AddictionTherapy-2013

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Addiction Research & Therapy

July 22-24, 2013 Las Vegas, USA

Using a novel dynamic molecular imaging technique to study addiction

Rajendra Badgaiyan
University of Buffalo, USA

Abstract

Evidence from clinical, animal, and neuroimaging experiments suggest that the addictive behavior is associated with dysregulated dopamine neurotransmission. Precise role of dopamine in establishment and maintenance of addiction however is unclear. In this context animal studies on the brain reward system and associative memory processing provide a novel insight. It was shown that both processing involve dopamine neurotransmission and are disrupted in addiction. These findings indicate that dysregulated dopamine neurotransmission alters the brain processing of not only the reward system but also that of the memory of association between an addictive substance and reward. These alterations lead to maladaptive motivational behavior leading to addiction. This concept however is based mostly on the data obtained in laboratory animals because of the paucity of human data. Due to lack of a reliable technique to study neurotransmission in the live human brain, it has been a problem to study the role of dopamine in human volunteers. A recently developed dynamic molecular imaging technique however, provides an opportunity to study these concepts in human volunteers because the technique allows detection, mapping and measurement of dopamine released in the live human brain during task performance.

Biography

Dr. Rajendra Badgaiyan completed his MD and MA (Psychology) in India and finished postdoctoral training at University of Oregon, University of Pittsburgh and Harvard University. He completed residency training in Psychiatry at Harvard and currently directs the outpatient addiction clinic and Neuroimaging Laboratoryat SUNY Buffalo. He is a member of the editorial boards of 12 journals and Chief/executive editor of 3 journals. Badgaiyan received several awards for research and he is recognized as the original developer of single scan dynamic molecular imaging technique that allows detection, mapping and measurement of dopamine released during task performance in the live human brain.

rbrb@buffalo.edu