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Wpływ antagonisty receptora kanabinoidowego SR 141716 na picie alkoholu przez szczury linii WHP

The effect of the cannabinoid receptor antagonist SR 141716 on voluntary ethanol intake in the WHP line of rats

Wanda Dyr, Janusz Ligięza, Wojciech Kostowski

Zakład Farmakologii i Fizjologii Układu Nerwowego
Instytut Psychiatrii i Neurologii, Warszawa

Abstract – *Introduction.* Δ^9-tetrahydrocannabinol (Δ^9THC) (belonging to cannabinoids) is extracted from *Cannabis sativa* and is the main active compound of marihuana and hashish. Δ^9THC is responsible for psychoactive action of both substances. Cannabinoids activate two types of receptors: CB1 and CB2. CB1 receptors are present in the brain and these receptors are responsible for psychoactive action of Δ^9THC.
The aim of our study is to assess the effect of CB1 receptor antagonist, SR 141716 known as the rimonabant, on voluntary intake of alcohol by alcohol-preferring line of rats (WHP – Warsaw High-Preferring). In addition, the consumption of water and food was measured.
Material and method. Six-months-old WHP rats from 34th generation were used. The selected line of WHP rats intake at least 5 g/kg/24 h ethanol in free-choice of condition (ethanol–water). During the experiment the animals were housed individually in cages, having a free choice between 10% ethanol solution and water in the graduated tubes (the accuracy of measure was 0.1 ml). Duration of every session was 4 hours. The ethanol and food were available between 9,00 and 13,00 hours (the experimental session), while the water was available *ad libitum*, round the clock. During the proper experiment, the rats were divided into four groups (n = 7–8). The first group was treated with vehiculum 0.1% Tween 40 (2 ml/kg), i.p., while remaining groups were injected with the CB1 receptor antagonist SR 141716 in the doses of 2.5, 5.0 and 10.0 mg/kg. Vehiculum and SR 141716 were administered 20 minut before the experimental session. The consumption of 10% ethanol solution, water and food were measured every 60 minut during 4-h experimental session.
Results. The present results have shown that acute treatment with SR 141716 in single doses of 2.5, 5.0, 10.0 mg/kg significantly reduced ethanol voluntary intake in WHP rats. The food intake was also diminished by 5.0 and 10.0 mg/kg of SR 141716. The dose of 2.5 mg/kg of SR 141716 significantly increased the water intake.
The present results have suggested that cannabinoid receptors may play significant role in the mechanism of drinking and preference of alcohol.

Key words: cannabinoids, CB1 and CB2 receptors, cannabinoid antagonist SR 141716, voluntary ethanol intake, WHP rats

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Artykuł jest zmodyfikowaną formą tekstu, który ukaże się w języku angielskim w periodyku *Alcohol*.