Cancer Stage at Diagnosis in HIV-infected Individuals and Transplant Recipients

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INTRODUCTION

- HIV-infected people are at an increased risk of several cancers.
- It is unknown whether immune suppression results in more aggressive, advanced stage cancers.
- Tumor aggressiveness and/or delayed utilization of health care may lead to late stage of diagnosis among HIV-infected individuals.
- Transplant recipients are another immune suppressed population with increased cancer risk, but increased utilization of health care.

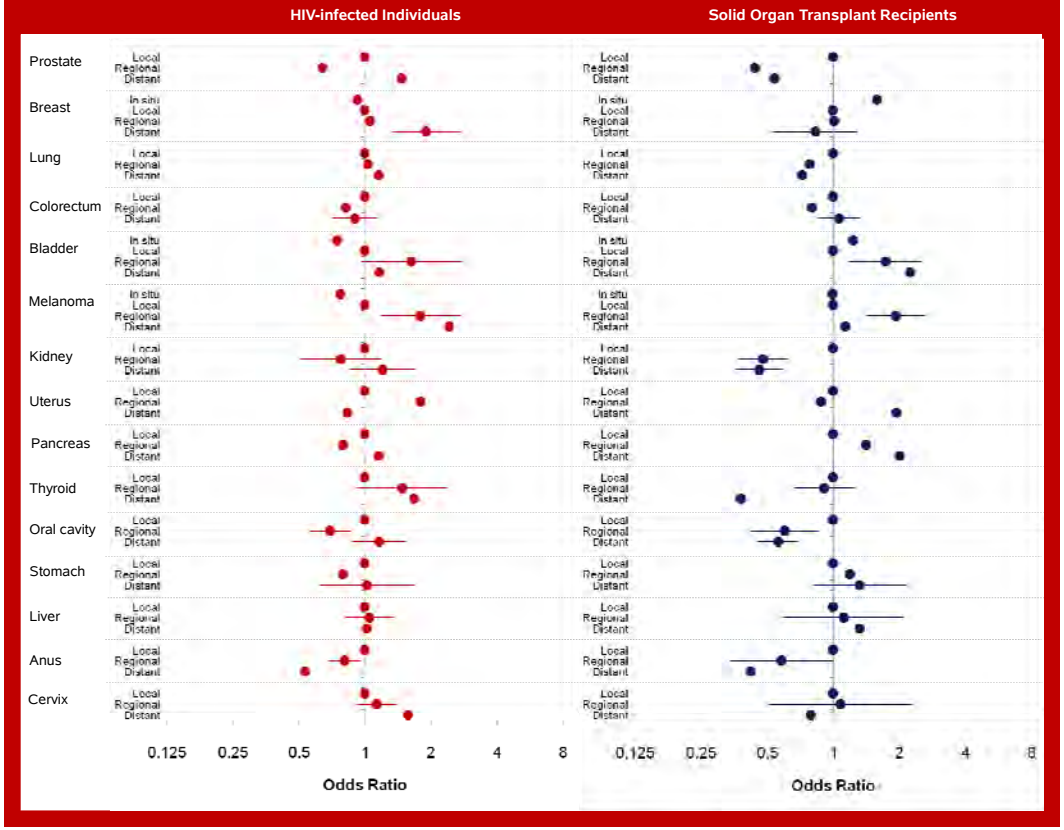
OBJECTIVES

- To compare cancer stage in HIV-infected individuals to solid organ transplant recipients, an immune suppressed population with more frequent utilization of care.
  - Increased stage in both populations: may implicate a role of immune suppression in cancer progression.
  - Increased stage in HIV+ only: may implicate decreased utilization of care.

METHODS

- Data on all cases of 15 cancer sites from two U.S. registry linkage studies: the HIV/AIDS Cancer Match (HACM) and the Transplant Cancer Match (TCM), 1996-2010.
- HACM and TCM Studies link cancer registries to HIV and transplant registries, respectively.

Figure 1. Odds ratios for regional and distant stage cancer among cancer cases occurring in HIV-infected people and solid organ transplant recipients compared to the general population.



- Odds ratios (ORs) by stage of disease estimated comparing HIV and transplant populations to the general population in separate logistic regression models, adjusted for age, sex, race, registry and calendar year.

RESULTS

- HACM Study: 9,362 of 4.7 million cases in HIV-infected individuals.
- TCM Study: 8,225 of 9.7 million cases in transplant recipients.

RESULTS

- Compared to the general population, HIV-infected individuals had more distant stage breast (OR=1.90), lung (OR=1.16), prostate (OR=1.47) and cervical cancers (OR=1.58), and melanoma (OR=2.42), and fewer cases of distant stage anal cancer (OR=0.53) (Figure 1).
- In contrast, compared to the general population, transplant recipients had fewer distant stage prostate (OR=0.54) and lung (OR=0.72) cancers and no difference in the frequency of distant stage cervical cancers (OR=0.79), melanoma (OR=1.14), and anal cancers (OR=0.42).

CONCLUSIONS

- Prostate, lung, breast, and cervical cancers and melanomas diagnosed in HIV-infected individuals were more likely to be distant stage than in the general population.
- Among transplant recipients, none of these cancer sites was more likely to be distant stage relative to the general population.
- The increased stage observed in people with HIV is likely driven by delayed diagnosis due to under-utilization of care, particularly for screen-detectable cancers, and is unlikely to be due to immune suppression increasing cancer progression.