Predictors of Mortality Among Patients With Virus-Associated Cancers in a High HIV-Prevalence Region

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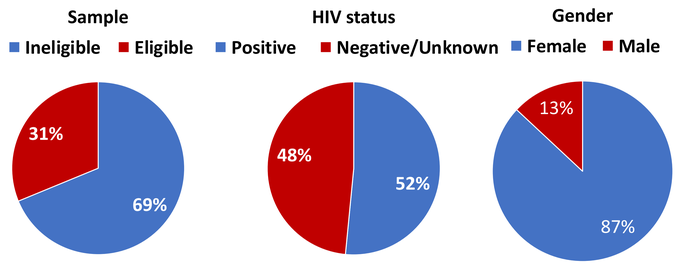
BACKGROUND

- Virus-associated cancers cause significant mortality in Africa. Understanding risk factors for mortality is crucial for effective prevention and treatment.
- Survival and engagement in cancer care are critical measures of the effectiveness of cancer treatment, yet little is known about patient outcomes in western Kenya.
- There has been a rapid increase in cancer cases in western Kenya- a high HIV prevalence region in Kenya
- We analyzed demographic and clinical characteristics of people with virus-associated cancers in Kisumu County, western Kenya estimating survival and evaluating factors associated with mortality.

METHODS

- **Design:** Retrospective cohort study of oncology patients at Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) between January 2014 and December 2023.
- **Sample:** Cases where viral infection is 1) ***causally associated*** with cancer (cervical, anal, Kaposi sarcoma) or 2) is the ***strongest risk factor*** for cancer (penile, vaginal, vulvar).
- **Data collection:** Extraction from paper-based patient records.
- **Analysis:** Kaplan-Meier analysis and competing risk regression to assess survival and mortality risk factors, with loss to follow-up (LTFU, defined as >6 months late for last appointment) and transfers as competing events.

Characteristics of the sample



Low five-year survival at 6%.

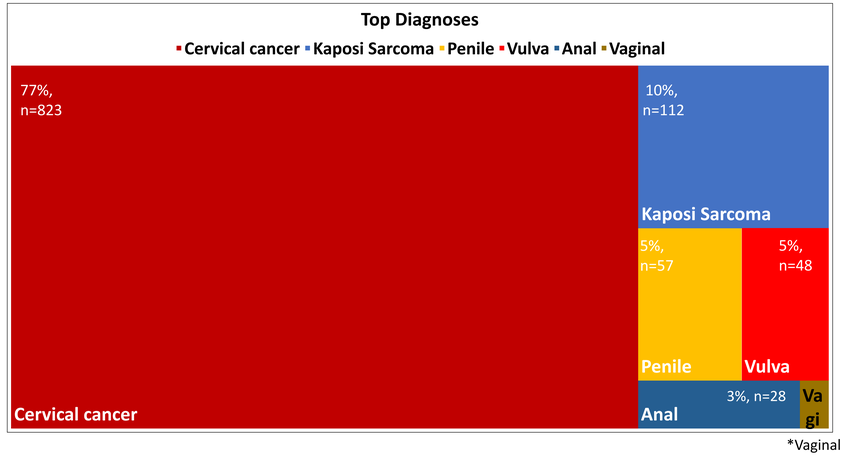
High (62%) loss to follow up is within one year of starting care.

Older age and early-stage diagnosis associated with lower mortality.

RESULTS

- Among 3,437 patients, 1,073 (31%) were eligible, with 933 (87%) female, and 553 (51.5%) PLHIV.
- Median age at diagnosis: 47 years (inter-quartile range 39-59).
- One year after enrolling in cancer care, 538 (62%) were LTFU.
- Median overall survival was 6% (95% CI: 5%-7%).
- In multivariable analyses, age <20 years and advanced stage at diagnosis (stage III and IV) were associated with increased risk of death.
- HIV status was not significantly associated with mortality (sub-hazard ratio 1.29, 95% CI: 0.83-2.01; p=0.3).

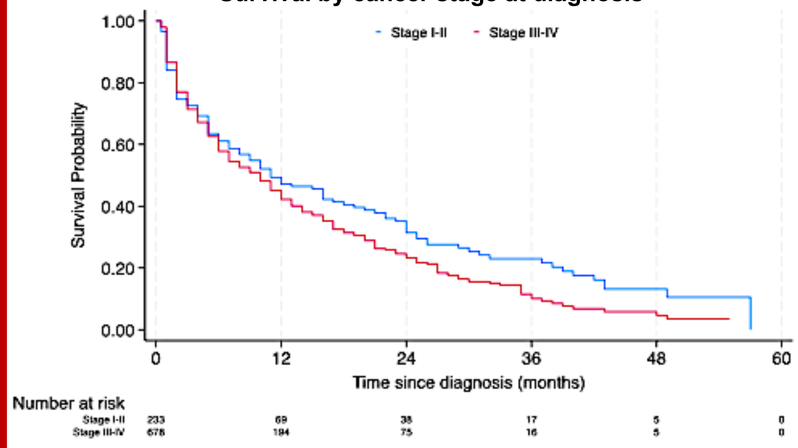
Distribution of the top virus-associated cancers in the sample



*Vaginal 0.5%, n=5

RESULTS CONTINUED..

Survival by cancer stage at diagnosis



CONCLUSIONS

- Virus-associated cancers are highly prevalent in western Kenya, with high LTFU and low survival.
- Older age >20 years and early-stage diagnosis (but not HIV status) were associated with lower mortality.
- Urgent strategies are needed to encourage early cancer detection and referral to treatment and improve retention in care.
- Future research should consider testing for viral infections to attribute carcinogenicity for cancer types excluded in this analysis, such as Epstein-Barr virus (nasopharyngeal carcinoma; gastric cancer; Burkitt, Hodgkin, and diffuse large B-cell lymphoma), human papillomavirus (other head and neck cancers), and hepatitis B and C viruses (hepatocellular and intrahepatic bile duct cancers).

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