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Asymptomatic carotid stenosis, arterial hypertension and cognitive impairment: A longitudinal population-based epidemiological study

Objectives: The aim of this epidemiological study is to estimate the significance of asymptomatic carotid stenosis (ACS \geq 50%) and arterial hypertension (AH) for cognitive impairment (CI) in a population without signs and symptoms of stroke or TIA.

Methods: A total of 500 volunteers, aged 50-79 years, were enrolled and followed-up for cognitive performance. CI has been defined as a score between 24 and 27 of MMSE. Additional neuropsychological tests have also been conducted.

Results: CI in persons without any degree of ACS has been detected at only 13.85% (27/195). In comparison to the whole group investigated ($p < 0.012$), as well as to the subgroup without ACS, CI has significantly increased in participants with ACS $<$ 50% (22.3% - 61/273, $p < 0.01$) and especially with ACS \geq 50% (40.6% - 13/32, $p < 0.001$). Significant differences in the prevalence of CI have also been found between the two subgroups with ACS $<$ 50% or ACS \geq 50% ($p < 0.05$). Logistic regression analysis has been conducted between the group with ACS \geq 50% and an age and sex adjusted control group. It has revealed no relation between CI and ACS \geq 50%. However, multiple logistic regression analysis has shown that the combination of ACS \geq 50% and systolic AH (SAH) attributes to CI (OR=10.7; 95%CI: 3.36-34.14; $p = 0.0001$). CI has been presented as a decline in attention, verbal fluency and verbal working memory at the end of the study.

Conclusion: This pattern of CI, which is specific for a cerebral small vessel disease in long lasting AH, has supported the thesis that SAH and ACS \geq 50%, not only ACS \geq 50%, are attributable for CI.

Biography

Petya Mineva has completed her PhD in 2006 from the Medical University, Sofia and Post-doctoral studies from the Trakia University, Medical Faculty, Stara Zagora. She is a Head of the Healthcare Department at the Medical College of the Asen Zlatarov University, Burgas and an Associate Professor and a Lecturer in Neurology at the Trakia University, Medical Faculty, Stara Zagora. She has published more than 20 papers in reputed journals.

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