SMOKING ASSOCIATED WITH HIGHER RISK OF PATHOLOGIC UPGRADING IN HISPANIC MEN WITH LOW−RISK PROSTATE CANCER WHO UNDERGO SURGERY: IMPLICATIONS FOR BRACHYTHERAPY AND ACTIVE SURVEILLANCE

José Silva MD[1], Juan Serrano−Olmo MD[2], Héctor López−Huertas MD[1], Ronald Cadillo−Chávez MD[3] and Ricardo Sánchez−Ortiz MD[1]

[1]University of Puerto Rico and Robotic Urology and Oncology Institute, San Juan, PR; [2]San Pablo Pathology, Bayamón, PR; [3]Robotic Urology and Oncology Institute, San Juan, PR

Introduction and Objectives: In contrast to Mexican American Hispanics, the Puerto Rican community has a greater West African genetic admixture, a group with a higher risk of adverse prostate cancer. Using a prostatectomy series, we evaluated the risk of pathologic upgrading or upstaging in Puerto Rican men with low−risk disease who could have otherwise been candidates for brachytherapy or active surveillance.

Methods: Of 453 consecutive patients who underwent robotic prostatectomy (RP) by a single surgeon, 188 patients were identified with the following criteria: PSA ≤ 10 ng/ml, Gleason score ≤ 6 (3+3) on biopsy, < 50% positive cores, and cT2b or less. All outside slides were centrally reviewed by a single pathologist. Preoperative variables were correlated with prostatectomy pathology to ascertain which were predictive of upgrading or upstaging. Multivariate analysis was performed with SPSS.

Results: Of 188 men with low−risk disease who underwent prostatectomy, 20.2% had their Gleason score upgraded to 7 (3+4) or greater and 8% had extraprostatic extension (combined: 25.5%). Fifty percent (94/188) were found to have perineural invasion not previously identified on the prostate biopsy. Nearly 30% of patients were past or current smokers (56/188). Having a history of smoking was the only variable which correlated with a higher likelihood of Gleason score upgrading (30.4% vs. 15.9%, $p< 0.001$) or having new perineural invasion identified in the prostatectomy specimen (62% vs. 45%, $p < 0.038$). There was a trend for patients with diabetes to have a higher risk of extraprostatic extension (16% vs. 6.7%, $p=0.12$) but this was not statistically significant. There were no other clinical variables predictive of adverse features after prostatectomy including age (mean: 56.7 years, range: 41 to 75), BMI (27.7), prostate volume (47.6 g), family history of prostate cancer, hypertension, positive biopsies at the base or laterally, or preoperative International Prostate Symptom score.

Conclusions: Caribbean Hispanic patients with a history of smoking and apparent low−risk prostate cancer have nearly twice the risk of Gleason score upgrading (30.4% vs. 15.9%) and a 38% higher risk of having occult perineural invasion (62% vs. 45%). The relationship between smoking and recurrence in Hispanic men with low−risk disease managed with brachytherapy or active surveillance deserves further study.