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Is brain diabetes the new type 3 diabetes?

Diabetes is a metabolic disorder characterized by increased blood glucose (hyperglycemia) due to total or partial deficiency of insulin (a hormone produced by the pancreas) or its malfunction. Classification of diabetes has been changed over time, in the past simply type 1 and type 2, but now we discuss how to redefine all criteria. Classification and Diagnosis of Diabetes is still in progress. Genetics, Epigenetics, Environmental factors do not only influence the incidence of type 1 diabetes, but also type 2 diabetes. Diabetes is especially fearsome for long-term chronic complications such as chronic hyperglycemia and for damage and dysfunction and failure of various organs: heart, arteries, kidneys, eyes, Central Nervous System (CNS) and Peripheral Nervous System (SNP). In regards to complications of the CNS, many studies have now found a relationship between both type 1 and type 2 diabetes and brain dysfunction and dementia. In type 2 diabetes, they can be decreased or increased levels of insulin in the brain, along with the insulin receptor desensitization. Long before antipsychotic drugs became standard therapy, studies showed abnormal glucose tolerance in patients with early dementia. Repeated hyper- and/or hypoglycemia or basal blood glucose values barely over the norme (hyper), without arriving to the diagnostic values for diabetes (IFG), have been linked to cognitive deficits and altered brain anatomy and connectivity. In diabetic patients, however, a clear correlation of glycemia with the memory deficit has been found. It was also observed that patients with diabetes who develop dementia have a unique form of the disease, although similar to vascular dementia. Glucose and insulin are therefore important moderators of cognitive function. Is Alzheimer's a Form of Diabetes? Now, scientists report new evidence linking insulin to a disorder of the brain, the correlation is so strong that some researchers are calling Alzheimer's disease Type 3 Diabetes. Some symptoms of 'senile' Dementia may be defeated by a specific insulin spray administered intranasally. New oral therapies, a combination of antidiabetic drugs such as liraglutide and glitazones, are now being tested in dementia and Alzheimer's disease. Finally, Alzheimer's disease and diabetes are united at the epidemiological, genetic and molecular levels. Both diseases supposedly would begin years before the start of their clinical symptoms. The chronic insulin resistance appears to negatively affect cognition and increase the risk of dementia. Insulin has important, recently recognized effects on the brain. It has indeed a beneficial and protective role in cognitive function. These chronic conditions are susceptible to 'targeted' intervention with 'antidiabetic' drugs as well as good control of the disease with an appropriate lifestyle. Intranasal insulin and/or incretins may represent an important therapeutic tool for preventing or treating cognitive decline. In conclusion, further studies are needed to confirm the results found and help the effective prevention of brain diabetes.

Biography

Marco Songini is the Director Center for the Treatment of Complications of Diabetes at San Michele Hospital Cagliari, Sardinia, Italy. Doctor Marco Songini has published over 161 papers on the subject of atherosclerosis and epidemiology of Diabetes. He is a recognized expert in the etiopathology and epidemiology of type 1 diabetes and diabetes in general. After obtaining a degree in Medicine from the University of Cagliari in 1977, he obtained his specialization in Diabetology, University of Turin (1980), his specialization in Endocrinology, University of Rome (1984) and specialization in Dietology, University of Cagliari (1988). Dr. Songini has always been dedicated to the research of the etiopathogenic causes of diabetes. About this, he has contributed to the research in several studies on diabetes such as EURODIAB, EURODIAB PCS, TRIGR, Conscript, Studies, Migrant Studies, The Newborns Sardinia Insulin-Dependent Diabetes Mellitus Study, The Sardinia Schoolchildren Insulin-Dependent Diabetes Mellitus Study, Environmental Factor Study and the Ecological/Environmental/Veterinarian Variables Type 1 Diabetes Mellitus Study

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