

Basic Study on Marble-Burying Behavior as an Animal Model of Obsessive-Compulsive Disorder

Michihiko MATSUSHITA¹⁾, Nobuaki EGASHIRA²⁾, Satoko HARADA²⁾
Ryoko OKUNO²⁾, Hiroshi NAGAI¹⁾, Shozo CHIDORI¹⁾,
Kenichi MISHIMA²⁾, Katsunori IWASAKI²⁾, Michihiro FUJIWARA²⁾
and Ryoji NISHIMURA¹⁾

¹⁾ *Department of Psychiatry, Fukuoka University School of Medicine, Fukuoka University*

²⁾ *Department of Neuropharmacology, Faculty of Pharmaceutical Sciences, Fukuoka University*

Abstract : In this study, we examined the characteristics of marble-burying behavior, which has been considered an animal model of obsessive-compulsive disorder (OCD). ICR male mice exhibit a marble-burying behavior in comparison to ddY and DBA/2 male mice. However, we did not observe any significant differences between the ICR male mice and the ICR female mice regarding the marble-burying behavior. In addition, selective serotonin reuptake inhibitor (SSRI), such as fluvoxamine and paroxetine, which has been used to treat human OCD symptoms, inhibited such marble-burying behavior without affecting the locomotor activity in ICR male mice. In contrast, milnacipran had no effect on the marble-burying behavior in ICR male mice. These findings suggest that fluvoxamine and paroxetine exhibit an anti-OCD activity in clinical use, and that the serotonergic neuronal system may also be involved in the marble-burying behavior in mice.

Key words : Marble-burying behavior, Obsessive-compulsive disorder, Fluvoxamine, Paroxetine, Milnacipran