Vulvar Cancer Outcomes in Women Living with HIV in the Age of Anti-Retroviral Therapy

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INTRODUCTION

Vulvar cancer is relatively uncommon, making up about 0.3% of all new cancer cases in the United States.

Women living with HIV (WLWH) experience a disproportionately higher rate of female genital tract cancers, including vulvar and cervical cancer, largely because they are more likely to have a persistent coinfection with HPV.

Once diagnosed with forms of cancer, WLWH are known to have significantly worse survival and treatment adherence rates than women without HIV.

The purpose of this study was to examine local recurrence-free and overall survival of HIV+ women who were diagnosed with pre-invasive and invasive vulvar cancer in the age of anti-retroviral therapy.

METHODS

WLWH treated for vulvar cancer at Moffitt Cancer Center between 1997 and 2017 were queried for analysis and matched with HIV- patients when available.

Patients were included if they had known HIV status, no other HPV-related cancer diagnoses, and were treated for pre-invasive or invasive vulvar cancer.

Demographics and treatment variables were compared using Chi-square test, Fisher's Exact test, or Mann Whitney-U test.

Kaplan-Meier survival analysis was performed to compare local recurrence-free survival in women with pre-invasive vulvar cancer (VIN) and overall survival in women with invasive vulvar cancer.

All data transmitted from outside institutions included only limited patient identifiers and were in agreement with all institutions. The research protocol was IRB approved.

SPSS Version 25.0 was used.

RESULTS

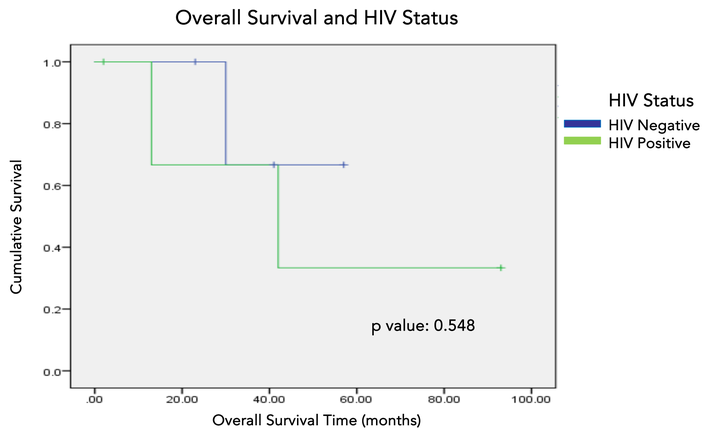
Table 1: General demographics of the 29 patients included, sorted by HIV status and invasive/pre-invasive vulvar cancer.*

	Invasive Cancer		VIN	
	HIV-	HIV+	HIV-	HIV+
n=	4	4	8	13
Age	52.5 [38-56]	55.5 [40-57]	46 [33-49]	46 [32-54]
Race/Ethnicity				
Black	0	1	0	5
White	4	3	8	8
Comorbidities				
Hepatitis C	0	3	0	1
Hepatitis B	0	0	0	2
Hypertension	1	1	2	5
Diabetes	0	0	1	3
Obesity	2	2	0	4
Smoking Status				
active	3	2	4	6
never	1	1	1	5
prior	0	1	3	2
Stage				
I	3	3	--	--
II	1	1	--	--
Treatment				
ChemoRT	1	1	0	0
ChemoRt->S	1	0	0	0
Surgery	1	1	8	13
Surgery->RT	1	2	0	0
Reactive/Positive Nodes at Diagnosis?				
yes	1	1	0	0

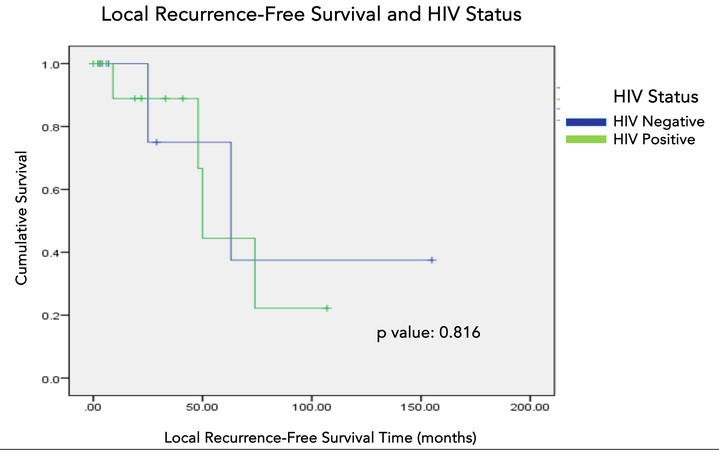
*Fisher's Exact test, Chi-Square test, and Mann Whitney-U tests were performed to calculate p-values. There was no significant difference between patient groups for all variables except race (p=0.044).

Figure 1: Kaplan-Meier comparing overall survival in women treated for invasive vulvar cancer and local recurrence-free survival treated for women treated for pre-invasive vulvar cancer

Women with Invasive Vulvar Cancer



Women with Pre-Invasive Vulvar Cancer (VIN)



DISCUSSION

WLWH treated for pre-invasive vulvar cancer were more likely to be Black (p=0.044).

For patients with invasive vulvar cancer, there was no significant difference in overall survival between WLWH and HIV- women (p=0.548).

For patients with pre-invasive vulvar cancer (VIN), there was no significant difference in local recurrence-free survival between WLWH and HIV- women (p=0.816).

Our small sample size limited our ability to definitively determine the difference between groups, but local recurrence appears to be common in vulvar cancer and VIN regardless of HIV status.

FUTURE DIRECTIONS

This was a small initial study, so the next steps would entail collecting more patient data from other institutions.

In a larger study, we plan to assess markers of immunosuppression to evaluate if there is an effect on treatment outcomes.

We aim to investigate treatment outcome and toxicity differences among WLWH who were adherent to their anti-retroviral therapy compared to those who were not.

We also plan to include patients with other HPV-related cancers to evaluate relationship between such cancers and determine potential risk factors.

REFERENCES

- Brown, J. E. M., MPHSunborg, Michael J. MDKost, Edward MDCosin, Jonathan A. MDWinter, William E. III MD "Vulvar Cancer in Human Immunodeficiency Virus-Seropositive Premenopausal Women: A Case Series and Review of the Literature."
- Eva Clark, 2, et al. (2021). "Veteran Women Living With Human Immunodeficiency Virus Have Increased Risk of Human Papillomavirus (HPV)-Associated Genital Tract Cancers."
- Hacker, N. F., et al. (2015). "Cancer of the vulva." International Journal of Gynecology & Obstetrics **131**: S76-S83.
- Jamieson, D. J. M., MPHParamsothy, Pangaja MPHCu-Uvin, Susan MDDuerr, Ann MD, PhD (2006). "Vulvar, Vaginal, and Perianal Intraepithelial Neoplasia in Women With or at Risk for Human Immunodeficiency Virus."
- Levinson, K. L., et al. (2018). "Gynecologic cancer in HIV-infected women." AIDS **32**(2): 171-177.
- Persad, G. C., et al. (2008). "Including Persons With HIV Infection in Cancer Clinical Trials." Journal of Clinical Oncology **26**(7): 1027-1032.
- Suneja, G., et al. (2014). "Cancer Treatment Disparities in HIV-Infected Individuals in the United States." Journal of Clinical Oncology **32**(22): 2344-2350.
- MacDuffie, Emily et al. "Vulvar cancer in Botswana in women with and without HIV infection: patterns of treatment and survival outcomes." *International journal of gynecological cancer :official journal of the International Gynecological Cancer Society* vol. 31,10 (2021): 1328-1334.