

STAGE AND OUTCOMES OF CERVICAL CANCER WITH OR WITHOUT HIV INFECTION IN BOTSWANA 2013-2020

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PURPOSE/OBJECTIVE(S):

- To present the stage distribution and outcomes of patients from Botswana with invasive cervical cancer, living with or without HIV, and to prospectively evaluate factors associated with survival among this population.

MATERIALS/METHODS:

- Between April 2013-November 2020, women with cervical cancer (FIGO 2009 stages IA-IVB) living with or without HIV 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 regression modeling.

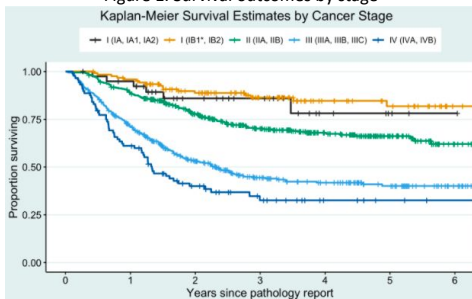
RESULTS:

- A total of 1,043 patients were enrolled; 69% were women living with HIV (WLWH).
- Median age of the WLWH was 66 years compared to 44 years in patients living without HIV infection ($p < 0.001$).
- Median follow up was 2.2 years (3.4 years for living patients).

Table 1. Baseline demographic characteristics of patients

Characteristics	Overall n=1043 (100%)
Age (y)	47.0 (40.0-58.0)
21-39	227 (21.8%)
40-59	575 (55.1%)
>60	240 (23.0%)
HIV status	
Seronegative	311 (29.8%)
Seropositive	714 (68.5%)
Disease stage	
I (IA, IA1, IA2)	45 (4.3%)
II (IB1, IB2, IB3)	128 (12.3%)
III (IIIA, IIIB)	388 (37.2%)
IV (IVA, IVB)	368 (35.3%)
CD4	429.5 (240.0-619.5)
Detectable Viral Load	91 (12.7%)
Treatment characteristics	
Surgery	58 (5.6%)
RT	341 (32.7%)
CRT	531 (50.9%)
No Treatment	76 (7.3%)

Figure 1. Survival outcomes by stage



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Table 2. Factors associated with OS for all patients: MVA

Characteristic	HR (95% CI)	p
Age		
21-39	--	--
40-59	0.88 (0.68-1.14)	0.328
>60	1.03 (0.72-1.48)	0.858
HIV status		
Seronegative	--	--
Seropositive	1.27 (0.96-1.68)	0.096
Baseline Creatinine (μmol/L *10 ⁻²)	1.08 (1.04-1.12)	<0.001
Baseline Hemoglobin (g/dL)	0.91 (0.87-0.96)	<0.001
Baseline performance status (KPS)		
≥90	--	--
<90	1.89 (1.54-2.34)	0.001
Disease stage		
I (IA, IA1, IA2, IB1, IB2, IB3)	--	--
II (IIA, IIB)	1.89 (1.18-3.04)	0.008
III (IIIA, IIIB, IIIC)	4.08 (2.57-6.49)	<0.001
IV (IVA, IVB)	5.19 (3.04-8.86)	<0.001

Table 3. Factors associated with OS for treated patients: MVA

Characteristic	HR (95% CI)	p
Age		
21-39	--	--
40-59	0.89 (0.67-1.18)	0.413
>60	0.99 (0.67-1.45)	0.939
HIV status		
Seronegative	--	--
Seropositive	1.26 (0.93-1.71)	0.133
Baseline Creatinine (μmol/L *10 ⁻²)	1.08 (1.03-1.12)	0.001
Baseline performance status (KPS)		
≥90	--	--
<90	1.49 (1.15-1.91)	0.002
Disease stage		
I (IA, IA1, IA2, IB1, IB2, IB3)	--	--
II (IIA, IIB)	2.10 (1.26-3.48)	0.004
III (IIIA, IIIB, IIIC)	4.18 (2.53-6.91)	<0.001
IV (IVA, IVB)	6.14 (3.44-10.96)	<0.001

RESULTS (CONT):

- For all patients, 2-year OS was 67%. OS at 2 years was 90% for Stage I, 79% for Stage II, 58% for Stage III, and 43% for Stage IV.
- OS at 2 years for all receiving any treatment for cervical cancer was 71%.

CONCLUSIONS:

- Most patients presented with stage II or III disease warranting RT or CRT.
- Survival was largely associated with patients' disease stage, Cr, Hb, and KPS at the time of treatment.
- HIV is not associated with OS in this cohort that is well managed in terms of HIV infection.
- Patients with early-stage cervical cancer had adequate outcomes regardless of HIV status although much lower than outcomes in high income countries.
- For all women, it is imperative to optimize their primary care to improve early detection of disease and further efforts are needed to improve outcomes of women with cervical cancer in Botswana.

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