Free/Total PSA Ratio: Predictive Value in Auguring Prostate Cancer Occurrence in African Men with Initial PSA Levels of 2.0 to 4.0 ng/ml

Introduction and Objectives: To evaluate the usefulness of measuring the free/total prostate-specific antigen (PSA) ratio (% fPSA) in men with initial PSA levels of 2.0 to 4.0 ng/ml as a predictor of the future risk of developing prostate cancer.
Materials and Methods: Between 2001 and 2010, 201 men were recruited in relation to the decision of their urologist to perform a biopsy. These subjects with an initial PSA level of 2.0 to 4.0 ng/ml, who had free PSA measured at initial screening using frozen serum and underwent consecutive screening at least once, were enrolled in this study. All participants were followed up by consecutive PSA measurements. Biopsies were performed for those with PSA levels greater than 2.0 ng/ml or with a PSA velocity of 0.75 ng/ml or greater in consecutive screening. The follow-up period was 1 to 10 years, and the mean number of screenings was 4.9. The usefulness of %f PSA, age, and total PSA as predictive factors of future prostate cancer morbidity was investigated. The cumulative prostate cancer rate was evaluated using Kaplan-Meier analysis relative to various % fPSA cutoffs.
Results: A total of 142 patients (71%) underwent prostate biopsy at least once during observation according to the biopsy criteria. The detection rate of prostate cancer was 26.3 % (53 of 201) in consecutive screening. The most recent PSA velocity and serum PSA levels at last follow-up in patients with prostate cancer were significantly higher than in those without prostate cancer. The cumulative prostate cancer rate was significantly greater in subjects with %fPSA less than the cutoff than in those with %fPSA at the cutoff point or greater in the %fPSA cutoffs of 17% to 26%.
Conclusions: Men with PSA levels of 2.0 to 4.0 ng/ml who are not suspected of having prostate cancer by whatever means should undergo %fPSA measurement and be carefully monitored at shorter intervals over the long-term if they have lower %fPSA levels.