

L0053 Dementia in patients with European Lyme neuroborreliosis: Nationwide population-based case control and cohort studies

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Background: Some studies have suggested an association between Lyme Neuroborreliosis (LNB) and dementia. We used an established cohort of LNB patients to perform a case control study and a cohort study to examine the associations between LNB and dementia.

Materials/methods: From national registers and an established cohort of LNB patients, we identified all Danish citizens diagnosed with LNB during 1986-2016 and a comparison cohort from the general population matched on gender and age. LNB was defined as a positive *Borrelia burgdorferi* intrathecal antibody test and a clinical diagnosis of LNB. In a nationwide population-based case control study we examined if dementia (ICD-10 codes F00 to F03) was a risk factor for being diagnosed with LNB. This was done to test the hypothesis that the diagnostic work up related to dementia would reveal a LNB diagnosis. We calculated odds ratios (ORs) and corresponding 95% confidence intervals (CIs) using conditional logistic regression.

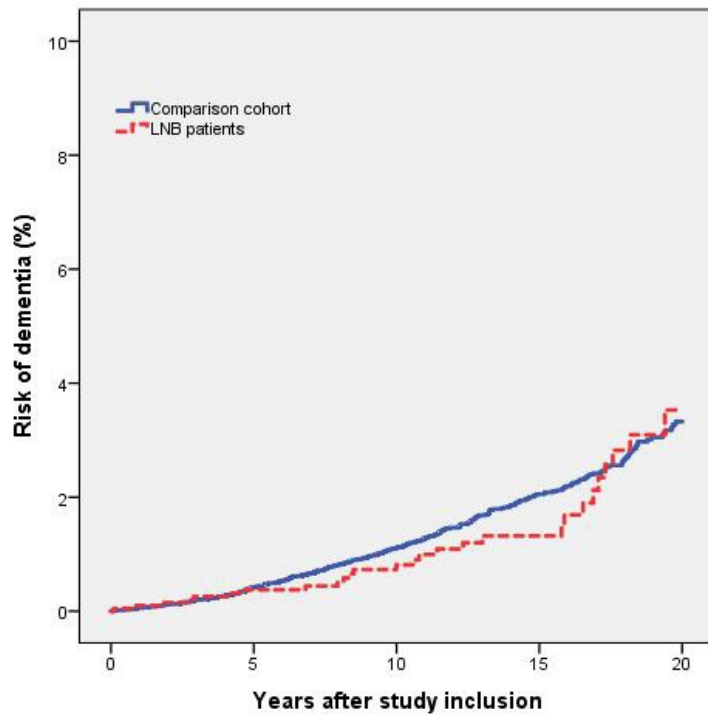
In a cohort study we examined the long-term risk of dementia and of nursing home residency (as a surrogate of dementia) in LNB patients. We excluded individuals with contact to a neurological department earlier than one year before study inclusion. Hazard ratios (HR) and corresponding 95% CIs were calculated using cox regression. We did a range of sensitivity-analyses to test the robustness of our results.

Results: In the case-control study, dementia was not a risk factor for LNB diagnosis (OR 1.01, 95% CI: 0.33 to 2.12).

Among individuals not diagnosed with dementia in the cohort study at study inclusion, 2062 LNB patients were not at increased risk of being diagnosed with dementia during follow-up compared with 20,633 members of the comparison cohort (HR 0.64, 95% CI: 0.39 to 1.06). Further, of individuals not residing in nursing homes at study inclusion, 2056 LNB patients were not at increased risk of nursing home residency compared with 20,496 members of the comparison cohort (HR 0.69, 95% CI: 0.46 to 1.04). The results of the sensitivity analyses were essentially the same (data not shown).

Conclusions: We found no association between LNB and dementia.

Figure 1



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