

A systematic review of the antipsychotic properties of cannabidiol in humans.

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Abstract

Despite extensive study over the past decades, available treatments for schizophrenia are only modestly effective and cause serious metabolic and neurological side effects. Therefore, there is an urgent need for novel therapeutic targets for the treatment of schizophrenia. A highly promising new pharmacological target in the context of schizophrenia is the endocannabinoid system. Modulation of this system by the main psychoactive component in cannabis, $\Delta 9$ -tetrahydrocannabinol (THC), induces acute psychotic effects and cognitive impairment. However, the non-psychoactive, plant-derived cannabinoid agent cannabidiol (CBD) may have antipsychotic properties, and thus may be a promising new agent in the treatment of schizophrenia. Here we review studies that investigated the antipsychotic properties of CBD in human subjects. Results show the ability of CBD to counteract psychotic symptoms and cognitive impairment associated with cannabis use as well as with acute THC administration. In addition, CBD may lower the risk for developing psychosis that is related to cannabis use. These effects are possibly mediated by opposite effects of CBD and THC on brain activity patterns in key regions implicated in the pathophysiology of schizophrenia, such as the striatum, hippocampus and prefrontal cortex. The first small-scale clinical studies with CBD treatment of patients with psychotic symptoms further confirm the potential of CBD as an effective, safe and well-tolerated antipsychotic compound, although large randomised clinical trials will be needed before this novel therapy can be introduced into clinical practice.

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KEYWORDS: Antipsychotic; Cannabidiol; Cannabis; Psychosis; Schizophrenia

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