Early radiotherapy after radical prostatectomy improves cancer-specific survival only in patients with highly aggressive prostate cancer: Validation of recently released criteria.


Abstract

OBJECTIVES: To test the effect of radiotherapy administered within 6 months after radical prostatectomy on cancer-specific mortality in prostate cancer patients after stratification according to a risk score.

METHODS: Overall, 7616 patients with pT3/4 N0/1 prostate cancer treated with radical prostatectomy between 1995 and 2009 within the Surveillance Epidemiology and End Results Medicare-linked database were included in the study. Competing-risks regression models were carried out to test the effect of early radiotherapy on cancer-specific mortality in the entire cohort, and after stratifying patients according to the risk score based on the number and nature of adverse pathological characteristics (Gleason score 8-10; pT3b/4, lymph node invasion).

RESULTS: The risk score was associated with increasing 5- and 10-year cancer-specific mortality rates (P < 0.001). When considering only patients with a risk score ≥ 2, 5- and 10-year cancer-specific mortality rates were significantly lower for individuals undergoing early radiotherapy compared with their counterparts not receiving early radiotherapy (2.9 and 6.9 vs 5.7 and 16.2%, respectively; P = 0.002). The corresponding number required to treat to prevent one death from prostate cancer at 10-year follow up was 10. Early radiotherapy was not associated with lower cancer-specific mortality rates overall and in patients with a risk score <2. This was confirmed in multivariable analyses, where early radiotherapy decreased the risk of cancer-specific mortality only in patients with a risk score ≥ 2 (P ≤ 0.02).

CONCLUSIONS: The presence of two or more of the following pathological features might be used to identify patients who benefit from early radiotherapy: Gleason score 8-10, pT3b/4, and lymph node invasion.


KEYWORDS: adjuvant radiotherapy; cancer-specific survival; competing-risks; early radiotherapy; prostate cancer; radical prostatectomy; risk score

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