HIGHER THAN EXPECTED PREVALENCE OF VITAMIN D2 DEFICIENCY IN PATIENTS WITH CHRONIC KIDNEY DISEASE; DO WE REALLY NEED TO CHECK LEVELS TO TREAT?

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Recently published guidelines from the RPA and K/DOQI suggest treating any relative vitamin D2 deficiency prior to initiating more expensive active oral vitamin D3 preparations in patients with chronic kidney disease and secondary hyperparathyroidism. Studies noted that impaired dermal synthesis resulted in about 50% lower levels of vitamin D2 in African Americans than whites. The commonality appears to be lack of sunlight. The purpose of this study is to show an unexpectedly high occurrence of vitamin D2 deficiency in UMMC patient population. This is a retrospective study, measuring vitamin D2 levels in patients with GFR<30ml/min per 1.73m2 (MDRD) with iPTH>100pg/ml. K-DOQI suggests replacement of vitamin D2 50,000 units orally every month for 6 months if level is <30ng/ml. We analyzed data already present in medical records of patients evaluated at UMMC between 2003 - 2004. Variables evaluated were vitamin D2 level, degree of renal dysfunction, calcium and phosphorous product, medications, diagnosis, age, gender and race. Thirty patients were found to have the above mentioned data available. Essentially 100% of patients with the above criteria for CKD and secondary hyperparathyroidism, had relative vitamin D2 deficiency. The mean value for vitamin D2 was 12.6(±14.4 -5.6). The mean value for iPTH was 332(±1069-205); and the calcium and phosphorous product was 39 (±17.9-12). The mean GRF was 18.6(±17-8); and the mean age of the patients was 55 years (+25-15). We therefore conclude that in patients at UMMC in Jackson MS, with CKD (GFR<30 and iPTH>100), the prevalence of vitamin D2 deficiency is almost 100%. This is an unexpected finding given the geographical location of MS with plenty of sunlight. Noted in our analysis is the cost of supplementation which is approximately $11 for 6 months of vitamin D2 and the cost of checking a vitamin D2 level which is approximately $120. A prospective study should be conducted in the above mentioned patient population to further examine this high prevalence of vitamin D2 deficiency and evaluating the effect of supplementation with inexpensive vitamin D2 on secondary hyperparathyroidism in patients with advanced chronic kidney disease. Our data and cost analysis suggest it would simply be cheaper to supplement all appropriate patients while not check vitamin D2 levels.