Phase II study of chemoradiotherapy followed by consolidation chemotherapy paclitaxel and carboplatin in FIGO stage IIIB/IVA cervical cancer patients

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Introduction:

A phase II study was conducted to evaluate the efficacy and safety of paclitaxel plus carboplatin (TC)-based concurrent chemoradiotherapy (CCRT) followed by consolidation chemotherapy in patients with FIGO stage IIIB/IVA cervical cancer.

Patients and Methods:

Patients with newly diagnosed FIGO stage IIIB/IVA cervical cancer patients were eligible for this study. The patients were treated with pelvic external beam radiotherapy plus intracavitary brachytherapy and concurrent weekly carboplatin (AUC: 2) and paclitaxel (35mg/m²) (TC-based CCRT). Three cycles of consolidation chemotherapy involving carboplatin (AUC: 5) and paclitaxel (175mg/m²) were administered after TC-based CCRT. The primary endpoint of this study was the 3-year progression-free survival (PFS) rate and the secondary endpoints were 3-year overall survival (OS) rate. Survival was calculated using the Kaplan-Meier methods and compared using the log-rank test.

Results:

Thirty-one patients were enrolled and treated. Overall, the treatment was well tolerated, and 24 patients (77.4%) completed the planned TC-based CCRT. The most frequently observed acute grade 3/4 hematological toxicities were leukopenia and neutropenia, and no acute grade 3/4 non-hematological toxicity was observed. After a median follow-up period of 40 months, 13 patients (41.9%) had developed recurrent disease. The patients' estimated 3-year progression-free survival (PFS) and overall survival (OS) rates were 52.9% and 85.7%. In comparisons with historical control groups (Single platinum based CCRT; n=52, definitive radiotherapy alone; n=74) TC-based CCRT followed by TC-based consolidation chemotherapy was found to be significantly superior to CCRT involving a single platinum or radiotherapy alone in terms of OS (p<0.05).

Conclusion:

In women with FIGO stage IIIB/IVA cervical cancer, pelvic TC-based CCRT followed by TC-based consolidation chemotherapy is feasible and highly effective. Future randomized trials are needed to verify the efficacy of this regimen.

Treatment schedule

Result 1; Patient characteristics

Variables		TC-CCRT	
		No.	%
Age (yr)	Median (range)	59 (30-74)	
	≤50	9	29.0
	51-74	22	71.0
FIGO stage	IIIB	29	93.5
	IVA	2	6.5
PS	0-1	31	100
	≥2	0	0
Histology	SCC	25	80.6
	Non SCC	6	19.4
Pelvic node status	Yes	7	22.6
	No	24	77.4
Maximum tumor diameter (mm)	Median (range)	60 (40-70)	
	≤40	3	9.7
	41-60	18	58.1
	≥61	10	32.6
Pretreatment hemoglobin level (mg/dL)	Median (range)	12 (7.2-14.7)	
	≤10.0	6	19.4
	>10.0	25	80.6

Result 2; Kaplan-Meier estimates of (i) PFS (ii) OS

(i) PFS

(ii) OS

Result 3; Treatment outcomes

Variables		No. of patients (%)
Course of TC administred during CCRT	Median (range)	5 (1-6)
	1	0
	2-4	7
	5-6	24
Duration of radiotherapy (day)	Median (range)	47 (38-67)
Course of consolidation TC administered	Median (range)	
	0	13
	1-2	0
	3	18
Local control	CR	25
	PR	6
	SD+PD	0
	Total	31
Patients with recurrence	Total	13 (41.9)
Site of recurrence	Local	2
	Local+Distnat	2
	Distant	9
	Total	13
Patients with death	Total	7 (22.6)

Result 4; Grade 3-4 toxicities

Type of toxicity		No. of patients (%)	
Acute toxicity	Hematologic toxicities	Total	18 (58.1)
		Leukopenia	16
		Neutropenia	11
		Anemia	0
		Thrombocytopenia	1
		Febrile neutropenia	1
	Non-hematologic toxicities	Total	0
		Nausea/vomiting	0
		Diarrhea	0
		Fatigue	0
Late toxicity	Total	4 (12.9)	
		Vesicovaginal fistula	1
		Rectal bleeding	1
		Lymphatic fistula	2

Result 5; Survival estimates comparison with historical controls. Kaplan-Meier estimates of overall survival

Conclusion

Pelvic TC-based CCRT followed by consolidation chemotherapy is effective and exhibits an acceptable toxicity profile in FIGO stage IIIB/IVA cervical cancer patients. It resulted in estimated 3-year PFS and OS rates of 52.9% and 85.7% after a median follow-up period of 40 months, respectively. This multimodal treatment might represent a new treatment strategy for FIGO stage IIIB/IVA cervical cancer. A randomized controlled study needs to be conducted to further verify the efficacy of this approach.

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