Experience with concurrent chemoradiotherapy treatment in advanced cervical cancer: Results from a hospital in Argentina

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Objective

To describe our experience with concurrent chemoradiotherapy using **three-dimensional conformal radiotherapy (3D-CRT)** and **high-dose-rate intracavitary brachytherapy with weekly cisplatin** in the treatment of patients with locally advanced cervical cancer.

Methods

Forty-three patients were identified between January 2009 and December 2015. Their medical records were retrospectively reviewed, and data on patient characteristics, tumour, treatment and toxicities were collected and analysed.

Results

The **median age** was **45 years** (interquartile range (IQR): 26).
The **median tumour size** was **45 mm** (IQR: 20).
38 patients (88%) had a cervical tumour with a size of ≥ 40 mm.
The median cervical tumour size evaluated by magnetic resonance imaging (MRI) was **52 mm** (IQR: 17).
22 patients (51%) had enlarged lymph nodes on MRI (≥ 10 mm).
MRI demonstrated the **involvement of the parametrium** in 29 patients (67%).
15 patients had positive para-aortic nodes (36%).
The **median total treatment time** was 58 days (IQR: 20).
16 patients (39%) received extended-field radiotherapy.
Cisplatin was administered simultaneously for a median of 5 courses.
The **median follow-up period** was 32 months (IQR: 28 months).
Grade 3 acute toxicity was observed at the gastrointestinal level in 7 patients (16%).
Late grade 3/4 toxicity was observed in 14 patients (33%). 7 patients (16%) persisted with the disease and five died. The **local relapse rate** was 9%.
11 patients underwent a hysterectomy after treatment.
The **disease-free interval** was 24.2 months.
The **2-year global survival rate** was 82.9%.

Conclusion

Concurrent chemo-radiotherapy appears to be an effective regimen, with acceptable toxicity, for patients with locally advanced cervical cancer.
In spite of being a study with a low number of cases and with a follow-up of only two years, we highlight that the patients belong to a single institution and have had an exhaustive follow-up with special attention to their therapeutic complications.
We report favourable results regarding radiochemotherapy concurrent with high rate brachytherapy in cervical cancer in locally advanced stages. This concurrent treatment showed good local control, was well tolerated, and had an acceptable percentage of complications.

Baseline characteristics of cervical cancer patients (n = 43)

Details		Measurement
Patients (n)		43
Age (years), median (IQR) ^Δ		45 (26)
Performance status (n/%)	0	32/74.4
	1	10/23.3
	2	1/2.3
Body Mass Index in kg/m ² , median (IQR) ^Δ		23.8 (7.5)
Patient with history of prior surgeries (n/%)	No	30/69.8
	Yes	13/30.2
Haemoglobin pretreatment in g/dL, median (IQR) ^Δ		12 (2.1)
Creatinine clearance in mL/min, median (IQR) ^Δ		97 (47.7)

Tumour characteristics of cervical cancer patients (n = 43)

Details		Measurement
Histological type (n/%)	Squamous	37/86
	Adenocarcinoma	4/9.3
	Other	2/4.7
Tumour size in cm, median (IQR) ^Δ		45 (20)
Tumour stage (FIGO) (n/%)	IB2	12/27.9
	IIA2	6/14.0
	IIB	15/34.9
	IIIB	10/23.3
Tumour size in images (MRI) in cm, median (IQR) ^Δ		52 (17)
Lymph node involvement in images (MRI) (n/%)	Negative	21/48.8
	Positive	22/51.2
Parametrial infiltration in images (MRI) (n/%)	Negative	14/32.6
	Positive	29/67.4
Pretreatment lumbar aortic staging (surgery) (n/%)	No	20/46.5
	Yes	23/53.5
Lumbar aortic lymph node involvement (PET/surgery) (n/%)		15/36

Characteristics of concurrent radiochemotherapy in cervical cancer patients (n = 43)

Details			Measurement
Radiation treatment (n/%)	External RT and BT		26/60.5
	External RT + BT + lumbar aortic field (group 2)		17/39.5
Radiotherapy dose (cGy) (n/%)	External	46	1/2.3
		48.6	2/4.7
		50	20/46.5
		50.4	17/39.5
		55.8	3/7.0
	External radiotherapy dose fraction (cGy) (n/%)	1.8	22/51.2
2		21/48.8	
Radiotherapy energy (n/%)	External	F6Mv	23/53.5
		F10Mv	10/23.3
		F15Mv	10/23.3
	Lumbar aortic field	F6Mv	8/47.1
		F10Mv	5/29.4
		F15Mv	4/23.5
Brachytherapy source (n/%)	Ir192		33/76.7
	Co60		10/23.3
Total treatment time (days)	External RT, median (IQR) ^Δ		40 (7)
	External RT + BT, median (IQR) ^Δ		58 (20)
	External RT + BT + lumbar aortic field, median (IQR) ^Δ		84 (19)
Patient with total treatment time (<63 days) (n/%)			29/67.4
Patients receiving ≥4 cycles of chemotherapy (n/%)			39/90.6

Acute and chronic toxicities profile in cervical cancer patients (n = 43)

Acute adverse effect	Grades (n)				
	0	1	2	3	4
Lower gastrointestinal	1	5	30	7	-
Urinary	1	17	25	-	-
Asthenia	1	21	20	1	-
Dermatological	18	23	2	-	-
Vomiting	39	3	1	-	-
Anaemia (haemoglobin)	13	19	11	-	-
Leukopenia	14	19	6	4	-
Neutropenia	33	4	6	-	-
Thrombocytopenia	39	4	-	-	-
Infectious	39	-	3	-	1
Motor neuropathy	42	-	-	1	-
Sensory neuropathy	39	-	2	1	1
Abnormal transaminases	40	1	2	-	-
Abnormal bilirubin	43	-	-	-	-
Hyponatremia	36	4	-	3	-
Abnormal creatinine clearance	30	6	7	-	-
Chronic adverse effect	Grades (n)				
	0	1	2	3	4
Extremities/Neuromuscular	39	1	2	-	1
Hematochezia	21	5	12	4	1
Rectosigmoid abnormalities	21	2	11	5	4
Diarrhoea	29	4	7	3	-
Vaginal abnormalities	28	6	9	-	-
Urinary abnormalities	36	2	3	-	2

Results of oncological follow-up of cervical cancer patients (n = 43)

Follow-up	Measurement
Follow-up time in months, median (IQR) ^Δ	32 (28)
Fatality rate (person-years)	5/100
Global survival at 2 years (%)	82.9
Relapse rate (person-years)	5.7/100
Recurrence (n)	6/35
Local recurrence rate (%)	9
Time to relapse in months, median (IQR) ^Δ	20.9 (9.26)
Disease-free interval in months, median (IQR) ^Δ	24.2 (24.2)
Persistence (n/ total)	7/43
Deaths (n/ total)	6/43