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Cognitive impairment and risk of stroke in the oldest old: the Leiden 85-plus study

B. Sabayan[1], J. Gussekloo[2], R.G.J. Westendorp[3], A.J.M. de Craen[3]
[1]Gerontology and Geriatrics, Radiology, [2]Department of Public Health and Primary Care, [3]Gerontology and Geriatrics, Leiden University Medical Center, Leiden, The Netherlands

Introduction: Cognitive impairment is associated with brain vascular pathology and disturbed cerebrovascular haemodynamics. The aim of this study was to investigate whether impaired cognitive function predicts the risk of first time stroke in the oldest old.
Methods: In this study 509 subjects from the Leiden 85-plus Study were included. All participants were 85 years old and had no history of stroke. Mini-Mental State Examination (MMSE) was used to assess global cognitive function at age 85 years. Association of cognitive function with incidence of fatal and non-fatal stroke during five years follow-up and fatal stroke during 10 years follow-up was analyzed by Cox regression models. Next to global cognitive function, predictive value of orientation in time and place was evaluated. All the analyses were adjusted for demographic and cardiovascular risk factors.
Results: A one-point higher MMSE score was associated with a 9% decrease in risk of fatal and non-fatal stroke (Hazard Ratio [HR] 0.91, 95% CI: 0.86-0.96) and 9% decrease in risk of fatal stroke (HR: 0.91, 95% CI: 0.85-0.97). Likewise, higher scores for orientation to time and place were associated with lower risk of fatal and non-fatal stroke (HR: 0.69, 95% CI: 0.58-0.82, and HR: 0.69, 95% CI: 0.52-0.90 respectively). Risk of fatal stroke was more strongly associated with disorientation in time and less so with disorientation in place.
Conclusions: In the oldest old, impaired global cognitive function and disorientation in time and place predict risk of first-time stroke independent of established cerebrovascular risk factors.

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Incidence and predictors of late seizures in intracerebral haemorrhages

C. Rossi[1], V. De Herd[1,2], N. Dequatre-Ponchelle[1], H. Hénon[1], D. Leys[1], C. Cordonnier[1]
[1]Department of Neurology, Univ Lille Nord de France, UDSL, CHU Lille, EA 1046, Lille, France, [2]Department of Neurology, Reference Center for Refractory Epilepsy, Gent, Belgium

Objective: To identify incidence and predictors of late seizures (LS) in a cohort of intracerebral haemorrhage (ICH) patients.
Methods: Between 11/04 and 03/09, we prospectively recruited 562 consecutive adults with a spontaneous ICH. Patients who died within 7 days after stroke onset (n=197) or had history of seizures before stroke (n=40) were excluded. LS were defined as seizures occurring beyond one week of stroke. We performed survival analyses (life tables, Kaplan-Meier statistics). Incidence and predictors were identified with Cox regression. We included multivariate analyses on MRI biomarkers [brain microbleeds (BMB), leukoaraiosis, cerebral atrophy], adjusted for vascular risk factors.
Results: We recruited 325 patients: 54% male, median age 70 years [interquartile range (IQR) 58-79]. During 778 person-years of follow-up [median 2.2 years (IQR 0.97-4.31)], 31 patients developed at least one LS, i.e. an incidence rate of 4 (95%CI 3-6) new cases/100 person-years. The median delay between ICH and LS was 9 months (IQR 3-23). Factors independently associated with the occurrence of LS were a cortical involvement of the ICH [Hazard Ratio (HR)=3.4; 95%CI 1.5-7.5] and diabetes mellitus (HR=2.7; 95%CI 1.1-6.5). Concerning MRI biomarkers, multivariate analyses found lobar BMB to be independent predictors of LS (HR=2.4; 95%CI 1.0-5.4), especially the presence of 3 or more (HR=2.7; 95%CI 1.1-6.8).
Conclusion: LS generally occur more than 6 months after ICH onset, imposing a long-term follow-up. The role of lobar BMB (especially the presence of 3 or more) as predictors of LS might suggest a link with the underlying vasculopathy (cerebral amyloid angiopathy).