UNIVERSITÀ DEGLI STUDI DI PADOVA

PROJECT

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1) Project title
…. Improving treatment response in major depressive disorder
2)Abstract (max 500 words)
… Major depressive disorder (MDD) is a common psychiatric disorder and a major public health concern, affecting more than 300 million people all over the world. In 2015, the World Health Organization ranked depression as the single largest contributor to global disability. Moreover, MDD is an heterogenous and multifaceted syndrome, where depressed individuals can experience symptoms from different domains: i.e. cognitive symptoms, somatic symptoms, sleep complaints, and suicidal thoughts. Several pharmacological treatments are available for MDD, including Selective Serotonin Reuptake Inhibitors, Serotonin Noradrenalin Reuptake Inhibitors, Tricyclic Antidepressants, the recent NMDA receptor antagonist Esketamine, and many others. Despite the variety of options, a substantial proportion of patients do not respond to the initial antidepressant treatment, being subsequently treated with a second antidepressant. Currently, there is a lack of objective parameters to assist clinicians in selecting the most appropriate antidepressant. Consequently, the selection process remains largely empirical, leading to a trial-and-error approach which often exacerbates distress in depressed individuals. From a biological perspective, MDD is a multifaceted disorder with many aspects that remain unclear and warrant further investigation. Growing evidence supports the involvement of neuroinflammation and its relationship with the metabolism of tryptophan along the serotonin and kynurenine pathways in the neurobiology and psychopharmacology of MDD. The objective of this Ph.D. project is to better characterize clinical and biohumoral profiles of MDD patients, and to establish if specific profiles/biomarkers related to neuroinflammation and/or the metabolism of tryptophan can be predictive of a better response to an antidepressant treatment. The interplay between neuroinflammation and tryptophan metabolism could hold the key to identifying novel therapeutic targets and biomarkers of disease or treatment response. These insights aim to assist clinicians in selecting individualized antidepressant treatments, thus reducing non-response rates and improving treatment outcomes for MDD patients. Overall, this project will advance the field of psychopharmacology of MDD and promote the principles of personalized or precision psychiatry.