Intensity-modulated radiation therapy leads to survival benefit only in patients with high-risk prostate cancer: a population-based study.


Abstract

BACKGROUND: During the last years, there has been a rapid adoption of intensity-modulated radiation therapy (IMRT) in patients with prostate cancer (PCa), despite the lack of randomized trials evaluating its effectiveness. The aim of our study was to evaluate the survival benefit associated with IMRT in patients with PCa.

PATIENTS AND METHODS: Overall, 42,483 patients with PCa treated with IMRT or initial observation between 2001 and 2007 within the Surveillance, Epidemiology, and End Results (SEER)-Medicare were evaluated. Patients in both treatment arms were matched using propensity-score methodology. After propensity-score matching, 19,064 patients remained in our analyses. Eight-year cancer-specific mortality (CSM) rates were estimated, and the number needed to treat (NNT) was calculated. Competing risks regression analyses tested the relationship between treatment type and CSM.

RESULTS: Overall, the 8-year CSM rates were 3.4% and 4.1% for patients treated with IMRT versus initial observation, respectively (P < 0.001). The corresponding 8-year NNT was 142. In patients with low/intermediate-risk disease, IMRT was not associated with lower CSM rates compared with observation (P = 0.7). In patients with high-risk disease, the 8-year CSM rates for IMRT versus observation were 5.8% versus 10.5%, respectively (P < 0.001). The corresponding NNT was 21. When high-risk patients were stratified according to age (<73 versus ≥73), and Charlson comorbidity index (≤1 versus >1) the 8-year CSM rates for IMRT versus observation were 4.3% versus 9.4% and 6.9% versus 11.9% and 5.3% versus 11.4% and 6.1% versus 10.1%, respectively (all Ps < 0.001). The corresponding NNTs were 19, 21, 16, and 25, respectively. In multivariate analyses, the protective effect of IMRT was more evident in high-risk patients with younger age and lower comorbidities.

CONCLUSIONS: IMRT leads to a survival advantage only in patients with high-risk disease. Conversely, patients with low/intermediate-risk disease did not benefit from IMRT at 8-year follow-up.

KEYWORDS: cancer-specific mortality, competing risks, intensity-modulated radiation therapy, prostate cancer, survival

PMID: 24562445 [PubMed - in process]
Intensity-modulated radiation therapy leads to sur... [Ann Oncol. 2014]... 