Underlying mechanisms of reproductive hormone effects on cognition and Alzheimer's disease

Gemma Casadesus
Case Western Reserve University, USA

Accumulating studies affirm the effects of endocrine dysfunction on cognitive decline and neurodegenerative diseases. Importantly, age-related changes in reproductive hormone levels are a well-known risk factor for the development of cognitive dysfunction and Alzheimer's Disease (AD). We and others have shown an important contribution of gonadotropins in this process. Nevertheless, while down regulation of serum gonadotropins levels is able to rescue cognitive function in AD and menopause models, the exact mechanism through which gonadotropins regulate these aspects remains unknown. Here we show evidence of the mechanisms underlying the beneficial actions of down regulation of peripheral gonadotropins on cognition, which are dependent on the regulation of the luteinizing hormone receptor and downstream signaling cascades associated with synaptic plasticity and important in AD pathogenesis.

Biography

Gemma Casadesus earned her Ph.D. in Physiological Psychology from Tufts University studying the effects of high antioxidant foods on cognitive aging and neuroplasticity at the Jean Meyer's USDA- Human Nutrition Research Center on Aging. Her post-doctoral training at Case Western Reserve University focused on studying oxidative stress and hormonal influences on the development of AD. In 2007, Casadesus became a faculty member of the Department of Neurosciences and Director of the CWRU Rodent Behavior. The focus of Casadesus research is to investigate the pathological mechanism(s) underlying memory loss and dysfunction during normal aging and neurodegenerative diseases such as Alzheimer's disease (AD). Current projects are directed towards the study of includes the role of hormonal changes on memory dysfunction after menopause and development of AD with specific emphasis on gonadotropins and therapeutic strategies targeting these hormones and Determining the interaction and chronology appearance of several early makers associated with the development and progression of AD using a mouse model of accelerated aging. Casadesus has authored over 75 peer-reviewed manuscripts, chapters and commentaries and is a member of IBNS and SFN and AGE.

gxc40@case.edu

J Alzheimers Dis Parkinsonism 2013
ISSN: 2161-0460, JADP an open access journal

PsychoAAD-2013
September 30-October 01, 2013

Volume 3 Issue 5

Page 122