Novel biomarkers and brain imaging techniques for Alzheimer’s disease to improve early diagnosis and development of novel therapies

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Novel biomarkers and brain imaging techniques for Alzheimer’s disease to improve early diagnosis and development of novel therapies

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The Swedish Brain Foundation

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2.5

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Research Abstract

Today around 50% of individuals with dementia are not accurately diagnosed. Implementation of validated novel diagnostic biomarkers in the clinic will reduce the societal burden of these chronic degenerative diseases, and increase quality of life of patients and relatives. Treatments

that would delay the disease onset and progression of AD by as little as two years could reduce burden by at least 20 million cases worldwide. Optimized algorithms consisting of advanced biomarkers (CSF, MRI, PET) will help identify affected individuals for clinical trials having only limited and reversible brain damage, which will increase the likelihood of halting the disease. Such biomarkers will also reduce exposing individuals at low risk of developing the disease to new therapies that may cause (serious) adverse events. Additionally, our studies with well-characterized patients individually linked to advanced brain imaging, and experimental data from blood and CSF will shed light on key molecular processes involved in the development of AD in humans. Such studies could result in new therapeutic targets that are not necessarily found when using transgenic animal models. To sum up, our strategy has great potential to pave the way for early diagnosis and new therapies to detect and stop the disease before neuronal degeneration has become irreversible and patients already are disabled. We will achieve this by finding specific diagnostic biomarkers for different pathologies and by developing novel disease models adapted to patient heterogeneity.

Further information available at:

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