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COMPARATIVE STUDY OF THE EFFECTS OF INTRANASAL INSULIN ON MEMORY DEFICITS IN TYPE 2 DIABETES AND EARLY ALZHEIMER´S DEMENTIA CONCEPT AND STUDY SCOPE

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Introduction: Recent data support the view that the neurodegeneration underlying sporadic Alzheimer's Disease (AD) is in part related to brain insulin deficiency and brain insulin resistance. There is a higher incidence of AD in patients with diabetes mellitus type II (T2D) and both diseases show a decline in memory function. In a preceding trial intranasal insulin improved memory function in healthy volunteers so that an increase of central-nervous insulin concentration may improve cognitive function in both amnestic patient groups.

Aims: We want to analyse the effects of intranasal insulin on patients with early Alzheimers's disease (eAD) and patients with T2D in the state of amnestic mild cognitive impairment (aMCI).

Methods: Recruitment of 30 patients with eAD, 30 patients with T2D in aMCI state and 30 age-matched healthy controls. All patients undergo a run-in period of 2 weeks with 4x daily administration of placebo. It follows a double blinded trial with daily intranasal administration of 4x 40 I.U. insulin vs. placebo for 8 weeks and another 8 weeks of follow-up. At 4 defined time points memory function is assessed by word lists comprising 30 items of emotional, nutritional and neutral content which have to be memorized and are recalled after one week. To assess structural changes of the brain, a quantitative analysis for hippocampal N-acetyl-aspartate, choline and creatine is performed by 3 Tesla magnetic resonance spectroscopy.

Results: Since the study has not finished yet, we present experiences from the initiation and the beginning phase.

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