(P03) VITAMIN D DEFICIENCY CORRELATES WITH LEARNING TASKS
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Background: Recent evidence suggests that vitamin D suppresses the expression of proinflammatory cytokines. This immunosuppressive quality of vitamin D potentially links it to multiple sclerosis (MS). Growing evidence also suggests that vitamin D may play a role in cognitive functioning in older adults. Cognitive dysfunction is a common symptom in MS, and few studies have explored the association between vitamin D (serum 25-hydroxyvitamin D) and cognitive status among individuals with MS. Objectives: The primary objective is to determine whether there are any relationships between serum vitamin D levels and cognitive performance within a comprehensive neuropsychological evaluation. Methods: Twenty-three patients with relapsing-remitting MS and secondary progressive MS were administered a comprehensive neuropsychological evaluation assessing emotional functioning, memory, executive functioning, processing speed, attention, and visuospatial abilities. Serum 25-hydroxyvitamin D levels were obtained through laboratory work prior to the neuropsychological evaluation. Results: Lower vitamin D levels were associated with worse performance on a test of verbal learning ($r = 0.49, P < .05$). Detailed examination of learning trials demonstrated that this effect was particularly pronounced for single trial learning ($r = 0.65, P < .001$). No significant association was found between serum vitamin D and later learning trials. Conclusions: MS patients frequently experience memory difficulties. Our results suggest that low serum vitamin D is associated with poor list learning performance, and specifically with poor initial trial learning. These findings suggest the importance of determining vitamin D levels in order to maximize cognitive potential among MS patients. Future randomized trials should examine whether vitamin D supplementation may improve learning in MS.

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