INTRODUCTION AND OBJECTIVES: The D’Amico risk stratification schema is a commonly used, validated predictor of prostate cancer outcomes. However, a significant heterogeneity of patients exists within the intermediate risk (IR) group. We analyzed intermediate-term oncologic outcomes of a large cohort of patients undergoing RALP and substratified the IR patients by Gleason score.

METHODS: A database of 2008 consecutive RALP was stratified by standard D’Amico criteria. IR patients were then substratified by biopsy Gleason score (3+3=6, 3+4=7, 4+3=7). Pathologic outcomes and biochemical disease-free survival (BDFS) were compared among the standard and substratified groups. Biochemical recurrence (BCR) was defined as a single PSA ≥0.2 ng/ml.

RESULTS: The cohort had a mean age of 59.6, mean PSA of 6.2 ng/ml, and median follow-up of 13.1 months. 950 patients were classified as D’Amico low-risk, 887 IR and 171 high-risk. Of the 887 IR patients, 144 had a biopsy Gleason 3+3=6, 556 were 3+4=7 and 187 were 4+3=7. Among the IR patients, as the biopsy Gleason score increased there was an increasing likelihood of extracapsular extension (14%, 29% and 42%, respectively, p<0.001), seminal vesicle invasion (2%, 6%, and 11%, p=0.005) and positive surgical margins (15%, 24%, 29% p=0.012). These differences translated to progressive worsening of intermediate-term biochemical outcomes (figure). Using Cox regression analysis, BDFS of the IR Gleason 3+3=6 group was not statistically different from the standard low-risk group (p=0.36) but was significantly better than IR 3+4=7 and IR 4+3=7 patients (p=0.03 and p=0.002, respectively). BDFS was also different between IR 3+4=7 and 4+3=7 patients (p=0.047). Preoperative PSA greater than 10ng/ml was also predictive of worse BDFS when controlling for biopsy Gleason score and clinical stage (p<0.001).

CONCLUSIONS: D’Amico IR patients demonstrate significant heterogeneity in both pathologic outcomes and BDFS. IR patients with a biopsy Gleason sum of 6 appear to have identical intermediate term BDFS as low-risk patients. Increasing biopsy Gleason scores from 3+3 results in higher likelihood of locally-advanced disease and BCR. IR patients with a biopsy Gleason score of 4+3 have significantly worse outcomes and may be suitable for clinical trials in the neoadjuvant setting.

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