PT614
Altered Serotonin transporter mRNA expression in the peripheral leukocytes of obsessive-compulsive disorder
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Abstract
Object: Selective serotonin reuptake inhibitors (SSRI) are well-established first-line pharmacological treatments for obsessive-compulsive disorder (OCD), and serotonin transporter (5-HTT) may be the target of antidepressants and involved in the pathophysiology of OCD. In this study, we determined mRNA expression levels of the 5-HTT gene in the peripheral blood leukocytes of patients with OCD and control subjects (n = 53, each). Methods: Total RNA was extracted from the peripheral leukocytes of whole blood samples using the PAX gene Blood RNA kit. Real-time quantitative reverse transcriptase polymerase chain reaction (qRT-PCR) analysis was performed with the ABI 7500 Fast Real-Time System. Expression differences between OCD patients and controls were tested using Student's t-test. All subjects signed written, informed consent forms that were approved by the institutional ethics committees of the University of Tokushima Graduate School. Results: The 5-HTT mRNA levels in patients were significantly higher than in healthy controls (P = 1.77 × 10–5). Conclusion: Our result may suggest that the elevated mRNA levels of 5-HTT might be implicated in the pathophysiology of OCD.

PT615
Altered White Matter Fronto-Striatal Connectivity in Obsessive-Compulsive Disorder
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Abstract
Objective: Obsessive-Compulsive disorder (OCD) is a chronic psychiatric disorder defined by recurrent thoughts, intrusive and distressing impulses, or images and ritualistic behavior; fronto-striatal pathways are hypothesized to be involved in the major pathophysiology of Obsessive-Compulsive Disorder. Although focal regional abnormalities of white matter integrity have been studied in populations with OCD, alterations in the structural connectivities among them, especially non-medicated patients, remain poorly understood.

Method: A total of 92 patients with non-mediated OCD and 92 matched healthy controls underwent diffusion-weighted (DWI) and T1-weighted magnetic resonance imaging. Bilateral orbito-frontal cortex (OFC) and two subcortical ROIs (caudate and putamen) were extracted from their own T1 image using FreeSurfer. Using AFNI mini-probabilistic tractography on the DWI data with the extracted ROIs, connectivities between OFC and each subcortical region were calculated.

Results: RD value between the right OFC and putamen was significantly increased in OCD compared to that of healthy controls. No significant group differences in FA or MD value.

Conclusion: The current study suggested evidence providing that individuals with OCD show demyelination in orbitofrontal-putamen white matter tract compared with controls. The results are consistent with previous research on abnormal fronto-striatal function and demyelination in the frontal lobe in OCD. Further study is needed to explore tracts from dorsal frontal regions to the dorsal striatum, and the relationship between fronto-striatal structural connectivity and clinical/neuropsychological function.

PT617
Plasma oxytocin levels in OCD patients
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Abstract
Objective: Given the paucity of information on the possible role of oxytocin (OT) in the pathophysiology of obsessive-compulsive disorder (OCD), our study aimed at evaluating plasma OT levels in a group of 44 OCD outpatients of both sexes, as compared with healthy control subjects.

Methods: Diagnosis was assessed according to DSM-IV-TR criteria, while OCD severity was measured by the Y-BOCS rating scale. All patients were drug-free and not depressed. The romantic attachment was assessed by means of the Italian version of the “Experiences in Close Relationships” questionnaire (ECR). Plasma OT levels were evaluated by means of a standard RIA kit.

Results: The OT levels (mean ± SD, pg/ml) were significantly higher in the patients than in the control subjects (4.30 ± 1.36 vs 2.55 ± 2.18, p < 0.001). The comparison of the ECR anxiety and avoidance scales showed that their mean scores were significantly higher in the patients than in control subjects (4.4 ± 0.2 vs 3.1 ± 0.3, p > 0.01, and 2.9 ± 0.2 vs 2.0 ± 0.3, p < 0.01, respectively).

Positive correlations were detected between OT levels and the fearful-avoidant (r= 0.352, p = 0.054) and the dismissing (r=0.379, p= 0.044), but only in male patients.

Conclusions: The main findings of our study showed that OT levels were increased in OCD patients, as compared with healthy subjects. In addition, we observed higher ECR scale scores in the patients than in healthy subjects. Positive relationships were detected between OT levels and the fearful-avoidant and dismissing styles of romantic attachments, but only in male OCD patients. Although it is difficult to make any firm hypothesis, we would suggest with cautions that OT might regulate different the romantic attachment in the two sexes, at least in OCD patients. Taken together, these findings suggest that OT may play a role in OCD pathophysiology and also in romantic attachment of patients with gender specificity.

PT618
Impaired learning and memory in adolescent obsessive-compulsive disorder
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