

O-50 - A GLUTAMATE-MODULATING DRUG, RILUZOLE, IS ONE OF THE CANDIDATE DRUGS FOR NEW GENERATION ANTIDEPRESSANTS AND/OR ANXIOLYTICS

A.Saitoh¹, M.Yamada¹, M.Inagaki^{1,2}, M.Yamada¹

¹Neuropsychopharmacology, ²Center for Suicide Prevention, National Institute of Mental Health, National Center of Neurology and Psychiatry, Kodaira, Japan

Growing evidence indicated that the glutamatergic neurotransmitter system is central to the neurobiology and treatment of mood and anxiety disorders. Riluzole, a drug currently used to slow the progression of amyotrophic lateral sclerosis, is one of the candidate drugs that modulate glutamatergic neurotransmission in the central nervous system. Recently, several open-label clinical trials have suggested that riluzole reduces symptoms of treatment-resistant major depression, obsessive-compulsive disorder and generalized anxiety disorder. Previously, we reported that riluzole rapidly attenuates the hyperemotional responses found in the olfactory bulbectomized rats. This animal model exhibits hyperemotional behavior that may mimic anxiety, aggression and irritability found in depressed patients, suggesting the possible use of riluzole in combating the symptoms of anxiety and depression. Interestingly, we first found that a single riluzole treatment had rapid anti-hyperemotional effects in the rats. In addition, we demonstrated that single riluzole treatment significantly decreased extracellular glutamate levels in medial prefrontal cortex of the rats by *in vivo* microdialysis examination. Our results propose a hypothesis that riluzole rapidly improve symptoms in depressed patients, as a non-monoamine-based antidepressant. In conclusion, our results suggest that a glutamate-modulating drug, riluzole, is one of the candidate drugs for new generation antidepressants and/or anxiolytics.