TREATMENT TOXICITIES OF CERVICAL CANCER WITH OR WITHOUT HIV INFECTION IN BOTSWANA 2013-2020

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PURPOSE OR OBJECTIVE:

- To examine factors associated with treatment toxicities for cervical cancer patients, with/without HIV infection, who initiated radiation therapy (RT) or chemoradiation therapy (CRT) in Botswana.

MATERIALS AND METHODS:

- Between April 2013-November 2020, women with locally advanced cervical cancer, with/without HIV, initiating RT/CRT in Botswana were prospectively enrolled.
- We evaluated treatment received and the following grade 2 or higher (grade ≥ 2) toxicities during treatment: renal, anemia, neutrophil count, white blood cell count (WBC), albumin, GI, GU, vaginal/pelvic, and dermatitis.
- Association of antiretroviral therapies (ART) with toxicities was analyzed using logistic regression modeling.

RESULTS:

- Of 1,043 women treated for cervical cancer, we included the 924 women treated with RT/CRT.
- 69% were HIV-infected with

Table 1. Demographic and clinical characteristics of cervical cancer patients treated with RT/CRT

Characteristics	Overall n=924 (100%)
Age (y)	47.0 (22.0-95.0)
21-39	214 (23.2%)
40-59	501 (54.2%)
>60	208 (22.5%)
Disease stage	
I (IB2, IB3)	100 (10.8%)
II (IIA, IIB)	379 (41.0%)
III (IIA, III, IIIC)	359 (38.9%)
IV (IVA, IVB)	86 (9.3%)
HIV status	
Seronegative	277 (30.0%)
Seropositive	633 (68.5%)
CD4	420.0 (5.0-2213.7)
Detectable Viral Load	83 (13.1%)
Chemo cycles	
0	298 (32.3%)
1-4	169 (18.3%)
≥4	351 (38%)
EQD2	78.7 (0-97.9)

Table 2. Treatment toxicities by HIV status

Toxicity	HIV Seropositive	HIV Seronegative	p
Renal: Grade <2	357 (70.1%)	150 (29.4%)	0.206
Renal: Grade ≥2	43 (78.2%)	11 (20.0%)	
Anemia: Grade <2	229 (66.2%)	115 (33.2%)	**0.002**
Anemia: Grade ≥2	175 (78.8%)	46 (20.7%)	
Neutrophil count: Grade <2	294 (69.3%)	128 (25.9%)	0.103
Neutrophil count: Grade ≥2	109 (76.8%)	32 (22.5%)	
WBC: Grade <2	181 (66.3%)	90 (33.0%)	**0.022**
WBC: Grade ≥2	223 (75.6%)	71 (24.1%)	
Albumin: Grade <2	336 (69.9%)	136 (28.3%)	0.766
Albumin: Grade ≥2	61 (72.6%)	22 (26.2%)	
Gastrointestinal: Grade <2	408 (69.4%)	175 (29.8%)	0.815
Gastrointestinal: Grade ≥2	15 (75.0%)	5 (25.0%)	
Genitourinary: Grade <2	382 (68.8%)	168 (28.6%)	>0.999
Genitourinary: Grade ≥2	1 (50.0%)	1 (50.0%)	
Vaginal/pelvic: Grade <2	357 (67.6%)	165 (31.3%)	0.221
Vaginal/pelvic: Grade ≥2	36 (76.6%)	10 (21.3%)	
Dermatitis radiation <2	215 (69.1%)	95 (30.5%)	>0.999
Dermatitis radiation ≥2	175 (68.4%)	77 (30.1%)	

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RESULTS (CONT):

median CD4 count cells/mm³ of 420, 9% had detectable viral load, and 95% were on ART.

- There was no difference in treatment received in the HIV-infected vs. uninfected groups in terms of RT dose and chemotherapy cycles.
- 94% patients initiated curative RT/CRT. Grade ≥ 2 toxicities were as follows: 10% (n=55/564) renal; 39% (n=222/568) anemia; 25% (n=142/566) with neutrophil count; 52% (n=295/568) WBC; 15% (n=84/565) albumin; 3% (n=20/608) GI; 0.4% (n=2/557) GU; 8% (n=47/575) vaginal/pelvic; 45% (n=256/567) dermatitis.

CONCLUSIONS:

- Women in this cohort with locally advanced cervical cancer and predominantly well-managed HIV, HIV-infected/uninfected received and tolerated treatments similarly except for differences in bone marrow toxicities.
- Patients receiving CRT were more likely to have renal and bone marrow toxicities compared to patients receiving RT alone.