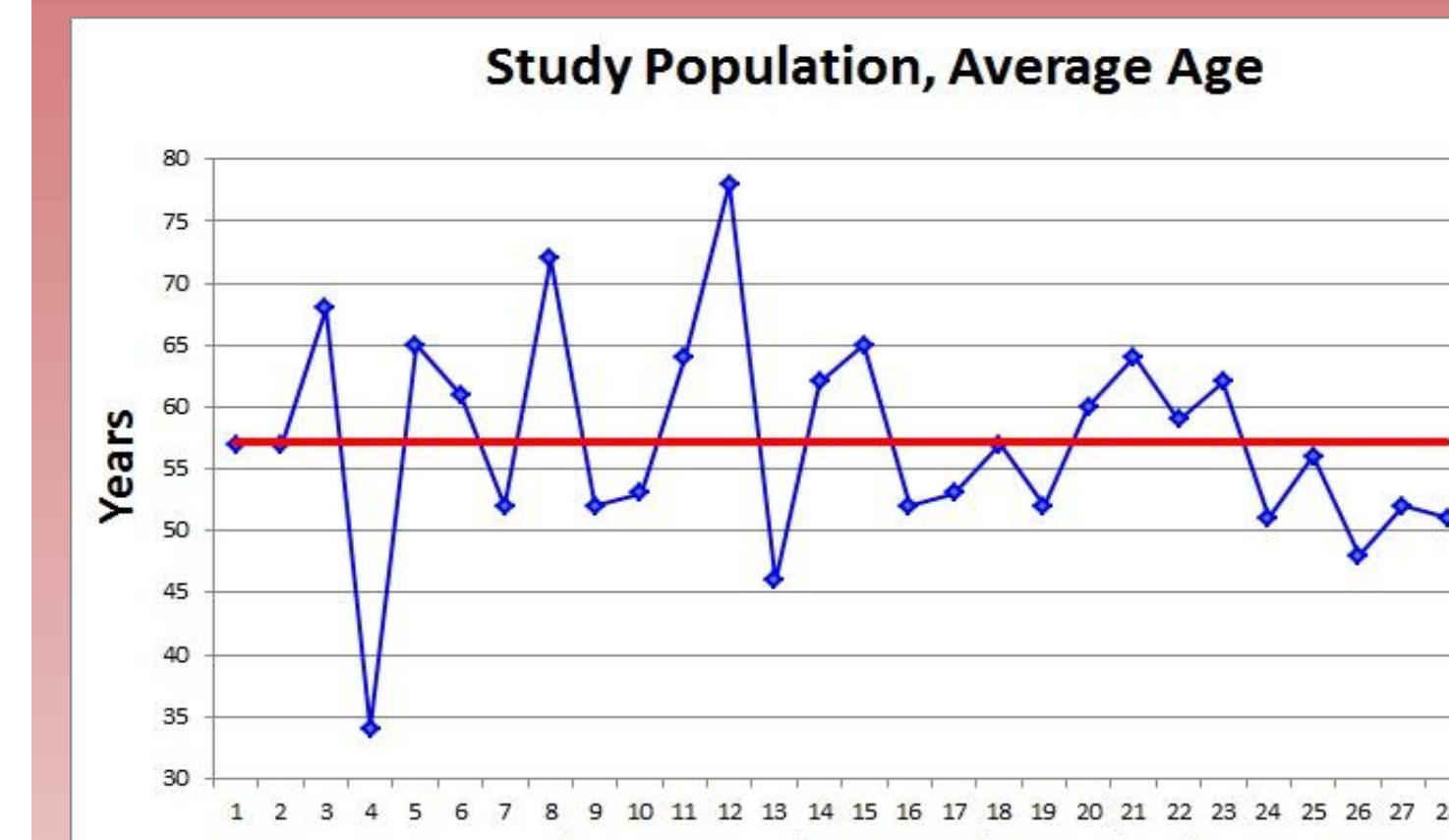


Figure 2: Line graph depicting the average age (57 year old) of 28 HIV-positive patients with a coexisting malignancy.

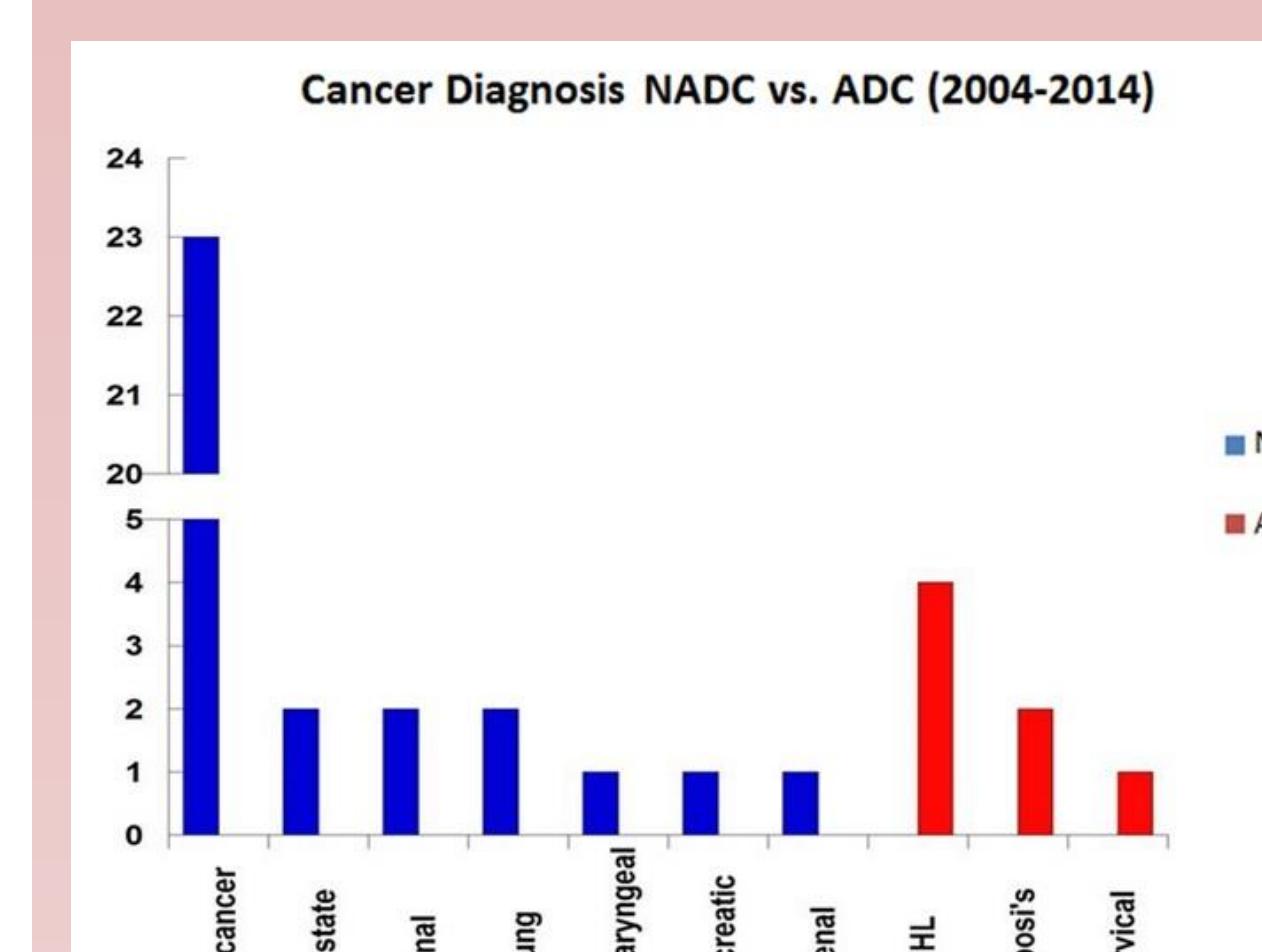


Figure 4: Cancer diagnoses made from 2004 to 2014 at the VAMC's HIV outpatient clinic.

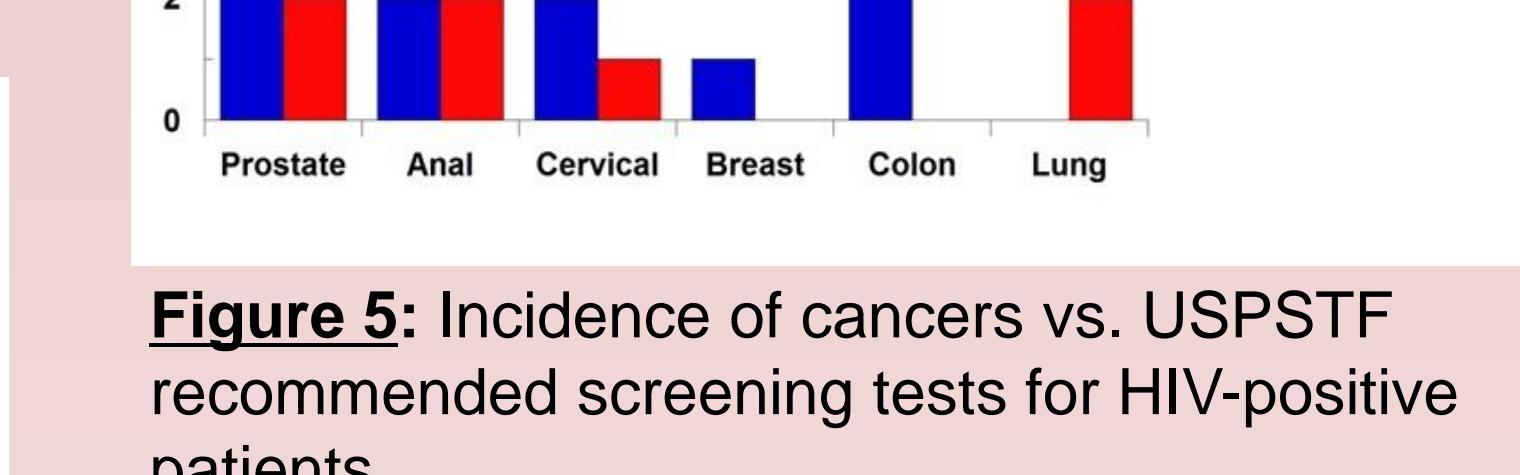
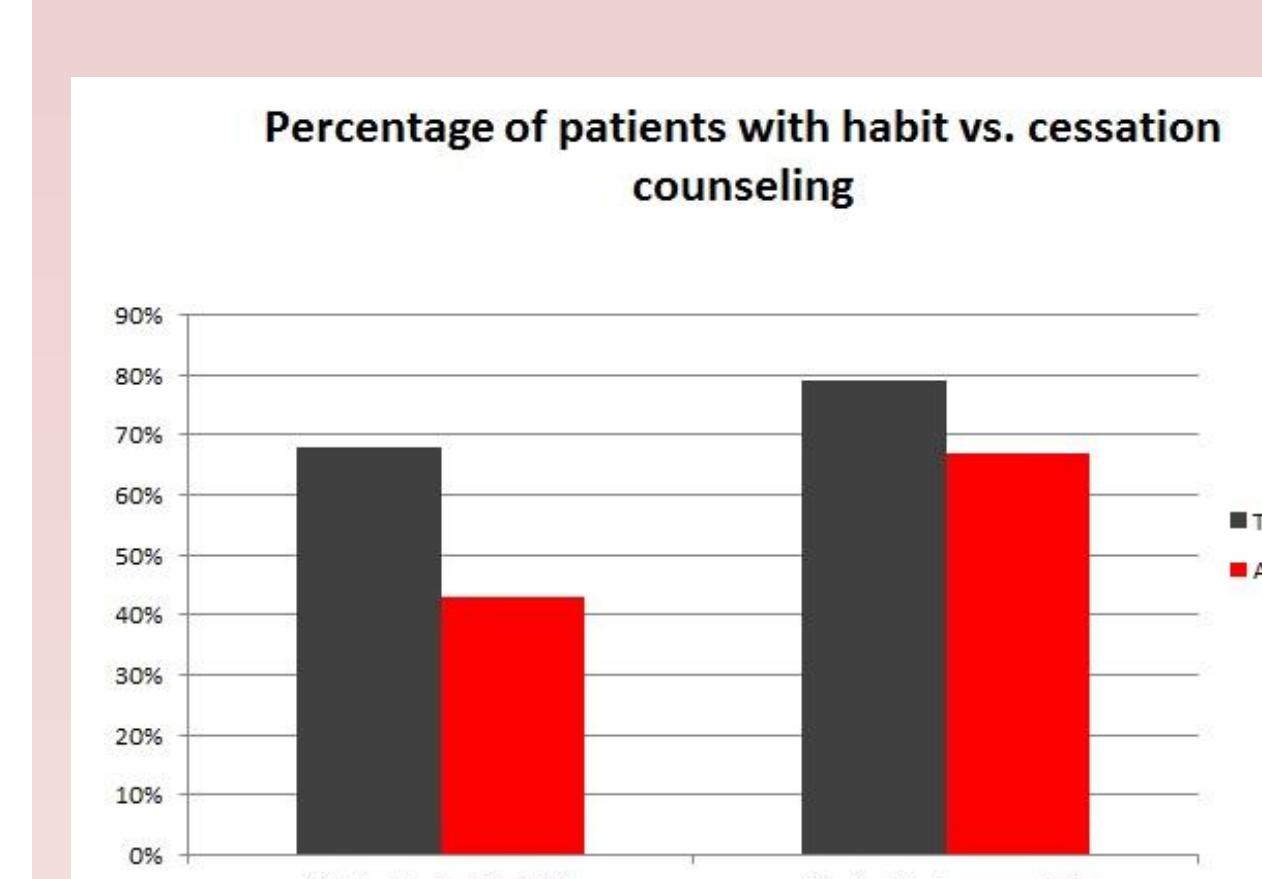


Figure 5: Incidence of cancers vs. USPSTF recommended screening tests for HIV-positive patients.

Figure 6: Bar graph depicting rates of cessation counseling vs. percentage of patients with habits (tobacco and alcohol use) contributing to NADC rates.

DISCUSSION

- Seventy-eight percent of our HIV-infected outpatient population with a malignancy were found to have NADCs (Fig. 1). The most common malignancies found were skin, prostate, lung, and anal cancers (Fig. 4).
- The majority of patients were Caucasian and male (Figs 3a&3b), with an average age of 57 years (Fig. 2).
- Only two patients were counseled on skin cancer prevention; a third had regular skin surveillance by dermatology. Basal cell carcinoma was the primary skin malignancy that was identified.
- The two patients with a history of anal condyloma did not receive screening anal pap smears prior to diagnosis.
- Excellent compliance was noted for regular colon and prostate cancer screening with colonoscopy (86%) and prostate specific antigen (96%), respectively (Fig. 5). No colonic malignancies were identified, and two patients were found to have prostate cancer with active screening.
- Both females in the study underwent regular cervical cancer screenings with PAP smears. One individual was found to have invasive cervical cancer and only one underwent annual mammogram (Fig. 5).
- Ninety-three percent of patients were screened for hepatitis B (HBV) and C viruses (HCV). No hepatocellular carcinomas were identified.
- Other cancer prevention methods, such as smoking and alcohol cessation, revealed 79% and 67% of patients were counseled to cut back or quit tobacco and alcohol, respectively (Fig. 6). Both patients found to have lung cancer had counseling for tobacco cessation.

CONCLUSIONS

- NADCs account for more morbidity and mortality than ADCs in the post-HAART era. The increase in NADCs may, in part, be explained by the higher incidence of smoking, alcohol consumption, and coinfections with oncogenic viruses (HCV & Hepatitis) among PLWHA.
- Limited guidelines have been established for cancer screening in HIV-infected patients (Table 2.). The decision to screen for cancer should include assessment of individual risk, life expectancy, and harm vs. benefits associated with screening interventions.
- Screening for skin and lung cancers may require adaptation for HIV-infected patients secondary to increase risk (behaviors and conditions common in HIV) among PLWHA
- Prevention is key and can be accomplished to some degree by targeting modifiable risk factors: aggressive smoking and alcohol cessation, vaccination against preventable oncogenic viruses such as HBV and HPV, treatment for known co-infections such as HIV/HCV & HIV/HBV, sunscreen use and limiting sun exposure.
- This project highlights the well described emerging clinical and public health need for prospective trials to address and define the need for aggressive screening and prevention in this high-risk population

FUTURE DIRECTIONS

- Should HIV-infected patients be screened more frequently?
- Should healthcare providers start screening for cancers that are not generally screened for in the general population (renal, pancreatic, oropharyngeal)? If so, can we still maintain the assumption that screening, identification, and treatment will improve survival?

REFERENCES

- Shiels, MS, Pfeiffer, RM, Gail MH, et al. "Cancer Burden in the HIV-Infected Population in the United States." *J Natl Cancer Inst* 2011; 103: 753-762
Deeken, JF, Tjen-A-Looi, A, Rudek, MA, et al. "The Rising Challenge of Non-AIDS-Defining Cancers in HIV-Infected Patients." *Clin Inf Dis* 2012; 55(9): 1228-1235
Cooley, TP. "Non-AIDS-Defining Cancer in HIV-Infected People." *Hematol Oncol Clin N Am* 2003; 17: 889-899
Mitsuyasu, RT. "Non-AIDS-Defining Cancers." *Top Antivir Med* 2014; 22(3): 660-665
Engels, EA, Biggar, RJ, Hall, HI, et al. "Cancer risk in people infected with human immunodeficiency virus in the United States." *Int J Cancer* 2008; 123: 187-194
Siegle, K, Dubrow, R, Silverberg, M, et al. "Cancer Screening in Patients Infected with HIV." *Curr HIV/AIDS Rep* 2011; 8: 142-152
Mani, D, Aboulafia, DM. "Screening guidelines for non-AIDS defining cancers in HIV-infected individuals." *Curr Opin Oncol* 2013; 25 (5): 518-525