

TRANSURETHRAL RESECTION OF BLADDER TUMORS FOLLOWED BY RADIOTHERAPY WITH OR WITHOUT CHEMOTHERAPY FOR BLADDER PRESERVATION IN PATIENTS WITH INVASIVE BLADDER TRANSITIONAL CELL CARCINOMA: PRELIMINARY NTUH EXPERIENCE.

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Purpose : Radical cystectomy has been the standard treatment for invasive transitional cell carcinoma (TCC) of urinary bladder. Transurethral resection of bladder tumors (TUR-BT) and radiotherapy (RT) provide an alternative option to cystectomy for organ preservation. The trimodality therapy (TMT) incorporating neoadjuvant and concurrent chemotherapy (CHT) seems to improve the treatment result. This study is to evaluate the short-term outcome and treatment-related toxicity of the TMT for bladder preservation.

Materials and Methods : From 2000 to 2004, 37 patients with invasive bladder TCC undergoing bladder preservation therapy were reviewed retrospectively. Among them, 21 patients received radical TUR-BT followed by RT alone. The other 16 patients who had complete response or good partial response after radical TUR-BT and neoadjuvant CHT received further RT or concurrent chemoradiation. The RT protocol was 45 Gy to small pelvis field and 50.4 Gy to whole bladder, plus tumor bed boost to a total dose of 64.8 Gy with daily fraction size of 1.8 Gy in the TMT group. Patients in the RT alone group received 60 Gy to whole bladder or 40 Gy to whole pelvis plus 20 Gy boost to whole bladder with daily fraction size of 2.0 Gy. Interval cystoscopy was performed to confirm the status of complete response for continuation of RT in the TMT group.

Results : The median age was 61.8 in the TMT group and 76.8 in the RT alone group. Thirty patients were male and seven were female. In the TMT group, fourteen patients had complete response after radical TUR-BT and induction CHT. Seven patients (43.7%) in the TMT group had grade 3 or 4 acute toxicity, and two of them died of treatment toxicity. The other five patients completed their treatment course with modification of CHT. In the RT alone group, only one patient (4.7%) had grade 3 acute toxicity. The median follow-up was 14.6 months in the TMT group and 21 months in the RT alone group. In the 14 patients completing TMT, two patients experienced local recurrence and none of 16 patients had distant metastasis. In the RT alone group, eight of 21 patients had local recurrence while 7 patients had distant metastasis. The one-year locoregional control rates were 93.3% in TMT group and 72.0% in RT alone group ($p = 0.11$). The one-year metastasis-free survival, disease-free survival, and overall survival were 100% and 73.3% ($p = 0.047$), 93.3% and 62.3% ($p = 0.05$), and 87.5% and 79.8% ($p = 0.23$), respectively.

Conclusion : At the cost of increased acute toxicity, TMT for bladder preservation

provides significant better metastasis-free survival and favorable disease-free survival. Our protocol seems feasible and well tolerated in most patients. With limited follow-up, the result of TMT remains satisfactory in selected patients. Longer observation is needed to confirm the ultimate success of bladder preservation.

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Key words: Bladder cancer, Preservation, Trimodality therapy

INTRODUCTION

The incidence of bladder cancer is increasing in Taiwan. According to the data of Taiwan Cancer Registry [3] from 1995 to 2000, the incidence increases from 6.91 to 10.20 per 100,000 person-years in male and from 2.67 to 4.45 per 100,000 person-years in female. The male to female ratio is 2.31, while the median age of diagnosis is 70-year-old in male and 68-year-old in female. Transitional cell carcinoma (TCC) is the most common histology type of bladder cancer.

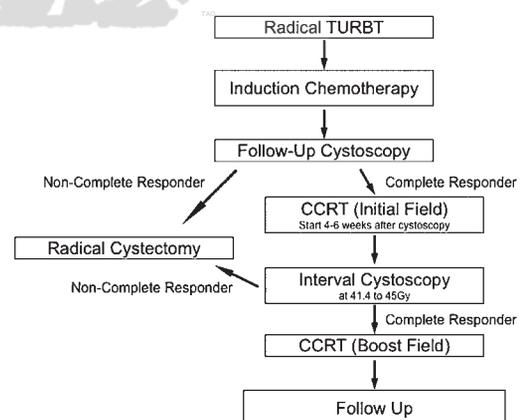
Surgical management with either transurethral resection of bladder tumor (TURBT) or radical cystectomy is the standard treatment for superficial or invasive bladder cancer [21]. The experience from the University of Southern California and the Memorial Sloan-Kettering Cancer Center showed that the 5-year and 10-year overall survival of radical cystectomy for patients with pathological T2 to T4a invasive bladder cancer ranged from 36-48% and 27-32%, respectively [4,27]. In recent years, selective bladder preservation therapy was studied increasingly to evaluate the outcome of this alternative treatment strategy [12]. Although there is still short of randomized phase III studies, the treatment results from available published literature including the Radiation Therapy Oncology Group (RTOG) and the Massachusetts General Hospital (MGH) experiences demonstrate satisfactory and comparative outcomes for selective

patients with the 5-year and 10-year overall survival ranging from 45-54% and 29-36%, respectively [23,24]. Therefore, we initiated our own selective bladder preservation protocol since 2003 to evaluate the feasibility, effectiveness and outcome of this organ preservation strategy in our population group.

METHODS AND MATERIALS

Protocol

The current selective bladder preservation protocol in our hospital is summarized in Figure 1. Patients with newly diagnosed or recurrent muscle-invasive bladder TCC, no known distant metastasis, and good performance status



TURBT: transurethral resection of bladder tumor; CCRT: concurrent chemoradiation therapy.

Fig 1. Current bladder preservation protocol for bladder cancer in NTUH.