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Poster Presentation

Cannabidiol: A Promising Treatment for Intractable Epilepsy

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Abstract

Epilepsy is a chronic disease affects CNS in various ages. WHO estimates 50 million people are suffering from epilepsy worldwide which make it a serious prevalent problem among neurological diseases. Intractable epilepsy (IE) affects about 20-30% of epileptic patients who failed to be seizure - free after antiepileptic drug (AED) consumption. Although many AEDs now are available for epilepsy treatment, discovering new pharmaceutical components is needed to overcome intractable epilepsy. The antiepileptic potential of Cannabis sativa extractions has been recognized from past. Cannabis has many active components, including cannabidiol and Δ^9 -tetrahydrocannabinol (THC). Cannabidiol showed anticonvulsant effects in many studies with mild side effects. The mechanism by which Cannabidiol exerts its anticonvulsant properties is still unclear but may include effects on equilibrative nucleoside transporter, orphan G-protein-coupled receptor GPR55, transient receptor potential of vanilloid type-1 channel, 5-HT_{1a} receptor, and α glycine receptors. Also it's demonstrated the cannabinoid CB₁ receptor is the primary site of action for cannabinoid-induced effects on the CNS. CB₁ receptor Activation damps neurotransmission and produces an overall reduction in neuronal excitability. Not only anticonvulsant effects but also, cannabidiol showed antioxidant, anti-inflammatory, neuro-proliferative and re-myelinating effects in many preclinical and clinical studies. Further studies is needed to clarify the cannabidiol effects on various CNS disorders. It can make ways to introduce new drugs for neurological diseases, including IE.

Keywords: Intractable Epilepsy, Cannabidiol, Aticonvulsant

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