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## Stage and outcomes of cervical cancer with or without HIV infection in Botswana 2013–2020

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## Abstract Text:

**Purpose/Objective(s):** To present the stage and outcomes of patients with invasive cervical cancer with all stages in Botswana with or without HIV, and to prospectively evaluate factors associated with survival in this population.

**Materials/Methods:** Between April 2013 and November 2020, women with locally advanced cervical cancer (Stages IA–IVB) living with or without HIV infection were prospectively enrolled in an observational cohort study. Overall survival (OS) was evaluated using the Kaplan–Meier method. Associations with survival were analyzed using Cox proportional hazards modeling.

**Results:** Among the 1,034 patients, 69% were women living with HIV (WLWH), 8% (n=59) had surgery, 84% (n=603) received radiation (RT), and 55% (n=391) received chemoradiation (CRT). Median CD4 count at the time of cancer diagnosis in the cohort was 431.5 (245.3–613.8) and 13% had detectable viral load. 94% of patients were on anti-retroviral treatment at the time of cancer diagnosis. Median age of the WLWH was 44 years compared to 61 years in patients living without HIV infection ( $p<0.001$ ). Stage distribution in the cohort was as follows: Stage I was 16% (n=170), Stage II was 37% (n=384), Stage III was 35% (n=364), and Stage IV was 8% (n=86). Median follow up time was 1.95 years. OS at 2 years for Stage I was 95%, Stage II was 89%, Stage III was 54%, and Stage IV was 39%. Combined OS at 2 years was 67%. OS at 5 years for Stage I was 88%, Stage II was 63%, Stage III was 40%, and Stage IV was 32%. Combined OS at 5 years was 56%. WLWH did not show significant differences in OS as compared to those without HIV infection: OS at 2 years was 67% vs. 71% in women WLWH vs. without HIV infection and OS at 5 years was 49% in vs. 60% in women WLWH vs. without HIV infection ( $p=0.105$ ). In multivariable cox regression analysis including all patients, OS was associated with baseline hemoglobin (Hb) (HR 0.88,  $p<0.001$ ), baseline performance status (HR 1.42,  $p=0.004$ ), and disease stage: Stage II (HR 2.71,  $p=0.001$ ), Stage III (HR 4.96,  $p<0.001$ ), and Stage IV (HR 6.91,  $p<0.001$ ).

**Conclusion:** Among women in Botswana with cervical cancer, HIV status had no effect on OS. Survival was largely associated with patients' disease stage, Hb, and performance status at the time of treatment. Patients with early stage cervical cancer had adequate outcomes regardless of their HIV status. Therefore, for all women it is imperative to optimize their primary care to improve early detection of disease.

## Track:

Gynecological Cancer

## Subcategory:

Cervix

## Secondary Track:

Health Services Research/Global Oncology

## Secondary Subcategory:

Global Oncology

**Title:**

Stage and outcomes of cervical cancer with or without HIV infection in Botswana 2013–2020

**Hypothesis:**

The hypothesis is that among women in a low resource setting, HIV status has no effect on overall survival for early stage cervical cancer. Rather, we predict survival is largely based on patient and tumor characteristics.

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**Preferred Presentation Format:**

Oral or Digital Poster

**Other Meetings – Submitted to Present:**

No

**Other Journal – Submitted for Publication:**

No

**Other Journal – Accepted for Publication:**

No

**Approval For Human Research and Experimentation:**

Affirm

**Approval For Animal Experimentation:**

This research did not involve animal research or experimentation

**Consent to Record:**

Yes

**Off-Label/Investigational Uses:**

No

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