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&  
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### **Amyloid hypothesis and drug development for Alzheimer's disorder: A critical review**

**A**lzheimer's Disease (AD) is a devastating progressive neurodegenerative disorder resulting from pathological changes in the brain. AD manifests by a broad range of symptoms affecting memory, concentration, volition, and leading to significant impairment in all activities of daily living. The currently approved pharmacological treatments have only limited efficacy and provide mostly symptomatic benefits as they do not specifically target the underlying pathology of AD. AD pathology is characterized by the accumulation of beta-amyloid protein ( $A\beta$ ), tau-protein, and associated inflammatory response. The amyloid cascade hypothesis has been the basis for developing an entire new class of disease-modifying therapeutics. In the past 20 years, there have been more than 100 attempts to develop new pharmacological agents, including a wide range of therapeutics targeting different components of the amyloid cascade. Based on their role in the amyloid cascade and the primary mechanisms of action, these new therapies could be divided into three subclasses: a) aimed at reducing production of  $A\beta$ ; b) aimed at promoting  $A\beta$  clearance; and c) aimed at reducing  $A\beta$  aggregation. This session will provide a critical overview of the amyloid cascade hypothesis in AD and discuss the future directions in drug development for AD.

### **Biography**

Oleg V Tcheremissine, MD, is a Professor of Psychiatry, Department of Psychiatry, Atrium Health. He is a board-certified Psychiatrist with 30 years of medical and more than 25 years of research experience in human behavioral and applied clinical psychopharmacology. He has served as a Principal Investigator for numerous pre-clinical and Phase II-IV clinical trials in a range of neuropsychiatric indications. More recently, his research has been focused on developing new insights into neurodegenerative diseases with a primary emphasis on advancing pharmacotherapy of Alzheimer's Disorder and other cognitive disorders. He has successfully combined his research interests with his teaching, clinical, and administrative responsibilities while focusing on eliminating external and internal barriers to novel and innovative treatments with the overall goal of reducing health disparities, improving access to care and increasing the generalizability of clinical trials results.

### **Notes:**