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Extended Abstract

Post-traumatic stress disorder and the toxicology of Cannabis sativa

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Abstract

Many young men, women and even the elderly are addicted to Cannabis intake abuse despite its predictable toxicological consequences. In this study we studied the toxic effects of oral administration of methanol extract of Cannabis sativa seeds using total of forty male Wistar rats. Animals randomized were into five groups (n=8 rats) of approximately equal weight. Group-1 received 100 mg/kg of the of the extract, group-2 received 200 mg/kg of the extract, group-3 received 300 mg/kg dosage of the extract, group-4 received 2 ml of virgin olive oil (vehicle control) and group-5 received distilled water (normal control) for 14 days. The rationale behind the vehicle control group is to show that the vehicle did not have any extra cytological/histological effect. The proximate properties show: There was no significant ($p<0.05$) difference in total serum protein concentration in all groups when compared with the normal control group. The histological result shows that the oral administration of Cannabis sativa induced pronounced inflammation of the hepatic and renal tissue in group-3 when compared with the normal control group. In conclusion, the study showed that oraladministration of Cannabis sativa caused dose dependent hepatorenal toxicity.

Many young men, women, and even the elderly are addicted to Cannabis intake abuse despite its predictable toxicological consequences. In this paper, we studied the toxic effects of oral administration of methanol extract of Cannabis sativa seeds using a total of forty male Wistar Rats. Animals were randomized into five groups (n = 8 rats) of approximately equal weight. Group 1 received 100 mg/kg of the extract, group 2 received 200 mg/kg of the extract, group 3 received 300 mg/kg dosage of the extract, group 4 received 2 ml of olive oil and group 5 received distilled water for 14 days. Result for AST was significantly ($p<0.05$) higher in groups 2 (57.00 ± 13.00 IU/L) and 3 (59.33 ± 10.53 IU/L), compared with normal control group 5 (31.33 ± 1.53 IU/L). Significantly ($p<0.05$) higher serum ALT was observed in groups 2 (50.00 ± 12.52 IU/L) and 3 (56.33 ± 10.21 IU/L). Results for kidney function, shows significantly ($p<0.05$) higher serum urea concentration in group 3 (13.75 ± 2.41 mg/dl) compared with the control group (8.75 ± 1.60 mg/dl). Serum creatinine concentration was significantly ($p<0.05$) higher in group 2 (2.25 ± 1.18 mg/kg) and group 3 (2.38 ± 1.57 mg/kg) when compared with the control group (1.09 ± 0.13 mg/kg). Significantly ($p<0.05$) higher SOD values was obtained in group 3 (72.64 ± 5.90 mg/kg) when compared with normal control group (19.62 ± 4.26 mg/kg). In conclusion, the study showed that oral administration of Cannabis sativa caused dose-dependent hepato-renal toxicity.

Despite the lack of controlled studies demonstrating the efficacy of cannabis for Post-Traumatic Stress Disorder(PTSD), there appears to be an increasing trend to recommend this treatment without clear clinical guidelines for its use. The physician should have an appropriate knowledge of cannabis in order to select and manage those patients with PTSD who are likely to benefit from this treatment such as patients suffering from sleep disturbance as a result of hyperarousal symptoms.The physician should be sufficiently acquainted with the patient so as to minimise the possibility of non-medical use of the cannabis such as recreational use or diversion (giving or selling the cannabis to persons without a permit).The physician should also maintain contact with the patient's family. Patients should remain in medical follow up in order to monitor side effects and potential for abuse. Urine tests should be considered for those patients with a high index of suspicion for substance abuse. Use of cannabis should be avoided in persons with a pre-existing history of substance abuse over the past 12 months, severe personality disorder or psychotic illness. Use of cannabis should be avoided in pregnancy and in persons under the age of 25. Risk-benefit, ethical issues and proposed guidelines are presented for using cannabis in post-traumatic stress disorder.

This study provides evidence that the types of cannabis available in recreational and medical cannabis dispensaries might hold promise as an alternative treatment for PTSD. Randomized placebo-controlled trials are needed to assess safety and determine how different preparations of cannabis impact PTSD and functioning.