

Seizures in patients with Alzheimer's disease or vascular dementia: A population-based nested case-control analysis

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Summary

Purpose: Patients with Alzheimer's disease (AD) have an increased risk of developing seizures or epilepsy. Little is known about the role of risk factors and about the risk of developing seizures/epilepsy in patients with vascular dementia (VD). The aim of this study was to assess incidence rates (IRs) of seizures/epilepsy in patients with AD, VD, or without dementia, and to identify potential risk factors of seizures or epilepsy.

Methods: We conducted a follow-up study with a nested case-control analysis using the United Kingdom-based General Practice Research Database (GPRD). We identified patients aged ≥ 65 years with an incident diagnosis of AD or VD between 1998 and 2008 and a matched comparison group of dementia-free patients. Conditional logistic regression was used to estimate the odds ratio (OR) with a 95% confidence interval (CI) of developing seizures/epilepsy in patients with AD or VD, stratified by age at onset and duration of dementia as well as by use of antedementia drugs.

Key Findings: Among 7,086 cases with AD, 4,438 with VD, and 11,524 matched dementia-free patients, we identified 180 cases with an incident diagnosis of seizures/epilepsy. The IRs of epilepsy/seizures for patients with AD or VD were 5.6/1,000 person-years (py) (95% CI 4.6–6.9) and 7.5/1,000 py (95% CI 5.7–9.7), respectively, and 0.8/1,000 py (95% CI 0.6–1.1) in the dementia-free group. In the nested case-control analysis, patients with longer standing (≥ 3 years) AD had a slightly higher risk of developing seizures or epilepsy than those with a shorter disease duration, whereas in patients with VD the contrary was observed.

Significance: Seizures or epilepsy were substantially more common in patients with AD and VD than in dementia-free patients. The role of disease duration as a risk factor for seizures/epilepsy seems to differ between AD and VD.

Keywords: Seizures, Epilepsy, Alzheimer's disease, Vascular dementia, Incidence rates, Risk factors.

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