Effects of Cross-sex Hormones on Cognitive Abilities and the Psychological Characteristics of Gender Identity Disorder

Mariko TANAKA 1), Hideyuki NAWATA 1), Hiroshi NAGAI 1), Kentaro TANAKA 1), Hajime URASHIMA 1), 2), Rika YANO 1), Ryoji NISHIMURA 1)

1) Department of Psychiatry, Faculty of Medicine, Fukuoka University
2) Hajime Clinic

Abstract
Background: Gender identity disorder (GID) is characterized by a discrepancy between objective born sex and subjective gender identification, expressed as a feeling of being born in the wrong sex. Sex differences in certain cognitive abilities are well established. For example, men tend to excel in a targeting task, a mental rotation task, and a line orientation task, whereas women tend to excel in a verbal fluency task and a perceptual speed task. In an earlier study, they reported that 3 months of cross-sex hormone treatment influenced cognitive performance in GID patients. However, such an activating effect of cross-sex hormones could not be replicated in a later study.

Objectives: To examine whether cross-sex hormone treatments of GID patients would shift their cognitive abilities and psychological characteristics toward that of their subjective gender after 3-month therapy.

Method: FTM subjects were recruited from outpatients of the Fukuoka University Hospital from April 2007 to August 2009. We performed 4 sex-sensitive cognitive function tests (a mental rotation task, a targeting task, a verbal fluency task and the Pegboard task) and some psychological tests (Zung Self-rating Depression Scale: SDS, State-Trait Anxiety Inventory: STAI, Bem Sex Role Inventory: BSRI and State-Trait Anger Expression Inventory: STAXI) to them before and after 3 months of administration of testosterone.

Results: FTM patients showed an improvement in a mental rotation task and reduction of SDS score and STAI score after 3 months of hormonal treatment.

Conclusion: The administration of testosterone to FTM results in an improvement of their spatial abilities, depressed mood and anxiety.

Key words: gender identity disorder, cognitive abilities, psychological characteristics, hormonal therapy