Submission Id: 2590

Title

Lower Dementia Risk in Patients Vaccinated Against Herpes Zoster

Priority 1 (Research Category)

Big Data

Presenters

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Abstract

Context: Herpes zoster (HZ) infection increases dementia risk but it is not known if HZ vaccination is associated with lower risk for dementia. Objective: Determine if patients with HZ vaccination vs. those who remain unvaccinated, have a lower risk for dementia in a cohort of Veterans Health Administration (VHA) patients. Replicate results in a private sector, medical claims patient cohort. Study Design: Retrospective cohort. Competing risk (VHA) and Cox proportional hazard (MarketScan) models estimated the association between HZ vaccination and incident dementia in all patients and in age (65-69, 70-74, ≥75) and race (White, Black, Other) sub-groups. Expanded models accounted for the effect of antivirals and HZ infection between index and end of follow-up. Sensitivity analysis measured the association between HZ vaccination and incident Alzheimer's dementia (AD). E-values computed to test for bias due to unmeasured confounding and selection bias. Setting/Data set: VHA cohort (10/1/2008 – 9/30/2019) with replication in MarketScan® commercial and Medicare claims (1/1/2009-12/31/2018). Population studied: Eligible patients (VHA n=136,016; MarketScan n=172,790) were ≥65 years of age and free of dementia for two years prior to baseline. All patients had 3 or more 'well visits' to control for confounding related to use of preventive health care services. Outcome measures: Incident dementia. Results: VHA patients were 75.6 (SD±7.5) years of age, 4% female, and 91.2% were white race. MarketScan patients were 69.8 (SD±5.6) years of age, on average and 65.4% were female. years of age on average, 65.0% were female. After controlling for confounding, HZ vaccination compared with no vaccination, was significantly associated with lower dementia risk (VHA HR= 0.69; 95%CI: 0.67-0.72; MarketScan HR=0.65; 95%CI:0.57-0.74). No difference in outcomes were observed by race and HZ vaccination was associated with lower AD risk. Results were stable after adjusting for antivirals and HZ infection. E-values indicated results are not explained by selection bias or unmeasured confounding. Conclusions: Among patients ≥65 years of age, HZ vaccination is associated with a 31-35% reduced risk of dementia. Confirmation in other study designs is warranted. Results may be explained by nonspecific neuroprotection and vaccination training the immune system to limit damaging inflammation. Results highlight the importance of HZ vaccination.