EDITORIAL

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THE EXPANDING FRONTIERS OF NEUROPHARMACOLOGY IN AN ERA OF GLOBAL NEUROLOGICAL DISEASES

Neurological and psychiatric disorders are still the leading outbreaks and sources of economic and health problems all over the world, even to the point of being more common and causing more disability than chronic diseases. The need for new innovative medications is urgent since the problem is getting worse and the new medication should be based on a totally different approach than the current one that is focused on the neurotransmitters only. The neuropharmacology domain has lately experienced remarkable advancements that are greater than before and that have molecular neuroscience, neuroimmune signalling, receptor biology, and precision drug delivery technologies at their core. New treatments are now aiming at synaptic plasticity, neuroinflammation, mitochondrial dysfunction, and burning out neuronal network activity, these mechanisms are being increasingly recognized as the threatening basis of neurodegeneration and psychiatric disorders. In the same breath, the advancements in the blood-brain barrier (BBB) biology are great tools for the creation of elaborate delivery systems such as ligand-targeted nanoparticles, exosomes, intranasal carriers, and BBB-modulating peptides. It is through these advances that drug development in the central nervous system is becoming more efficient and more focused on the patient than ever before. One of the major transformations in the field of neuropharmacology is the change in viewpoint from the old chemical-centric model to the new holistic model that considers the complete system. The combination of electrophysiological mapping, functional neuroimaging, multi-omics technologies, and computational modelling allows the researchers to not only view the drug effects over the neural circuits in the real-time but also to obtain more detailed information about them. In addition, the elucidation of various mechanisms of drug action on the immune system, gut-brain axis, and glia has greatly enlarged the areas for therapy, moving them well beyond the traditional neuron-centric models. With the launch of this new issue by IRJPS, we invite submissions of high quality that investigate novel CNS molecular targets, advanced drug delivery systems, neuroprotective agents, and translational therapeutic models. It is the interdisciplinary research that we particularly encourage, which connects foundational discoveries with clinical practices, research that might eventually lead to earlier diagnosis, better patient outcomes, and enhanced quality of life for individuals affected by neurological disorders.

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