Symposium

2025年9月28日(日) 14:50 ~ 16:20 Session Room 6 (Conference Room B)

[Symposium 105] Progress in biological signature and care for youth mental health crisis

Moderator: Akitoyo Hishimoto (Kobe University Graduate School of Medicine)

[SY-105-03] Visualization of biological basis underlying adverse child experience by quantifying intra-brain AMPA receptor densities

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キーワード：Adverse Child Experience、Neuroimaging、AMPA receptor

Many studies have shown that adverse experiences in childhood (such as abuse, poverty, and domestic discord) have a profound impact on the brain throughout life. These studies include approaches to brain structure and brain function, and it is known that adverse experiences induce physical and functional abnormalities. Such changes are suggested to cause impaired memory and learning abilities, as well as difficulties in emotional regulation, while also being considered a contributing factor to various mental disorders such as depression, anxiety disorders, and PTSD. On the other hand, there are cases where individuals who have experienced similar adversities do not develop such disorders, and evidence regarding such resilience is scarce. To address these issues, we are conducting research to advance the development and social implementation of “biological markers that visualize the risk of abuse and suicide in children and young people, as well as their recovery.” Specifically, we are using human in vivo AMPA receptor visualization technology (a positron emission tomography tracer) to clarify the biological mechanisms that define stress and resilience resulting from adverse experiences (jRCTs031230715). To date, we have performed AMPA-PET imaging on participants aged 20–34 with a history of childhood abuse (both those with and without a history of suicidal behavior) to measure AMPA receptor density in the brain. At this symposium, we aim to present such concrete examples and discuss the biological foundations of adverse experiences and the evidence for resilience.