TRIFLUOROMETHYL-DIPHENYLDISELENIDE AS TOOL TO TREAT RELAPSES SYMPTOMS RELATED TO AMPH-INDUCED DEPENDENCE IN RATS

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Introduction: Amphetamine (AMPH) abuse is a world concern and a serious public health problem. Repeated administration of high doses of AMPH induces neuropsychiatric consequences, including addiction, reward and psychosis, whose pharmacological treatment has shown limited effectiveness. The m-Trifluoromethyl-diphenyldiselenide (CF$_3$) has been documented as a promising pharmacological agent in different animal models related to oxidative damage. Objective: In this study, we examined the influence of (m-CF$_3$-PhSe)$_2$ on withdrawal and relapse symptoms following AMPH conditioning. Material and methods: Wistar rats received d,l-AMPH or saline in the conditioned place preference (CPP) paradigm for 8 days. Then, half of each initial (AMPH or saline) experimental group was treated with CF$_3$ or vehicle, resulting in four final groups: i) Saline/vehicle; ii) CF$_3$/saline; iii) AMPH/vehicle; and iv) AMPH/CF$_3$. After fourteen days of CF$_3$ treatment, animals were re-exposed to AMPH or vehicle in the CPP paradigm for three more days in order to assess drug relapse and memory/locomotor activity, performed 24h after AMPH re-exposure in the CPP and the Y maze, respectively. Results: The CF$_3$ treatment was able to prevent AMPH-induced relapse symptoms in rats. Behavioral observations in the Y maze task showed no significant changes. Conclusion: The current findings suggest that CF$_3$ might be considered a promising therapeutic tool for relapse treatment in AMPH-induced addiction.

Key words: Amphetamine, Relapse, Memory.