

Influenza infections and risk of Alzheimer's disease

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Abstract

Introduction: Influenza may cause neuropsychiatric disorders, including confusion, delirium, convulsions, and encephalopathy.

Methods: We conducted a case-control study to evaluate the association between diagnosed influenza and the risk of developing Alzheimer's disease (AD) using the UK-based Clinical Practice Research Datalink (CPRD). We identified 19,463 patients who developed an incident AD diagnosis between 1998 and 2013 and matched them 1:1 to dementia-free controls on age, sex, general practice, calendar time and number of years of recorded history. We calculated adjusted odds ratios (aORs) with 95% confidence intervals (CIs) of developing AD in association with previous influenza infections and stratified by number of infections prior to the AD diagnosis date.

Results: Patients with a previous influenza infection were not at an increased risk of developing AD as compared to those with no previous infection (aOR, 95% CI 0.94, 0.87–1.02) overall. Nor was increasing number of infections related to an increased risk of developing AD; the aOR (95% CI) for those with 1, 2, or ≥ 3 episodes was 0.98 (0.90–1.07), 0.70 (0.56–0.88), and 0.92 (0.63–1.34), respectively. Presence of an underlying chronic inflammatory disease in those with an influenza infection did not increase the risk of developing AD (aOR, 95% CI 0.83, 0.71–0.96), either, and there was no association between the severity of influenza infections (based on recorded neurological or bacterial complications) and the risk of AD.

Conclusion: Considering the limitations of this large observational study, we found no association between influenza infections and the risk of developing AD.

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