

Prevalence of Vitamin D Deficiency in Patients with Talar Osteochondral Lesions

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Introduction/Purpose: Vitamin D deficiency affects over 1 billion people worldwide and is common in foot and ankle patients. The prevalence in those with osteochondral lesions of the talus (OLTs) is unknown. This study identified the prevalence and risk factors for hypovitaminosis D in patients with an OLT.

Methods: Serum 25(OH)D levels were obtained from patients presenting with an OLT from May to November during 2007 to 2016. Hypovitaminosis D was defined as 25(OH)D less than 30 ng/mL (75 nmol/L). Patients presenting with an acute ankle sprain (AS) during the same months served as a control group. Specific medical risk factors for hypovitaminosis D were recorded. The final OLT population included 46 patients (31 women [67.4%]; mean [SD] age 43.6 [14.8] years). The comparison AS group had 40 patients (32 women [80.0%]; mean [SD] age 56.2 [13.0] years).

Results: The mean (SD) 25(OH)D in the OLT and AS cohorts were 31.2 (12.6) ng/mL and 37.1 (13.5) ng/mL, respectively ($P = .039$). Hypovitaminosis D was identified in 54% of the OLT population and 28% of the AS population ($P = .012$).

Conclusion: Hypovitaminosis D is intimately related to decreased bone mineral density. This study identified a significantly higher rate of hypovitaminosis D in patients with an OLT compared to a cohort of AS patients. These findings suggest that when patients present with an OLT, health care providers should consider evaluating for and treating hypovitaminosis D.

Table 2. Prevalence of Hypovitaminosis D and Mean 25(OH)D in Patients with a Talar Osteochondral Lesion or Ankle Sprain.^a

Vitamin D, ng/mL	OLT (n = 46)	AS (n = 40)	RR (95% CI)	P Value
Mean (SD), ng/mL	31.2 (12.6)	37.1 (13.5)	-	.039
Sufficient (≥ 30)	21 (46)	29 (73)	-	-
Insufficient (20-29.9)	18 (39)	7 (18)	-	-
Deficient (< 20)	7 (15)	4 (10)	-	-
Hypovitaminosis D (insufficient + deficient)	25 (54)	11 (28)	1.65 (1.12-2.45)	.012

Abbreviations: AS, ankle sprain; CI, confidence interval; OLT, osteochondral lesion of the talus; RR, relative risk; SD, standard deviation.

^aValues are presented as number (%) unless otherwise indicated. Patients with hypovitaminosis D had a 65% higher risk (RR) of having an OLT rather than an AS. Vitamin D sufficiency defined as 25(OH)D greater than or equal to 30 ng/mL, insufficiency as 25(OH)D of 20-29.9 ng/mL, and deficiency as 25(OH)D less than 20 ng/mL.^{17,21} Hypovitaminosis D was defined as 25(OH)D less than 30 ng/mL and included all patients with vitamin D values below the minimum recommended level.