Demographic and Clinical Insight into the Comorbidities and Mortality of Patients with Vulvar Cancer or Dysplasia in Louisiana

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Introduction

- Vulvar cancer is a rare malignancy, accounting for less than 5% of gynecologic cancers.
- Vulvar dysplasia is a non-malignant series of changes in the vulva that has the potential to progress to vulvar cancer.
- Risk factors for advanced vulvar cancer or dysplasia include older age, human papillomavirus (HPV), tobacco use, and immunodeficiency.[1]
- These patients tend to present with comorbidities including cardiovascular disease, pulmonary disease, and diabetes, which complicates treatment and contributes to less favorable outcomes.[2]
- It has been suggested that patients with HPV-related vulvar cancer or dysplasia are likely to have died from a comorbidity rather than from vulvar disease.[3]
- It seems that patients with vulvar disease unrelated to HPV often present with and pass from more aggressive forms of their disease.[3]
- The objective of this study was to describe the causes of death in patients diagnosed with vulvar cancer or dysplasia in Louisiana.

Methods

- Retrospective analysis of 53 patients diagnosed with vulvar cancer or dysplasia between 2013 and 2022 was performed.
- Patients were primarily seen by gynecologic oncologists at a mix of academic and community hospitals in Louisiana.
- Patient data was abstracted for demographic and clinical variables including tobacco history, HPV status, comorbidities, and disease status.
- Categorical distributions across groups were analyzed using Fisher exact tests and two-sample t-tests, and continuous covariates were summarized using a Wilcoxon rank-sum test.

Demographics

	Dysplasia (n=18)	Early-Stage Cancer (n=18)	Late-Stage Cancer (n=9)
African American	7 (35%)	7 (38.9%)	4 (44.4%)
Non-African American*	13 (65%)	11 (61.1%)	5 (55.6%)
Age at Diagnosis ≤ 55	14 (77.8%)	9 (50%)	5 (55.6%)
Age at Diagnosis > 55	4 (22.2%)	9 (50%)	4 (44.4%)
Average Age at Diagnosis (years)	51.2	56.2	62.4
Tobacco History	9 (45%)	11 (61.1%)	5 (55.6%)
No Tobacco History	11 (55%)	7 (38.9%)	4 (44.4%)
HPV Positive	5 (27.8%)	5 (27.8%)	3 (33.3%)
HPV Negative/No HPV Testing	13 (72.2%)	13 (72.2%)	6 (66.7%)
Cardiovascular Disease	0 (0%)	2 (11.1%)	3 (33.3%)
Insulin-Dependent or Poor Diabetes Control	1 (5.5%)	3 (16.7%)	2 (22.2%)
Liver Dysfunction	0 (0%)	2 (11.1%)	3 (33.3%)
Pulmonary Disease	1 (5.6%)	6 (33.3%)	2 (22.2%)
Renal/Chronic Kidney Disease	0 (0%)	2 (11.1%)	2 (22.2%)
History of CVA or MI	1 (5.6%)	1 (5.6%)	2 (22.2%)
HIV/AIDS	3 (16.7%)	3 (16.7%)	2 (22.2%)
Immunodeficiency or Long-Term Steroid Use	2 (11.1%)	1 (5.6%)	0 (0%)
Other Comorbidity	3 (16.7%)	7 (38.9%)	4 (44.4%)
BMI>30	9 (50%)	3 (16.7%)	6 (66.7%)
Average Charlson Comorbidity Index (CCI) Score	2.44	4.06	7.78
Average Overall Survival (months)	15.2	21.9	14.6

Table 1: Patient Demographic Overview, by Disease Stage

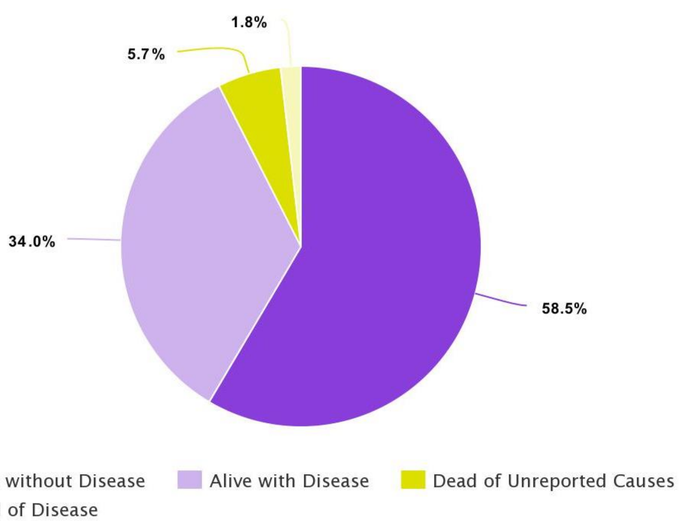
***Non-African American patients included patients of the following races, in order of decreasing incidence: White/Caucasian, Asian, Other**

Note: There were 8 patients whose vulvar cancer were not yet staged; thus, they are excluded from this table.

Patient Outcomes

- Of the 35 patients with vulvar cancer and 18 patients with vulvar dysplasia, 31 patients (58.5%) were alive without disease, 18 (34.0%) alive with disease, 3 (5.7%) dead of unreported causes, and 1 (1.8%) dead of vulvar cancer. (Figure 1)

Figure 1: Patient Outcomes



Results

- As of July 2022, 31 patients (58.5%) were alive without disease, 18 (34.0%) alive with disease, 3 (5.7%) dead of unreported causes, and 1 (1.8%) dead of vulvar cancer.
- The average age of patients with advanced vulvar cancer (62.4 years) was greater than those with early-stage vulvar cancer (56.2 years) or dysplasia (51.2 years), though this was not significant (p=.26).
- While insignificant, there seemed to be a higher rate of HPV in patients with vulvar cancer (p=1.0). While patients with early-stage vulvar cancer tended to show higher rates of HPV than patients with late-stage vulvar cancer, this was also not significant (p=.70).
- The average Charlson Comorbidity Index (CCI) score of vulvar cancer patients was significantly greater than patients with vulvar dysplasia (4.89 vs. 2.44, p<.05).
- Average CCI score was significantly greater for patients with late-stage vulvar cancer than for patients with early-stage vulvar cancer (7.78 vs 4.06, p=.01). Of the studied comorbidities, pulmonary disease such as COPD or asthma was most strongly associated with vulvar cancer (p=.04).
- While insignificant, patients with early-stage vulvar cancer tended to have the highest average overall survival (21.9 months), followed by patients with vulvar dysplasia (15.2 months) and those with late-stage vulvar cancer (14.6 months).
- Patients with HPV-related vulvar cancer also tended to have a higher overall survival (23.9 months) compared to patients with vulvar disease unrelated to HPV (12.8 months), though this was also not significant (p=.07).

Conclusions

Our study was limited by size, but in our vulvar cancer and dysplasia population, a majority died from conditions other than vulvar cancer. Those with advanced vulvar disease were significantly older, comorbid, and more likely to have pulmonary disease.

We were pleased to see so few deaths within our patient group. This illustrates the impact of prevention, healthcare access, and optimization opportunities during vulvar cancer treatment and surveillance with gynecologic oncology. The limitation in available data presents us with an opportunity for additional work in the future to identify cause of death in patients with vulvar disease by expanding our sample size to increase the study's power.

References

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