Docetaxel and mitoxantrone before radical prostatectomy in men with high-risk prostate cancer: 10-year follow-up and immune correlates.

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Abstract

The aims of this study were to report the clinical outcomes in a cohort of men with high-risk prostate cancer treated with neoadjuvant docetaxel and mitoxantrone 10 years after treatment, identify pretreatment clinical parameters that may be predictors of recurrence, and describe tumor-infiltrating leukocytes present in radical prostatectomy specimens. We conducted a phase I/II study of neoadjuvant docetaxel and mitoxantrone before radical prostatectomy in high-risk localized prostate cancer to determine the feasibility of this combination and predictors of prostate cancer recurrence after cytotoxic chemotherapy. After 10 years of follow-up, 34 (63%) of 54 participants experience a recurrence. In univariate analysis, prostate-specific antigen (PSA) density (P=0.01), pathological stage (P=0.03), lymph node status (P<0.0001), seminal vesicle invasion (P=0.003), and tissue vascular endothelial growth factor (VEGF) expression (P=0.016) were significantly associated with recurrence. In multivariate analysis, only lymph node status, PSA density, and VEGF expression were significant predictors of disease recurrence. We used a tissue microarray for the first 50 participants to characterize the tumor-infiltrating lymphocytes and evaluate them for association with recurrence. We measured CD3, CD4, CD8, FoxP3, CD20, CD15, CD68, and CD163 by immunohistochemistry in both tumor and normal prostate specimens, but did not find an association between immunophenotype and recurrence. There was a significantly different density of CD68 and CD163 cells between normal and tumor tissue. Lymph node status, PSA density, and tissue VEGF expression predict recurrence after chemotherapy for high-risk prostate cancer. Additional studies are needed to determine the potential benefit of chemotherapy in the neoadjuvant setting.

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