

PRELIMINARY RESULTS OF BIOCHEMICAL OUTCOMES, SURVIVAL AND TOXICITY IN PATIENTS TREATED WITH INTENSITY-MODULATED RADIATION THERAPY FOR LOCALIZED PROSTATE CANCER

Chen-Ta Wu¹, Chia-Hsuan Lai¹, Chao-Hsiung Hung¹, Kuo-Chi Liu¹,
Miao-Fen Chen^{1,2,3}, Wen-Cheng Chen^{1,2,*}

*Department of Radiation Oncology¹, Chang Gung Memorial Hospital, Chiayi, Taiwan
College of Medicine², Graduate Institute of Clinical Medicine³,
College of Medicine, Chang Gung University, Taoyuan, Taiwan*

Purpose : To report preliminary biochemical outcomes, survival and toxicity for patients with localized prostate cancer treated with intensity-modulated radiotherapy (IMRT).

Materials and Methods : Between December 2003 and March 2012, eighty-seven patients with clinically localized prostate cancer were treated with IMRT at our institution. Treatment was planned using an inverse-planning method. The beam intensity profiles were delivered by dynamic multileaf collimation. Patients were stratified by prognostic risk groups based on National Comprehensive Cancer Network (NCCN) risk classification criteria. Biochemical failure was defined using the 2005 ASTRO Phoenix consensus definition of the nadir prostate-specific antigen (PSA) concentration plus 2 ng/mL. Prescribed dose ranged from 61-78.4 Gy. The median follow-up time was 41 months (range: 10-105 months).

Results : The 3-year actuarial biochemical relapse-free survival rates for low, intermediate, high, and very high risk group patients were 100%, 100%, 76.3%, and 88.5%, respectively. The 3- and 5-year actuarial overall survival rates were 92% and 80%. Twenty-five patients (28.7%) developed acute Grade 2 GI toxicity, and no patient experienced acute Grade 3 or greater rectal symptoms. Nineteen patients (21.8%) developed acute Grade 2 genitourinary (GU) symptoms, and one experienced Grade 3 or higher GU toxicity. No patient developed late Grade 2 or greater rectal toxicity. Only three patients (3.5%) experienced late Grade 2 GU toxicity. No late Grade 3 or greater GU complications have been observed.

Conclusions : Our data demonstrate the feasibility of IMRT in the treatment of localized prostate cancer. Acute and late rectal toxicities are minimal. Short-term biochemical controls are comparable to published results of IMRT. Based on this favorable outcome, IMRT has become the standard treatment for localized prostate cancer at our institution.

[Therapeut Radiol Oncol 2014; 21(1): 1-12]

Key words: Prostate cancer, IMRT, Biochemical relapse-free survival