

⚙️ Nutritional status in relation to balance in the frail elderly: A preliminary look at vitamin D and albumin

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Balance problems are an important risk factor for falls, especially in the frail elderly population. The association between balance problems and nutritional status remains unclear. In this study, we investigated the impact of two nutritional elements (vitamin D and albumin) on balance disorder in a frail elderly population. Balance assessment was performed in 55 fallers attending the Falls and Fractures Clinic at Nepean Hospital. Balance parameters namely limits of stability (LOS), eyes closed on foam (ECF) and visio-vestibular condition (VVC) were measured using a Balance Rehabilitation Unit (Medicaa™). Blood tests for serum vitamin D [25(OH)D₃] and albumin were conducted. Serum vitamin D was significantly lower (<55 nmol/l) in patients with alterations in VVC (108 +/- 2.1 vs. 127 +/- 2 cm², p = 0.02). No correlation between vitamin D deficiency and LOS or ECF was found. In contrast, serum albumin was significantly lower (<35 nmol/l) in patients with alterations in LOS (45 +/- 2 vs. 16 +/- 4 cm², p = 0.05) and ECF (38 +/- 3 vs. 4 +/- 2 cm², p = 0.02). In summary, low levels of vitamin D were associated to visio-vestibular alterations that have been correlated with increasing risk of falls. In contrast, low albumin was associated with balance parameters that require appropriate muscular strength. In conclusion, using an objective measurement of balance in a frail elderly population we have identified a different role of vitamin D and albumin in balance control. Further studies are required to elucidate the mechanisms of these associations.

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