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Opinion

Cannabidiol and Amyotrophic Lateral Sclerosis: A Disease-Modifying Treatment

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Introduction

Amyotrophic Lateral Sclerosis can be defined as a progressive, degenerative and inexorable disease that leads to the depletion of upper and lower motor neurons. With the evolution of the disease, the patients present several damages regarding their daily activities. Muscle weakness is undoubtedly the leading cause of functional disability, swallowing, speech and breathing problems [1,2].

A drug approved to "contain" the natural history of the disease is Riluzole (a drug that slows dependence on mechanical ventilation for an average of 3-6 months). Other proposed treatments such as intramuscular use of Methyl cobalamin, oral use of l-serine at high doses, Tauroursodeoxycholic acid up to 2 grams/day, among others, have a certain link with the pathophysiological structure of the disease. Studies on novel therapies are warranted based from the emerging molecular discoveries on the pathogenesis of neuronal cell death in ALS. Edaravone, an antioxidant drug, has recently received approval by Food Drug Administration (FDA). However, more recent studies, while proving to be safe, Edaravone did not provide increased longevity [3-8].

Currently, there have been studies that "seek" to associate the use of medicinal cannabis (cannabidiol - CBD) with Amyotrophic Lateral Sclerosis, as these components have antioxidant, anti-inflammatory and neuroprotective characteristics. Authors "believe" that its use could lead to "relief" in neuronal death. We emphasize, with all our expertise, not only for the great care of this clientele, but based on current scientific articles, that CBD alone or associated with THC (Tetrahydrocannabinol) is not a disease-modifying drug, but it can be used (with parsimony), in some associated clinical situations (spasticity, sleep disturbance, anxiety, depression and pain) [9,10].

Although some media information brings hope to patients, it also generates psychological distress, as many believe in solving the problem altogether. Rare disease groups are extremely beneficial by sharing experiences, helping families, and especially in creating a positive and fierce current of disease control. It is worth mentioning that, every drug, whether controlled or not, ought to be first discussed with the specialist/prescribing physician [10].

Some colleagues or scholars on the subject (CBD) will question about the binding of THC to the CB1 receptor in glutamate receptor inhibition activity in the remaining motor neurons, and even through the antegrade and retrograde axoplasmic flows. It is a fact that glutamate (neurotransmitter) in excess causes damage to cells of the central nervous system and contributes to neurodegeneration. Once again, we are aware of these mechanisms, however current studies need more emphatic to "advertise" cannabidiol as a disease-modifying drug [11,12].

We will be asked again about studies that conclude that CBD when used in genetically modified animal models (rat) has proved to be a neuroprotective drug. We ought to call attention to the fact that results in animals may not translate success when research is directed to humans. We believe that further experiments may conclude that CBD is indeed a disease-modifying drug. However, at the present time we cannot "validate" such statement [13].

Can CBD be prescribed or not for patients with ALS? Certainly, as long as the prescriber knows exactly what its purpose is in the prescription and it is not considered a disease-modifying drug. Many of us have already prescribed or will prescribe CBD with or without THC in ALS patients; always aware, obviously, of our goals.

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