

LETTER

No association between antiviral treatment and risk of Alzheimer's disease in German outpatients

In their nested case-control study performed in Sweden,¹ Hemmingsson et al. investigated the association between the antiviral treatment given prior to onset of Alzheimer's disease (AD) and the risk of subsequent AD. A total of 262 individuals who developed AD were matched to a non-AD control group by age, sex, apolipoprotein E genotype, and study sample start year. In a logistic regression model they indicated a negative association between antiviral prescription and the AD risk (odds ratio [OR]: 0.287, $P = 0.018$). Interestingly, only 26 antiviral prescriptions were found in a total of 524 patients.

A similar study was conducted using a longitudinal database (Disease Analyzer database) from Germany. This database compiles drug prescriptions, diagnoses, and basic medical and demographic data obtained directly and in anonymous format from computer systems used in the practices of general practitioners.² We investigated if antiviral prescription is associated with AD as well as all-cause dementia (including AD, vascular, undefined dementia).

This study included 675 patients aged ≥ 50 years who were diagnosed with all-cause dementia (International Classification of Diseases, 10th revision [ICD-10]: F00-F03, G30) and 675 age-, sex-, index year- matched non-dementia individuals followed in 395 practices from Germany between 2011 and 2020. Each patient had a diagnosis of oral herpes virus. The average observation time was 10.5 (standard deviation [SD]: 6.0) years in dementia patients, and 11.8 (SD: 5.0) years in non-dementia controls. The main difference of our results and results reported by Hemmingsson et al.¹ was the proportion of patients with antiviral prescription. In our sample, 63.7% of herpes virus patients received at least one antiviral prescription. This may explain the differences in the regression analysis.

We found no significant association between antiviral prescription and all-cause dementia (OR = 0.93, 95% confidence interval [CI] = 0.74–1.16, P -value = 0.497), nor between antiviral prescription and AD ($n = 196$, OR = 1.09, 95% CI = 0.61–1.93, P -value = 0.771).

Based on these findings, we unfortunately cannot confirm for German outpatients that antiviral treatment might possibly reduce the risk for later development of all-cause dementia or AD. Further research

is warranted to identify the therapies negatively associated with the dementia risk.

CONFLICT OF INTEREST

The authors declare no competing financial interests.

AUTHOR CONTRIBUTIONS

Karel Kostev contributed to the design of the study, performed the statistical analyses, wrote the first draft of the manuscript, and corrected the manuscript. Christian Tanislav contributed to the design of the study and corrected the manuscript. Both authors contributed to and have approved the final manuscript.

FUNDING INFORMATION

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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