

ABSTRACT

THE EFFECT OF CIGARETTE SMOKE EXTRACT (CSE) ON THE RISK OF NICOTINE ADDICTION IN MICE

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Tobacco dependence is a brain disorder caused by chronic exposure of addictive substance in cigarette and difficult to treat. Previous experimental studies in animals showed that cigarette smoke extract (CSE) could produce higher reinforcing effect comparison with nicotine alone. The CSE method is used to dissolve all compounds in cigarette smoke including minor alkaloid compounds. This study aim to asses CSE and pure nicotine exposures in other aspect of drug addiction using conditioned place preference (CPP) in mice.

Thirty male Balb/c mice (20-30 g) were divided into five groups. The initial preferences were determined using an biased design. In conditioning phase, each group received a subcutaneous injection of nicotine (0,1 mg/kg ; 0,5 mg/kg), and CSE (0,1 mg/kg ; 0,5 mg/kg) before being place in non-preference side (three days) alternate with saline (1 ml/kg) before being place in preference side (three days). Control group had saline injection in both paired sides. CPP score or rewarding effect was generate by counting the time in drug paired chamber.

This study showed that at dose 0,5 mg/kg nicotine, dose 0,1 mg/kg CSE, and 0,5 mg/kg CSE significantly induced rewarding effect but not at dose 0,1 mg/kg nicotine. In the periode of extinction training, only the nicotine 0,5 mg/kg group that showed significantly decrease time spent in drug paired chamber, not in another group. In reinstatement test, the nicotine 0,5 mg/kg and CSE 0,5 mg/kg groups showed significantly increase time spent in drug paired chamber.

Keyword : cigarette smoke extract, nicotine, addiction, conditioned place preference