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Correlation link between immune system abnormalities and cannabinoid receptors 2 (CB2) signal dysregulation in autism: novel approach in autism research and treatment

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Various types of immune system abnormalities were detected in children with autism, such as higher expression of plasma pro-inflammatory cytokines and increased levels of antibodies against brain, central nervous system and maternal proteins. These findings confirm the role of endocannabinoid (EC) system in orchestrating the peripheral and central neuro-immunologically mediated effects in autism. Current pharmacological approaches for autism are directed at symptoms, rather than the underlying pathogenesis. The newest studies suggest that pharmacological modulation of the EC system could represent a novel approach for autism treatment. Among the potential EC system targets, modulation of cannabinoid 2 (CB2) receptor signalling, could offer a promising therapeutic target with minimal psychotropic effects. In the first part of the lecture, history of cannabis use for medicinal purposes, along with details regarding discovery, and functional role of EC system are described. In a second part of the lecture,

special attention will be given to CB2 receptor, its expression pattern in human and animal tissues, and the signalling pathways induced by its activation. The role of CB2 receptors in neurodevelopment and immunomodulation will be considered in the third part. The last part of the presentation will review current pharmacological strategies in targeting CB2 receptors in patients with autism.

Speaker Biography

Zoran M Pavlovic MD, got his medical degree at the age of 25, completed his residency and obtained board certification in Psychiatry, from School of Medicine in Belgrade, Serbia. He has published numerous articles in the US (Journal of Neuropsychiatry and Clinical Neurosciences, Primary Care Companion to the Journal of Clinical Psychiatry, Journal of Clinical Psychopharmacology) and European neuropsychopharmacology journals (International Journal of Neuropsychopharmacology and European Psychiatry). He serves as National Advisor at the European College of Neuropsychopharmacology (ECNP) and is a Member of the International College of Neuropsychopharmacology (CINP). He is currently working as Medical Director Psychiatry with PRA International in Germany.

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