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New targets for treatment and diagnosis of schizophrenia spectrum disorders

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S chizophrenia is still, accepted as the most serious psychiatric disorder. It is an important neurodevelopmental disorder with approximately 1% incidence in population. Neurodevelopmental disorder causes a complex situation by affecting almost all brain functions such as "perception", "cognitive functions", "consideration", "emotion". Also, genetic, environmental and social factors contribute to neurodevelopmental problem in schizophrenia. Selective dopamine D3 receptor antagonists, specific agonists for metabotrophic and NMDA receptors of glutamatergic system, nicotinic alpha 7 receptor agonists which have shown their activity in preclinical and limited number of clinical studies may be new options in schizophrenia treatment. In addition, some recent studies suggest that there is an importance of the relationship between alcohol and substance addiction and schizophrenia. There is also some preclinical data indicating that agmatine, which is a biologically active agent produced after decarboxylation of arginine, could become interesting and important targets for the etiopathogenezis of schizophrenia spectrum disorders and in development of new drugs. In animal models, constituting schizophrenia like symptoms by spermine and spermidine which are final products of arginine metabolism pathway, strongly supports the hypothesis of agmatine can be a new target for schizophrenia. Results from our laboratory also supported this hypothesis. In our study, by using prepulse inhibition of startle reflex, (PPI) method, agmatine reflects a similar response like apomorphine to form a model of schizophrenia and when given consequently strengthen apomorphine's effects. Because PPI disruption is due to other central disorders like bipolar disorder, panic disoder and Tourette syndrome, agmatin may also be a new target for developing new drugs in treatment of these disorders.

Biography

Tayfun Uzbay, male, medical pharmacologist, graduated from pharmacy department, Istanbul University in 1982. He took Ph.D. degree at Gulhane Military Medical Academy (GATA), Faculty of Medicine, Department of Medical Paharmacology in 1992. He worked for GATA, department of medical pharmacology as a research assistant professor and associate professor between 1992 and 2002. In 1997, he founded Psychopharmacology Research Unit in GATA research center and became the chairman of this unit. In 2003, he became professor. Since 2003, he is the director of department of medical pharmacology at GATA. From 1997 to 1998, he worked in University of North Texas in USA as a visiting scientist for one year. In 1999, he also worked as a visiting scientist in University of Cagliari, Department of Toxicology in Italy. In addition to the Turkish Pharmacist Association, Academy of Pharmacy Science prize, many awards to him was for the science and technology success. He was alsoa warded with popular science prize in health science are in 2008. His research studies have been focused on neurobiological basement of the relationship between substance dependence and schizophrenia. In recent year, he and colleagues discovered and patented the role of agmatine in schizophrenia spectrum disorders in animal model. He published more than a hundred international full papers and these papers have been cited more than 1200.