PO-082 - (23874) - ADMINISTRATION OF DELTA-9-TETRAHYDROCANNABINOL AFFECTS ADULT HIPPOCAMPAL NEUROTRANSMISSION IN FEMALES

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Delta-9-tetrahydrocannabinol (THC) is a psychoactive element of *Cannabis sativa*, whose extract has been used for medical, recreational and religious purposes. THC affects the human cannabinoid system through the activation of its receptors, CB1 and CB2. The CB1 receptor was found in several areas involved in mood, cognitive functions and motor control, including hippocampal formation (HF). THC's side effects are mainly due to its action on brain CB1 receptors, which is the most abundant in the brain.
We investigated the effects of THC in the HF of female Wistar rats to assess changes in its neurotransmission. Female Wister rats (n=20) were gonadectomized under anesthesia at 8 weeks old. Afterwards, they received estradiol benzoate (EB) and/or THC. Immunohistochemistry was performed to assess the expression of cholinergic receptor alpha 7 subunit (CHRNA7), vesicular acetylcholine transporter (VAChT), vesicular glutamate transporter (VGLUT), gamma-aminobutyric acid type A receptor (GABRA), glutamic acid decarboxylase (GAD), CB1 and estradiol receptor alpha (EBα).
In the HF, the expression of CHRNA7 was increased by EB and by THC in Oil groups but decreased by THC in EB groups. The same is true for VGLUT expression in DG and hilum and for GABRA expression in hilum. The expression of VAChT and CB1 is reduced by EB, while concomitant administration of THC increases it. GAD expression is reduced by EB administration in CA1, CA3 and DG.

Our results may help with decision-making regarding the prescription of low doses of THC as a therapeutical approach.

Palavras-chave : THC, hippocampal formation, female rats