ABSTRACT

Background: Considerable epidemiological, in vitro, in vivo and clinical data support an association between vitamin D deficiency and prostate cancer risk and outcome. Few studies have examined this association in African men with prostate cancer. The vitamin D status in patients with prostate cancer in Kenya is unknown. This study aimed to determine the profile of vitamin D levels in patients with prostate cancer and to correlate this to patient and disease characteristics. Methods: Hospital-based cross-sectional study that evaluated black African men with incident or 3-month prevalent histologically confirmed prostate cancer seeking ambulatory care at KNH. Medical history was obtained by direct interview and the information recorded in questionnaires. Treatment history, pre-diagnostic serum PSA and Gleason score were abstracted from patient records. Every participant had their anthropometric measurements taken and plasma samples drawn for 25-hydroxyvitamin D (25-VD) concentrations using the LIAISON® 25-OH automated chemiluminescent immunoassay method. The relationship between age, body mass index, pre-diagnostic serum PSA and Gleason score on vitamin D status was evaluated using bivariate and multivariate analysis. Results: 162 black African men were evaluated. The mean 25-VD was 19.15 ng/ml and 144 (88.9%) men had vitamin D deficiency (25-VD < 30 ng/ml). 29 (17.9%) were severely deficient (25-VD < 10 ng/ml), 115 (71%) were moderately deficient (10 < 30 ng/ml), and 18 (11.1%) were normal (30 - 100 ng/ml). Gleason scores > 7 (OR 2.9; 95% CI 1.5 - 5.5, p = 0.001) and serum PSA ≥ 50 ng/ml (OR 2.2; 95% CI 1.7 - 5.1, p = 0.014) were associated with vitamin D deficiency (25-VD < 20 ng/ml) whereas age and BMI were not. Adjusted for age, BMI and serum PSA levels, having Gleason scores > 7 was independently associated with vitamin D deficiency (OR 2.5; 95% CI 1.2 - 4.9, p = 0.01). Conclusion: Vitamin D deficiency is very common in black African men with prostate cancer, particularly in those with higher Gleason scores.