



Diabetes mellitus as a risk factor for Dementias

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ABSTRACT

Dementia is a complex disorder of multifactorial etiology that results in alterations in health status changes in lifestyle. It is important to identify the risk factors at an early age, to prevent disease. Diabetes mellitus type 2 is the most common type of diabetes in which autoimmune antibodies appear to be the cause. In this type of diabetes, insulin resistance is observed, which limits the ability to respond to hormones, both endogenous and exogenous. In some cases, insulin resistance is a result of a lower number or a mutation of insulin receptors. These receptors are expressed in the central nervous system. When there is insulin resistance as in the case of diabetes mellitus type 2 or there is no insulin production as in the case of diabetes mellitus type 1, the pathways involved in the neuronal function are not activated. Therefore, some proteins involved in neuronal death such as tau, amyloid- β , and α -synuclein are activated. These proteins will form intracellular and extracellular deposits, which are histopathological features of dementias such as Alzheimer's Disease and Parkinson Disease. Neuronal death caused by the lack of insulin is one of the reasons why diabetes mellitus is a risk factor for dementia.

BIOGRAPHY

Alejandra Martínez has her expertise in molecular processes of tau protein in dementias. She starts her scientist formation since she was studying chemistry at UNAM in Mexico. After that, she continues her formation in one of the most prestigious investigation center in México, CINVESTAV, obtaining a PhD in cellular and molecular neurobiology. She is currently a professor at a prestigious university and collaborates with the National Brain Bank at CINVESTAV. The goal of her research is to find therapeutic targets for Alzheimer's disease and other dementias. She also currently interested in studying the molecular mechanisms involved in mental disorders such as autism, attention deficit disorder, depression and stress.

PUBLICATION

1. Ponce-Lopez (2019) Diabetes mellitus and amyloid beta protein pathology in dementia. *Amyloidosis*, InTech.
2. Ferrer (2018) Aging related tau astrogliaopathy (ARTAG): not only tau phosphorylation in astrocytes. *Brain Pathol.* 18(6):965-985
3. Paz Zarza (2018) *Pseudomonas aeruginosa*: pathogenicity and antimicrobial resistance in urinary tract infection. *Rev. chil. Invecol.* 36(2):180-189
4. Martínez-Maldonado (2016) Incidental Corticobasal Degeneration. *Neuropathol Appl Neurobiol.* 42(7):659-663
5. Luna-Muñoz (2014) Accumulation of abnormally processed tau protein in neuronal cells as a biomarker for dementia. *Neurochemistry*, InTech.