

LeMeReND

Ten years preceding a diagnosis of neurodegenerative disease in Europe and Australia: Medication use associated with Alzheimer's disease, Parkinson's disease, and amyotrophic lateral sclerosis

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Aims, research questions and working hypothesis

Many studies have investigated early predictors for Alzheimer's disease (AD), Parkinson's disease (PD), and amyotrophic lateral sclerosis (ALS). However, evidence is sparse regarding specific and common predictors for the future diagnosis of these diseases. We aimed to identify medication use that might be associated with the risk of AD, PD, and ALS ten years later.

Means/methods implemented by the consortium

We conducted population-based nested case-control studies of AD, PD, and ALS using electronic medical records in Europe (France, the UK, and Sweden) and Australia. We retrieved data on medication use from electronic medical. Conditional logistic regression models and meta-analysis were applied to assess the associations between these prodromal factors and the risk of receiving a diagnosis of AD, PD, or ALS.

What are the outcomes of the project?

(milestones achieved, key results obtained)

We included a total of 149,642 AD cases (mean age: 79.1-81.2 years), 252,696 PD cases (73.2-75.9 years), and 27,533 ALS cases (64.4-69.6 years). The prescription of psychoanaleptics and nasal preparations was consistently associated with an increased risk of AD, PD, and ALS 5-10 years later. Constipation and use of related medications were associated with an increased risk of AD and PD, while diabetes and use of antidiabetics were associated with a reduced risk of ALS.

Significance and impact of the work on the field

Psychoanaleptics and nasal preparations may serve as common predictors for diagnosis of AD, PD, and ALS 5-10 years later. Conversely, the increased prevalence of constipation is specific to AD and PD, while the decreased prevalence of diabetes and use of antidiabetics are specific to ALS.

Next steps and future challenges

Further studies, such as Mendelian randomization studies, are warranted to conclude on the causal nature of the associations found.