

Symposium | Schizophrenia : [Symposium 75] Current Topic of Biological Psychiatry: Synapse, Glia and Inflammation

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[Symposium 75] Current Topic of Biological Psychiatry: Synapse, Glia and Inflammation

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[SY-75-02] Development of biomarkers of hikikomori focusing on inflammation and microglia

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Objective: Hikikomori, a severe form of social withdrawal now listed in the Diagnostic and Statistical Manual of Mental Disorders, Text Revision (DSM-5-TR), is a recognized global issue that frequently co-occurs with various psychiatric disorders. Our previous studies have identified key psychological traits, such as high suicidal ideation and diminished social connection. Despite these insights, the biological basis of hikikomori remains largely unclear, and biomarker studies are limited. This study aims to identify the biological characteristics of hikikomori by investigating biomarkers using both plasma analysis and a blood-derived cellular model. **Methods:** Participants were recruited from the Mood Disorder/Hikikomori Clinic at Kyushu University Hospital and were diagnosed with hikikomori if they met the criterion of spending almost all their time at home for more than six months. Following informed consent, we collected peripheral blood samples and detailed clinical data. These samples were utilized for acquiring biochemical data and obtaining peripheral blood mononuclear cells. These cells were subsequently differentiated into induced microglia-like (iMG) cells, a patient-derived cellular model used to analyze microglial function.

Results: Our analyses revealed a distinct psychobiological profile for patients with hikikomori. Psychologically, they exhibited not only high suicidal ideation but also pronounced loneliness, anhedonia, and psychomotor retardation. Biochemically, patients had significantly higher levels of high-sensitivity C-reactive protein (hsCRP) and significantly lower levels of total bilirubin. Furthermore, the analysis of iMG cells revealed different gene expression phenotypes in hikikomori patients. **Discussion:** Our findings suggest that hikikomori has a distinct pathophysiological background involving inflammation and increased susceptibility to oxidative stress as indicated by elevated hsCRP levels, reduced bilirubin levels, and iMG gene phenotypes. In psychiatric practice, where objective data is scarce, this combined methodology offers a powerful strategy for developing objective biomarkers and identifying novel therapeutic targets for this complex condition.