Role of microglia activation and amyloid deposition for the development of post-stroke dementia

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One in five stroke patients will develop dementia shortly after a stroke, half with prior cognitive impairment and half without. After recurrent stroke, more than a third will become demented. The mechanisms remain unclear beyond the fact that neurodegenerative and vascular mechanisms contributes to the cognitive decline. In this talk, experimental and clinical evidence for the interaction between ischemia, amyloid deposition and neuroinflammation will be explored. Based on this evidence and newer in vivo imaging results a new hypotheses of how ischemic stroke may accelerate cognitive decline through induction of neuroinflammatory processes will be developed.
There is a strong and complex relationship between cardiovascular diseases and the dementias. Therefore it is important to investigate the impact of cardiovascular disease on dementia and vice versa in real clinical practice.

Methods: Data from the national Swedish Dementia Registry (SveDem), www.svedem.se, where incident cases of dementia disorders are registered, will be discussed. More than 50,000 patients with different dementia disorders are in the registry. Linking data from the population in SveDem with data from the Swedish in- and outpatient registry, the Swedish Prescribed Drug Register, and the Swedish Population Registry give information on comorbidities, medication and mortality. More disease-specific research can be performed by linking SveDem to other quality registries such as the heart failure registry and registries on atrial fibrillation and stroke.

Results. More than 70% of the dementia population is also treated with cardiovascular drugs, with a higher correlation for males. The most common cardiovascular comorbidities are ischemic heart disease and atrial fibrillation. Heart failure with preserved ejection fraction is the most common heart failure type. Cardiovascular diseases are significantly associated with mixed and vascular dementia when compared to AD and linked to a higher risk of death. Cholinesterase-inhibitor treatment in AD is associated with a reduced risk for myocardial infarction and death.

Conclusion: Cardiovascular diseases are common in the dementia population and cardiovascular medication is used extensively across the dementia disorders. More knowledge on their impact on treatment, prognosis and death in the different dementia disorders is needed.