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学位論文の題名	Toxicity and efficacy of three dose-fractionation regimens of intensity-modulated radiation therapy for localized prostate cancer (限局性前立腺癌に対する3つの総線量/分割回数による強度変調放射線治療の有害事象および有効性)
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Toxicity and efficacy of three dose-fractionation regimens of intensity-modulated radiation therapy for localized prostate cancer

<Purpose>Outcomes of three protocols of intensity-modulated radiation therapy (IMRT) for localized prostate cancer were evaluated.

<Methods>A total of 259 patients treated with 5-field IMRT between 2005 and 2011 were analyzed. First, 74 patients were treated with a daily fraction of 2.0 Gy to a total of 74 Gy (low risk) or 78 Gy (intermediate or high risk). Then, 101 patients were treated with a 2.1-Gy daily fraction to 73.5 or 77.7 Gy. More recently, 84 patients were treated with a 2.2-Gy fraction to 72.6 or 74.8 Gy. The median patient age was 70 years (range, 54–82) and the follow-up period for living patients was 47 months (range, 18–97). Androgen deprivation therapy was given according to patient risk.

<Results>The overall and biochemical failure-free survival rates were, respectively, 96 and 82% at 6 years in the 2.0-Gy group, 99 and 96% at 4 years in the 2.1-Gy group, and 99 and 96% at 2 years in the 2.2-Gy group. The biochemical failure-free rate for high-risk patients in all groups was 89% at 4 years. Incidences of Grade ≥ 2 acute genitourinary toxicities were 9.5% in the 2.0-Gy group, 18% in the 2.1-Gy group, and 15% in the 2.2-Gy group ($P = 0.29$). Cumulative incidences of Grade ≥ 2 late gastrointestinal toxicity were 13% in the 2.0-Gy group at 6 years, 12% in the 2.1-Gy group at 4 years, and 3.7% in the 2.2-Gy group at 2 years ($P = 0.23$).

<Conclusion>So far, this stepwise shortening of treatment periods seems to be successful.