

ENDOCANNABINOID SYSTEM AND NICOTINE WITHDRAWAL SIGNS IN MICE

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The endocannabinoid system has been demonstrated to have an important role in the motivational and reinforcing effects of different drugs of abuse including nicotine, the active chemical responsible for smoking addiction. Furthermore, smokers frequently associate tobacco and cannabis use. With the aim to investigate the role of endocannabinoid system in symptoms and signs of nicotine abstinence, we studied the effects of two compounds, AM404 and AM251, in nicotine dependent mice. AM404 is an analog of the endogenous cannabinoid arachidonyl ethanolamide (AEA) which potentiates the activity of AEA by blocking its re-uptake into presynaptic neurons. AM251 is a CB1 receptor antagonist. Dependence has been induced in a group of mice (NM) by daily subcutaneous injection of nicotine (2 mg/kg four injections daily) for 15 days and assessed after nicotine withdrawal with a nicotine abstinence scale; control animals (M) received daily four subcutaneous injections (s.c) of saline for the same period. Abstinence was evaluated 24 hours after the last nicotine or saline injection. Two hours before the abstinence evaluation NM and M mice received a single injection of different doses of AM404 (0.5, 1 and 2 mg/kg, s.c) or AM251 (0.5, 1 and 2 mg/kg, s.c). The analysis of results did not show differences in the abstinence score of NM and M mice treated with the two drugs AM404 and AM251. Our data suggest that the role of endocannabinoid system could be not fundamental in the mechanisms underlying the nicotine abstinence signs.