

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 < 30ng/ml). 29 (17.9%) were severely deficient (25 - VD < 10ng/ml), 115 (71%) were moderately deficient (10 - < 30 ng /ml) and 18 (11.1%) were normal (30 - 100ng/ml). Gleason scores > 7 (OR 2.9 ; 95% CI 1.5 - 5.5 , p = 0.001) and serum PSA ≥ 50ng/ml (OR 2.2 ; 95% CI 1.7 - 5.1 , p = 0.014) were associated with vitamin D deficiency (25 - VD < 20ng/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.