



Short communication

Fluoxetine-induced anxiety and nervousness

Małgorzata Zienowicz¹, Aleksandra Wiśłowska-Stanek¹,
Małgorzata Lehner², Ewa Taracha², Piotr Maciejak^{1,2}, Alicja Sobolewska²,
Janusz Szyndler¹, Danuta Turzyńska², Jerzy Walkowiak², Adam Płaźnik^{1,2}

¹Department of Experimental and Clinical Pharmacology, Medical University, Krakowskie Przedmieście 26/28,
PL 00-927 Warszawa, Poland

²Department of Neurochemistry, Institute of Psychiatry and Neurology, Sobieskiego 9, PL 02-957 Warszawa, Poland

Correspondence: Małgorzata Zienowicz, e-mail: gzienow@yahoo.it

Abstract:

The aim of this study was to model fluoxetine-induced increase in anxiety appearing in the initial phase of the treatment with this antidepressant drug. The effects of acute administration of fluoxetine given alone and co-administered with a subthreshold dose of pentetrazole (PTZ), a proconvulsant agent with well recognized anxiogenic properties, were examined in the open field test of neophobia in rats. It was found that a single injection of fluoxetine at the dose of 5 and 10 mg/kg did not change motor and exploratory behavior of rats. Furthermore, fluoxetine (10.0 mg/kg) co-administered with a subthreshold dose of PTZ (10.0 mg/kg) had a strong and selective inhibitory influence on rat exploratory behavior. Pharmacokinetic study did not show any changes in brain concentration of PTZ in fluoxetine-pretreated animals. The central mechanism of the reported effects might involve stimulation of 5-HT_{2C} receptors by fluoxetine in animals with PTZ-induced decrease in the threshold for emotional arousal. The present data describe a new animal model to study the central action of antidepressants reflecting dysphoric-like effects observed in the initial phase of the treatment.

Key words:

fluoxetine, pentetrazole, anxiety, open field, pharmacokinetics, rat
