Analysis of Diabetes Mellitus and Obese BMI as Risk Factors for Alzheimer's Disease and Vascular Dementia

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This study seeks to answer the question of the significance of Diabetes Mellitus and categorical obese BMI as risk factors for the development of dementia, particularly Alzheimer’s disease and vascular dementia, and which risk factors were more significant for each type of dementia using a meta-analysis of previously published literature on the topic. Considering that dementia currently affects around 50,000,000 people worldwide, with Alzheimer’s disease and vascular dementia being the most common causes, understanding the answer to this question may highlight some overlooked elements of the pathologies of this dementia and enlighten new treatment routes. The meta-analysis came in two parts: 1) where the average hazard ratio of different study subsets was compared across risk factors and types of dementia, and 2) an odds ratio analysis using the raw numbers provided by the studies. In all maximally adjusted studies, diabetes had an average hazard ratio of 1.39 and 2.50 when compared with Alzheimer's disease and vascular dementia, respectively, and obesity had average hazard ratios of 1.996 and 2.19 when compared with Alzheimer's disease and vascular dementia, respectively. In general, it was found that obesity and diabetes both had similarly strong correlations with all dementia, Alzheimer’s disease, and vascular dementia. Obesity was correlated with a slightly stronger risk for Alzheimer’s disease and Diabetes Mellitus was correlated with a higher risk of vascular dementia. These results were supported by the association of obesity and Diabetes Mellitus with heart conditions, leptin resistance, and aberrant insulin signaling--all factors of the types of dementia being studied.

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