BACKGROUND

- 10% of the US population has severe vitamin D deficiency, with highest prevalence in African Americans.  

- Vitamin D deficiency is significantly higher among the urban-living population, obesite patients, and in the Midwest.

- Multiple studies suggest that vitamin D deficiency may contribute to the pathophysiology of many diseases including cardiovascular disease, depression, and cancer.

- There are limited guidelines regarding the frequency and indications for vitamin D level testing.

RESULTS

- Of the patient cohort (n=3,976), only 17.56% had vitamin D levels tested and 12% had a prior diagnosis of vitamin D deficiency. Of those tested, 68% were females, 72% were African Americans, with an average age of 59 years.

- Women, patients with a history of bone fracture, alcohol use disorder, celiac disease, and chronic kidney disease (CKD) were more frequently tested (Table 1).

- Although most patients tested had vitamin D deficiency (71%), our study did not show significance between low vitamin D levels and medical conditions known to cause vitamin D deficiency (table 2).

- Of those with vitamin D deficiency who were re-tested, 52% had an increase in their vitamin D levels, and 40% of them became vitamin D sufficient.

- Race 0.8038
  - African American 2861 (71.96) 2355 (82.31) 506 (17.69)
  - Other 68 (1.71) 58 (85.29) 10 (14.71)
  - White 1047 (26.33) 865 (82.62) 182 (17.38)

- Gender <0.0001
  - Female 2440 (61.37) 1963 (80.45) 477 (19.55)
  - Male 1536 (38.63) 1315 (85.61) 221 (14.39)

- Hx of Bone Fracture 0.0008
  - No Indication 2355 (63.60) 1963 (82.89) 477 (17.11)
  - Indication 865 (22.30) 520 (60.47) 245 (29.53)

- Hx of Alcohol Use Disorder 0.0191
  - No Indication 3499 (91.10) 3036 (86.77) 463 (13.23)
  - Indication 477 (12.60) 242 (50.73) 235 (49.27)

- Hx of Vit. D Deficiency <0.0001
  - No Indication 3966 (99.75) 3273 (82.53) 693 (17.47)
  - Indication 10 (0.25) 5 (50.00) 5 (50.00)

- Chronic Kidney Disease <0.0001
  - No Indication 508 (72.78) 312 (33.98) 196 (27.02)
  - Indication 196 (27.22) 72 (80.99) 114 (19.01)

Table 2: Comparison of vitamin D deficiency amongst various subgroups

CONCLUSIONS

- Although African Americans are generally known to have lower levels of vitamin D when compared to other races, we found they were not more likely to be tested, or to have vitamin D deficiency.

- This retrospective study did not show significance between common medical problems associated with the low vitamin D levels and vitamin D deficiency.

- The majority of patients who had a repeat follow-up with vitamin D test had an improvement in their level.

RECOMMENDATION

- The decision to test for vitamin D level should remain individualized.