Neuropsychiatry and substances effects on brain and behavior

Substance effects on the brain are often linked to substance use disorder (SUD), a maladaptive pattern of conditions in which alcohol and drug abuse lead to clinically and functionally significant impairment or distress. SUD poses a heavy societal burden, endangering the health and well-being of individuals and their families, and presenting daunting challenges in prevention and treatment. To further complicate matters, SUD frequently co-occurs with other neuropsychiatric conditions. These altogether generate challenges for precision medicine as the drug’s effects on brain and behavior are complex. Furthermore, our understanding of the neurobiology of drug addiction is limited. Fortunately, today’s new experimental tools (e.g., 7-Tesla magnetic resonance imaging or omics technologies) bring research into new exciting avenues by which interdisciplinary networks can be formed to better understand the addictive brain and its behavioral manifestations.

In this context, the goal of this call is to provide readers with a wide overview of current and relevant findings regarding the impact of addictive drugs on the brain and behavior as well as spark new collaborations between clinicians and researchers with expertise in drug addiction to strengthen the knowledge in this field and help combat the consequences of mental illness and substance misuse. Submissions of manuscripts addressing novel molecular, cellular, behavioral, animal, human, basic, or clinical strategies to explore this topic with the inclusion of neuroimaging, deep brain stimulation, genomics or other relevant techniques are welcome. In addition, to facilitate precision medicine, investigations with transnational potential such as longitudinal studies with innovative methods to guide the development of novel biomarkers for treatment decision are particularly encouraged. We specifically welcome contributions from the behavioral and brain sciences that explore the neuroscientific mechanisms that modulate individual responses to drugs and support positive treatment outcomes. The special issue encompasses all types of substance use disorders (e.g., alcohol, cannabis, stimulants, opioids, nicotine).

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