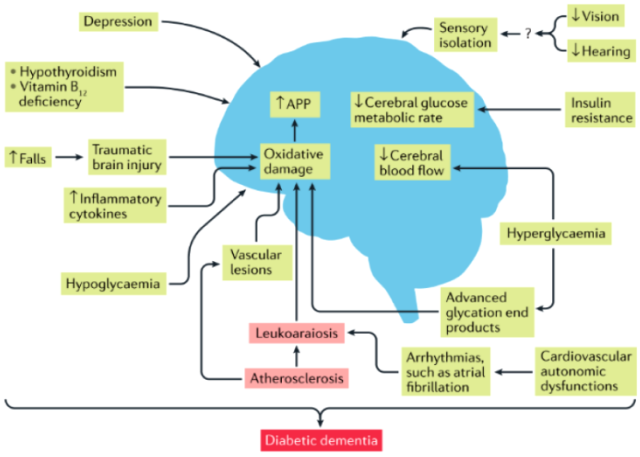
Does treating diabetes help prevent dementia and other associated CNS diseases as demonstrated for classic diabetic chronic complications?

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Abstract

Background: Alzheimer and diabetes are similar at epidemiological, and genetic level both beginning years before the onset of the respective clinical symptoms. In diabetes repeated hyper-and/or hypoglycemia have been linked to cognitive deficits and a greater brain connectivity was observed in children with Type 1 diabetes compared to non diabetic. Different etiopathogenetic mechanisms are shared between diabetes and cognitive deficits (figure). Insulin resistance influences positively life expectancy as a mean of coping with food scarcity, but negatively regarding cognition, increasing the risk of dementia. Some studies show that schizophrenia, autistic disorders and depression, confer a high endogenous risk for diabetes independently from the use of antipsychotic drugs. **Methods:** In our center we evaluated depression/anxiety in 132 type 2 diabetic patients at a mean of 7.2 months from diagnosis, with clinical psychological interview and compilation of HRSA, HDS and MADRS questionnaires. **Findings:** We found 37% positive for depression and 31% for anxiety, compared to what declared by the patients (17% and 19% respectively). Female presented significantly higher depressive and anxious symptoms compared to males (52 vs 30% $\chi 2 = 4.07$and 44 vs 21% $\chi 2 = 4.76$ respectively). We also found that the conditions of depression preexisting to the diagnosis of diabetes was higher (22%) than described in non-diabetic subjects (4-8%). **Conclusion:** The discrepancy between what found and what declared by patients indicates the presence of a low level of awareness of patients regarding their suffering condition. It is plausible to think at an increase of both conditions from the pre-diagnosis to the post-diagnosis, but the pre-existing condition of depression at a higher prevalence than in the non-diabetic population, confirms that depression could be not only a consequence of diabetes, but also a risk factor for developing diabetes. Important therapeutic tool to prevent or treat cognitive decline in diabetes will be discussed.

Figure from ref 6.



Recent Publications (minimum 5)

1- Crane PK, Walker R, Larson EB., Glucose levels and risk of dementia;N Engl J Med. 2013 Nov 7;369(19):1863

2- Jeannine S Skinner,Amy Morgan,Hector Hernandez-Saucedoet al ; Associations between Markers of Glucose and Insulin Function and Cognitive Function in Healthy African American Elders, J Gerontol Geriatr Res .2015 Aug;4(4):232

3- Manish Saggar,Eva Tsalikian,Nelly Mauras . et al; Compensatory Hyperconnectivity in Developing Brains of Young Children With Type 1 Diabetes; Diabetes . 2017 Mar;66(3):754-762

4- Anto P Rajkumar,Henriette Thisted Horsdal,Theresa Wimberley et al. Endogenous and Antipsychotic-Related Risks for Diabetes Mellitus in Young People With Schizophrenia: A Danish Population-Based Cohort Study; Am J Psychiatry. 2017 Jul 1;174(7):686-694

5- Andreassen OA. Diabetes and Schizophrenia-New Findings for an Old Puzzle Am J Psychiatry. 2017 Jul 1;174(7):616-617

6- Morley JE ; Diabetes: The diabetic brain; . Nat Rev Endocrinol2017 Sep 12;13(10):570-571



Biography

Giancarlo Tonolo, interested in research since he was a student, obtained a degree, specialization and the title of research doctor at the University of Sassari, was abroad for more than 4 years: at the Western Infirmary of Glasgow (clinical and experimental research in field of hypertension), the Karolinska Institutet in Stockholm and the MAS University Hospital, Malmö Sweden (molecular biology of diabetic nephropathy). He has published more than 300 papers, he has been member of the national board of the SID (Italian Society of Diabetology), then regional president of the AMD (Medical Diabetologist Association) and of the national board and the SIMDO (Italian Society of Metabolism, Diabetes and Obesity) being now referent SIMDO for Sardinia. Since 2008 director of the Operative Unit of diabetology of ASSL Olbia, Italy. He recently concluded the transatlantic sail cruising race at ARC 2018 with a sailing boat with 5 diabetic patients, placing 8th out of 162 boats.

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