Aspirin Effect On Tobacco Smoke Withdrawal-Induced Anxiety In Female Rats

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Abstract

Cigarette smoking has a negative effect on public health by causing massive health-related economic losses and countless mortality every year. This thesis examines the effect of whole-body cigarettes exposure and aspirin treatment on glutamate transporters including GLT-1, and xCT in the PFC and NAc brain regions. The behavioral consequences of whole-body cigarettes exposure were assessed using elevated plus maze, open field, dark and light box test, forced swimming test, and sucrose preference test. Five groups of female Sprague-Dawley rats; a control group, a cigarettes exposed group, a cigarette exposed group with 15mg/kg of aspirin treatment, a cigarettes exposed group with 30mg/kg of aspirin treatment, and aspirin 30mg/kg control group. Whole body cigarettes exposure was done for 2h/day, 5 days/week, for 42 days. Behavioral tests were conduct weekly 24h after exposure. During the last 11 days rats were given saline, tris-base, different doses of aspirin 45min before the exposure. Whole-body cigarettes exposure induced withdrawal anxiety-like behavior as well as affected glutamate transporter mRNA relative expression and protein expression in the PFC and the NAc. These effect were attenuated by 11 doses of aspirin 30mg/kg.

Keywords: Anxiety-like behavior, GLT-1, NAc, PFC, xCT.