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COGNITIVE DYSFUNCTION IN TYPE II DIABETES MELLITUS: IS ALZHEIMER'S DISEASE TYPE 3 DIABETES?

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Abstract

Type II Diabetes Mellitus (Type 2 DM) is a modern-day epidemic. While the deleterious effects of Diabetes Mellitus on the retinal, renal, cardiovascular and peripheral nervous systems are widely acknowledged, less attention has been given to the effects of diabetes on neurocognitive functions. Recent literature has, however, shown that both type 1 and type 2 diabetes mellitus have been associated with reduced performance on multiple neuropsychological domains and with structural abnormalities on neuroimaging. With an aging population and the growing epidemic of diabetes, complications related to Central Nervous System functioning and neurocognition may prove challenging for future public health implications. Although the exact pathophysiology of neurocognitive dysfunction in diabetes is not completely understood, hyperglycemia, vascular disease and insulin resistance seem to play significant roles. Furthermore, evidence from recent studies has indicated a close pathophysiological relationship between Alzheimer's Disease (AD) and Type 2 Diabetes Mellitus (DM2). This includes factors such as impaired insulin signaling, insulin resistance, advanced protein glycation and oxidative stress Moreover, T2DM and AD patients have similar amyloid beta deposits both in the pancreas and the brain. As a result, several researchers have proposed AD to be a Type 3 DM. In this presentation we will provide an overview of the recent neuropsychological and neuroimaging literature related to this topic.

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