Amyotrophic lateral sclerosis (ALS) is a progressive and fatal neurodegenerative / neuromuscular disease. The sole accepted and mildly effective prescribed drug for managing ALS is the anti-glutamatergic drug Riluzole, which may prolong survival by 2-3 months. Alternatively, vitamin D has shown promise in attenuating the glutamate excitoxicity inherent in ALS pathology, as well as multiple other disease facets including oxidative stress, inflammation, neuronal loss and muscle atrophy in various in vitro, animal and clinical studies. Indeed, past research in our lab suggests that high dose vitamin D3 can slow functional decline in G93A mice which are genetically predisposed to developing ALS. On the other hand, data from our lab indicate that vitamin D3 restriction hastens such functional decline in the same mouse model. As well, preliminary data indicate that vitamin D3 influences calcium-binding proteins, endoplasmic reticulum health, contractile proteins, and cell death in G93A muscle. In sum, vitamin D3 therapy could prove to be an additional effective treatment for this debilitating disease. The current review presents information from the scientific literature to outline vitamin D's potential therapeutic benefit in ALS.

Reference: Gianforcaro A, Hamadeh MJ Vitamin D as a potential therapy in amyotrophic lateral sclerosis. CNS Neurosci Ther. 2014 Feb;20(2):101-11.

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