Active surveillance for men with newly diagnosed prostate cancer: critical role of pathology

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This talk will cover 25 years of work performed at The Johns Hopkins Hospital on the management of men with potentially insignificant prostate cancer. Data will first be presented on the long-term prognosis of untreated stage T1a prostatic carcinoma (limited low grade cancer on TURP). When radical prostatectomy is performed for these men, most patients have minimal (insignificant) disease, yet about 24% have more substantial tumor which is impossible to predict based on TUR extent or grade within the T1a stage. Currently, TURPs have decreased with most cancers detected due to nonpalpable tumors diagnosed on needle biopsy as a result of elevated serum PSA levels (T1c).

There is much evidence of overtreatment of prostate cancer in the PSA era, especially in older men. Since the 1980s, there has been an increase of minimal tumor detected at radical prostatectomy. In uncommon cases, no tumor is initially found in the radical prostatectomy specimen. We have developed a protocol to increase the likelihood of detecting cancer when initially no cancer is found. Currently, about 25% of radical prostatectomy specimens performed at our institution have potentially insignificant cancer (No Gleason pattern 4; organ confined cancer; and tumor volume <0.5 cc.). We have developed a preoperative model to predict men with who are likely to have potentially insignificant cancer based on: 1) nonpalpable disease; 2) no Gleason pattern 4 or 5 on needle biopsy; 3) <3 cores involved by cancer; 4) no core with >50% cancer; and PSA density <0.15. We can predict someone has significant cancer in 80% of time. When we predict they have insignificant cancer, we are accurate in about 85% of time. We currently have a large (>800 men) active surveillance program with men undergoing yearly PSA measurements and biopsies. At enrollment, a minimum of 12 core sampling is required. The criteria for recommending definitive therapy is solely based finding more advanced disease on repeat surveillance biopsy than our active surveillance entry criteria. We have not found various PSA measurements to be useful in predicting more advanced disease. Data will also be presented on the risk of cancer dedifferentiation over time in this cohort. Based on radical prostatectomy findings in men who have undergone definitive therapy following more advanced disease on follow-up biopsy, we now sample on yearly repeat biopsy the anterior region of the prostate for a total of 14 cores. We are in the process of evaluating other tests to better predict which men can be followed safely with active surveillance. One of the more crucial questions in Urology is the need for improved methods to distinguish men with life threatening prostate cancer from those with indolent disease who will not benefit from treatment.

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