

		TURBT (Transurethral Resection of Bladder Tumor)					
		(neoadjuvant MCV chemotherapy)		(cisplatin chemotherapy and radiotherapy)			
1990	10	1998	6	TURBT	TURBT	4	2
T2-T4, Grade II		21			cisplatin		MCV
(methotrexate, cisplatin, vinblastine)							
	6	15	1.8 Gy	39.6	45 Gy	4	5
						1	2
	19.8 Gy						cisplatin
				34	67		가
							49.5
26	가						
	21 (81%)						
	21	7 (33%)			14 (67%)		
	19.8 Gy	7	6 (85%)		5 (14%)		
	1		3	TURBT	2	MCV	, 10
				1			가
	21	12 (58%)				8	
1				27	, 5		55%
				5	80%		14%
	(p=0.001).					grade 3	
		6 (29%),		1 (4%)			1 (4%)
							5
	가	가		TURBT	MCV	cisplatin	

가

TURBT

2001 4 17 2001 8 28

1998 6 26 1990 10

Te l: 05 1)240- 5383, Fax : 05 1)254- 5889 가 TURBT,

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1.

Table 1. Tumor and Patient Characteristics

Characteristic	No.	%
Age (years)		
<60	7	33
60-69	9	44
70	5	23
Sex		
Male	18	85
Female	3	15
Performance status (ECOG)		
0	6	30
1	13	63
2	2	7
History		
Transitional cell carcinoma	20	95
Adenocarcinoma	1	5
Grade		
2	15	71
3	6	29
Tumor stage		
T2	7	34
T3a	2	9
T3b	5	23
T4a	7	35
Node stage		
N0 Nx	15	71
N1	4	19
N2	2	10

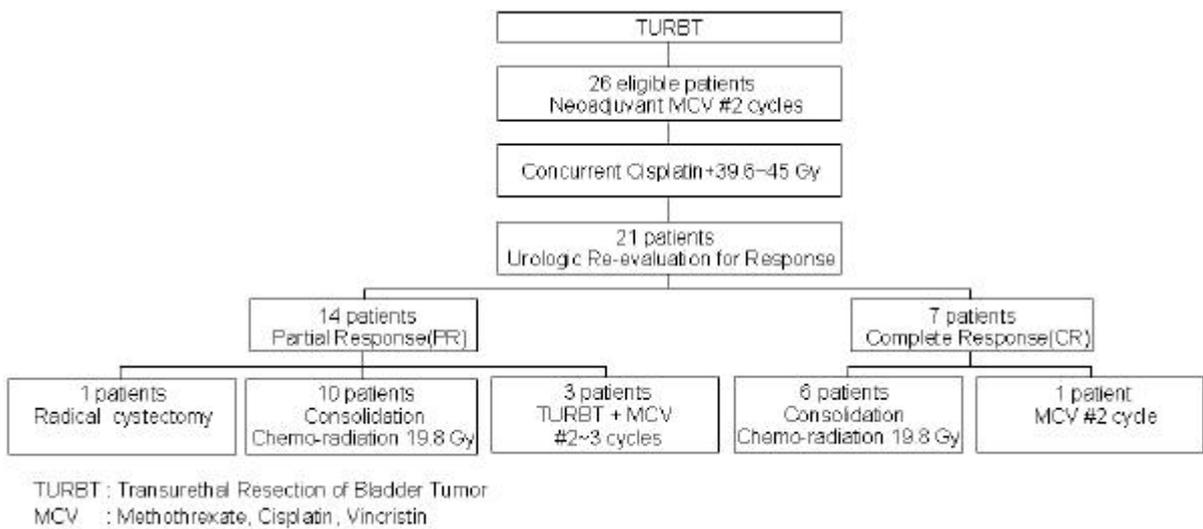


Fig. 1. Protocol for treating invasive bladder cancer with combined TURBT, chemotherapy and chemo-radiotherapy for attempted bladder preservation.

Fig. 1

1) Methotrexate 30 mg/m² 0, 14, 21 cisplatin 70 mg/m² 1, vinblastine 3 mg/m² 1, 14, 21 28 2 가 75,000/mm³, 2000/mm³, bilirubin 2.0 mg/dL methotrexate vinblastine 1.5 mg/mL methotrexate cisplatin cisplatin vinblastine methotrexate 2) 2 3 box 5 technique 6MV 15MV 가 1 1.8 Gy 39.6 45 Gy cisplatin 100 mg/m² 가 1 22 4 6 . 4 가 가 , 5.4 Gy, 14.4 Gy 19.8 Gy cisplatin 3. 가 가 가 6 가 2 3 , 가 4. 가 가 Radiation Therapy Oncology Group (RTOG) 가 , 가 World Health Organization (WHO) 가 ^{1, 2)}

5. Kaplan-Meier rank . p 0.05 long- 1. 49.5 (36 67) . (compliance) 가 . 26 21 (81%) 가 . (1), (2) . grade 1 2 , 2 (9%) 7 (33%) 3 (14%) 11 (52%) . 6 가 2000/mm³ 1 75000/mm³ 4 2 mg/mL . 17 (80%) 3 (14%) cisplatin (Table 2). 2. T2, T3a TURBT 가 T3b, T4 TURBT gross tumor . MCV cisplatin 39.8 45 Gy

Table 2. Toxicity after MCV Chemotherapy and Cisplatin Chemo- Radiotherapy

Grade 3 4 Toxicity	MCV*	Cisplatin + RT†	Total
Bladder	1	3	4
Rectal	1	1	2
Bowel	2	1	3
Nausea	2	1	3
WBC	4	2	6
Platelet	-	1	1
Renal	2	2	4

*MCV : Methotrexate, Cisplatin, Vincristin
 † RT : Radiotherapy

9 :

21 7 (33%), 14
 (67%) 7 6 cisplatin 가
 59.4 64.8 Gy 1
 2 MCV
 6 5 (83%)
 14 10
 가 , 1
 3 TURBT 2 MCV
 14 (9 , 4
) 13
 1
 T2 7 , T3a 2 가 5 1 [9
 6 (67%) T3b 5 , T4 7
 T3b 1 [12 1 (14%) . T
 (Table 3).

Table 3. Response according to stage after MCV Chemotherapy and Cisplatin Chemoradiotherapy

	CR (%)		PR (%)	
	7/ 21 (33)		14/ 21 (67)	
Stage T2	5/ 7 (71)) 6/ 9(67)	2/ 7 (29)) 3/ 9 (33)
T3a	1/ 2 (50)		1/ 2 (50)	
T3b	1/ 5 (20)) 1/ 12(8)	4/ 5 (80)) 11/ 12 (92)
T4	0/ 7 (0)		7/ 7 (100)	

CR : Complete Response, PR : Partial Response

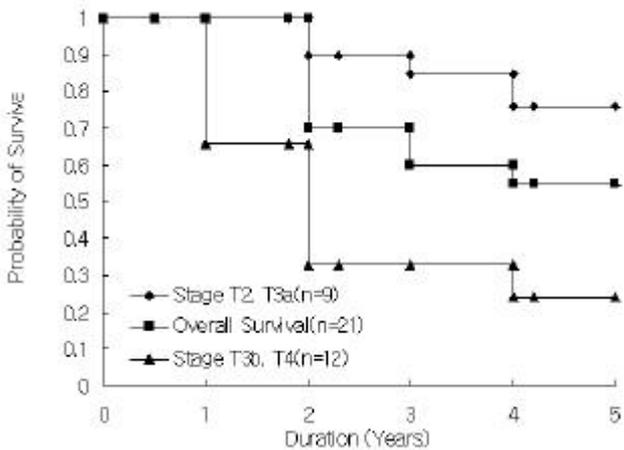


Fig. 2. Overall survival according to clinical stage in combined TURBT, MCV chemotherapy and cisplatin chemo-radiotherapy for invasive bladder cancer.

3.

21 12 (58%)
 8 , 1
 21 27 , 5
 55% T2 T3a T3b T4
 5 76% 24%
 Fig. 2
 (7) (14) 1
 81% 14% 가 (p-
 value<0.001, Fig. 3).

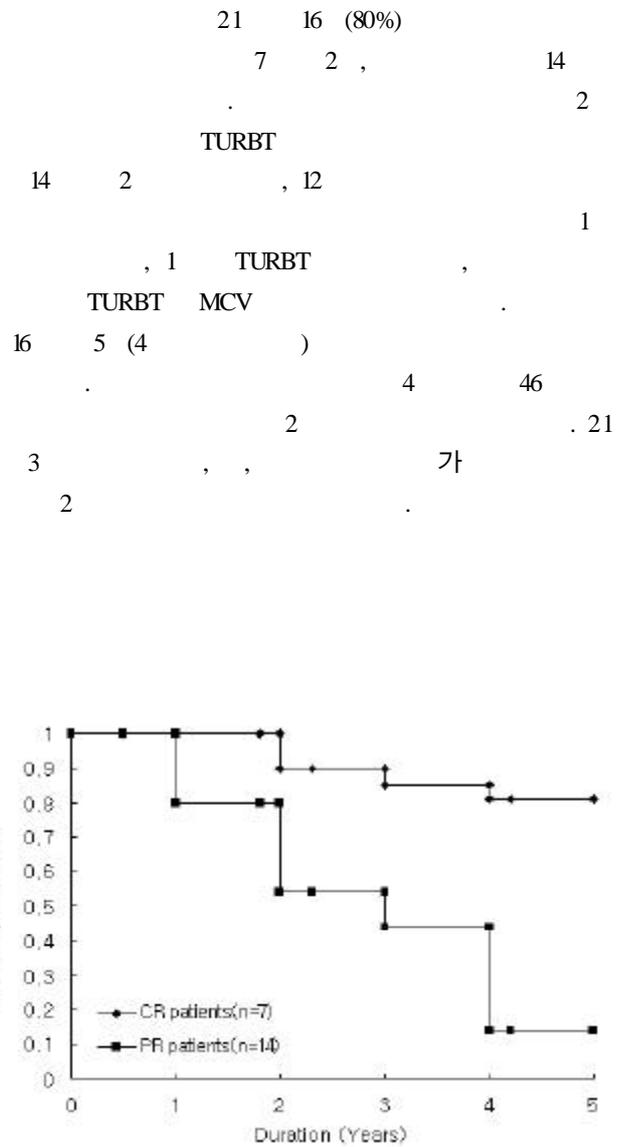


Fig. 3. Overall survival according to treatment response in combined TURBT, MCV chemotherapy and cisplatin chemo-radiotherapy for invasive bladder cancer.

3 5) RTOG88-02 T2-T4a
 2 가
 50% 가 75% , 60%
 가 6) 30 50% , 5 4 44% 19)
 23 40% T2 T4 106 MGH(Massachusetts Ge-
 7) 66% 5 neral Hospital)
 cisplatin 43% 20) , Erlangen ,
 Paris , RTOG, MGH cisplatin 5
 8 14) 가 45 52%,
 15, 16) 54 67% 21 24)
 1) 50% 가 33% , 58%
 가 가 5 55%
 2) TURBT가 3) cisplatin
 가 4) cisplatin
 5) cisplatin, methotrexate, vinblastin, doxo-
 rubicin TURBT가 T3b (5), T4a (7) 가 57%
 TURBT가 가
 T3a (2) TURBT가 T2 (7) ,
 T4 (7) 가 67% (6/9), T3b (5) ,
 가 8% (1/12)
 1980 가
 TURBT가 가
 TURBT, 가 RTOG 가
 TURBT MCV 81%
 15, 17) 가 50%
 (occult metastasis) 가
 18) 가 30 40% . 10 가
 14 1
 14
 2 3 가
 Sell T3 40
 Gy 60 가 가
 Gy 5 29% 23%,
 34% 32% 가 59.4 64.8 Gy RTOG, MGH 64.8 Gy
 가 가 18) cisplatin

9 :

가

TURBT, 2

MCV , cisplatin

가

가

TURBT가 가

가

가

TURBT, 2

가

3

가

1

가

4

4

가

TURBT

가

가

RTOG88-03 2 MCV

cisplatin

cisplatin

²⁵⁾

5

(49% vs 48%), 5

(33% vs 39%),

5

(38% vs 36%)

가

MCV

가

(67% vs 81%)

. MGH

T2 T4a

cisplatin, 5FU 1 2

cisplatin, 5FU가

1.25 1.50 Gy 1 2

(: 1.25 Gy 1

2 5 + cisplatin, 5FU,

: 1.5 Gy 1 2 5 ,

1.5 Gy 1 2 5 + cisplatin)

(3

)

가

78%, 3

83%,

3

78%

가

²⁶⁾

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Abstract

**Combined Modality Therapy with Selective Bladder Preservation
for Muscle Invading Bladder Cancer**

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Purpose : To assess the tolerance, complete response rate, bladder preservation rate and survival rate in patients with muscle-invading bladder cancer treated with selective bladder preservation protocol.

Method and Materials : From October 1990 to June 1998, twenty six patients with muscle-invading bladder cancer (clinical stage T2-4, N0-3, M0) were enrolled for the treatment protocol of bladder preservation. They were treated with maximal TURBT (transurethral resection of bladder tumor) and 2 cycles of MCV chemotherapy (methotrexate, cisplatin, and vinblastine) followed by 39.6-45 Gy pelvic irradiation with concomitant cisplatin. After complete urologic evaluation (biopsy or cytology), the patients who achieved complete response were planned for bladder preservation treatment and treated with consolidation cisplatin and radiotherapy (19.8 Gy). The patients who had incomplete response were planned to immediate radical cystectomy. If they refused radical cystectomy, they were treated either with TURBT followed by MCV or cisplatin chemotherapy and radiotherapy. The median follow-up duration is 49.5 months.

Result : The patients with stage T2-3a and T3b-4a underwent complete removal of tumor or gross tumor removal by TURBT, respectively. Twenty one out of 26 patients (81%) successfully completed the protocol of the planned chemo-radiotherapy. Seven patients had documented complete response. Six of them were treated with additional consolidation cisplatin and radiotherapy. One patient was treated with 2 cycles of MCV chemotherapy due to refusal of chemo-radiotherapy. Five of 7 complete responders had functioning tumor-free bladder. Fourteen patients of incomplete responders were further treated with one of the followings : radical cystectomy (1 patient), or TURBT and 2 cycles of MCV chemotherapy (3 patients), or cisplatin and radiotherapy (10 patients). Thirteen patients of them were not treated with planned radical cystectomy due to patients' refusal (9 patients) or underlying medical problems (4 patients). Among twenty one patients, 12 patients (58%) were alive with their preserved bladder, 8 patients died with the disease, 1 patient died of intercurrent disease. The 5 years actuarial survival rates according to CR and PR after MCV chemotherapy and cisplatin chemoradiotherapy were 80% and 14%, respectively ($p=0.001$).

Conclusion : In selected patients with muscle-invading bladder cancer, the bladder preservation could be achieved by MCV chemotherapy and cisplatin chemo-radiotherapy. All patients tolerated well this bladder preservation protocol. The availability of complete TURBT and the responsibility of neoadjuvant chemotherapy and chemoradiotherapy were important predictors for bladder preservation and survival. The patients who had not achieved complete response after neoadjuvant chemotherapy and chemoradiotherapy should be immediate radical cystectomy. A randomized prospective trial might be essential to determine more accurate indications between cystectomy or bladder preservation.

Key Words : Invasive Bladder Cancer, Bladder Preservation