Selecting the optimal candidate for adjuvant radiotherapy after radical prostatectomy for prostate cancer: a long-term survival analysis.


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Abstract

BACKGROUND: The role of adjuvant radiotherapy (ART) after radical prostatectomy (RP) on survival of patients with prostate cancer (PCa) is still controversial.

OBJECTIVE: We tested the impact of ART on cancer-specific mortality (CSM) and overall mortality (OM) in PCa patients according to pathologic PCa features.

DESIGN, SETTING, AND PARTICIPANTS: We evaluated 1049 PCa patients treated with RP and extended pelvic lymph node dissection alone or in combination with adjuvant treatments between 1998 and 2008. All patients had positive surgical margins and/or pT3/pT4 disease with or without positive lymph nodes.

OUTCOME MEASUREMENTS AND STATISTICAL ANALYSIS: Cox regression analyses tested the relationship between pathologic characteristics and CSM rates. Independent predictors of survival were used to develop a novel risk score based on the number of risk factors. Finally, Cox regression models tested the relationship between ART and survival according to the number of risk factors.

RESULTS AND LIMITATIONS: On multivariable analyses, only pathologic Gleason score ≥ 8, pT3b/T4 stage, and presence of positive lymph nodes represented independent predictors of CSM (all p ≤ 0.02). The cumulative number of these pathologic findings was used to develop a risk score, which was 0, 1, 2, and 3 in 43.6%, 22.1%, 20.7%, and 13.6% of patients, respectively. In patients sharing more than two mentioned predictors of CSM (primarily having a risk score of 0 or 1), ART did not significantly improve survival (all p ≥ 0.4). Conversely, in patients with a risk score ≥ 2, ART was associated with lower CSM and OM rates (all p=0.006). The observational nature of the cohort represents a limitation of the study.

CONCLUSIONS: ART significantly improved survival only in patients with at least two of the following pathologic features at RP: Gleason score ≥ 8, pT3/pT4 disease, and positive lymph nodes. These patients represent the ideal candidates for ART after RP.

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