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Abstract

IMPORTANCE: Active surveillance is recommended for patients with very low-risk (VLR) and low-risk (LR) prostate cancer. Despite controversy, recent clinical guidelines state surveillance may be considered for men with low-volume intermediate-risk (LVIR) disease.

OBJECTIVE: To compare rates of adverse pathologic findings among VLR, LR, and LVIR men electing immediate radical prostatectomy and evaluate criteria to define if a favorable intermediate-risk group minimizing risk exists.

DESIGN, SETTING, AND PARTICIPANTS: This was a cohort study of men (2005-July 2016) with clinically localized VLR (1264 patients), LR (4849 patients), and LVIR (608 patients) (1-2 cores, Gleason 3 + 4 = 7, prostate-specific antigen [PSA] level <20 ng/mL) prostate cancer undergoing radical prostatectomy evaluated retrospectively at Johns Hopkins Hospital.

INTERVENTIONS: Radical prostatectomy.

MAIN OUTCOMES AND MEASURES: The proportions of men found to have at least Gleason 4 + 3 = 7 disease and other adverse pathologic features were compared by risk group. Log-binomial regression calculated relative risk (RR) of adverse pathologic findings in the LVIR cohort compared with VLR and LR cohorts. Analyses were repeated in subgroups of the LVIR population who otherwise met criteria for VLR (T1c, PSA density [PSAD] <0.15 ng/mL/cm³, ≤50% cancer in any core) and LR (≤T2a, PSA level <10 ng/mL) disease. Rates of adverse pathologic findings within the LVIR group were calculated based on various clinical thresholds, and univariable and multivariable logistic regression analyses were performed to identify predictors of adverse pathologic findings.

RESULTS: The rate of adverse pathologic findings was significantly higher for LVIR disease (150 of 608 patients [24.7%]; RR, 4.50; 95% CI, 3.73-5.43; P < .001) compared with LR disease (280 of 4849 [5.8%]), and LVIR disease (RR, 5.14; 95% CI, 3.84-6.89; P < .001) compared with men with VLR disease (60 of 1264 [4.7%]). Restriction of LVIR men to additional criteria did not significantly affect results. There were no preoperative clinical or pathologic criteria that could identify a subgroup of the LVIR population with rates of adverse pathologic findings comparable with those of the VLR and LR cohorts. PSAD was a significant predictor of adverse pathologic findings, but Gleason score had the largest effect (odds ratio,
CONCLUSIONS AND RELEVANCE: Nearly 25% of men (150 of 608) electing immediate radical prostatectomy with low-volume, Gleason 3 + 4 prostate cancer on biopsy are found to harbor adverse surgical pathologic findings. These data do not support the presence of a "favorable" subgroup among included patients and could have important implications for active surveillance in similar patients with Gleason 3 + 4 = 7 prostate cancer.