E-Poster

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Impact of Age and Clinical Features on Driving Resumption After Stroke

Topic: Health Conditions (Nervous System, Musculoskeletal System, Cardiopulmonary System)

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BACKGROUND

Driving is an essential activity for maintaining independence and quality of life in stroke survivors. While various factors affect driving resumption after stroke, predictors of successful return to driving remain insufficiently characterized. We comprehensively examined multiple clinical and cognitive factors to identify factors associated with successful driving resumption after stroke.

METHODS

We retrospectively analyzed consecutive ischemic or hemorrhagic stroke patients who were drivers before stroke onset. Cognitive assessment was performed within six months of stroke onset following rehabilitation to evaluate fitness to return to driving, using standardized tests such as the Hasegawa Dementia Scale-Revised (HDS-R), Trail Making Test (TMT) A and B, Wechsler Adult Intelligence Scale-Fourth Edition (WAIS-IV), Behavioral Inattention Test (BIT), and Frontal Assessment Battery (FAB). Multivariate logistic regression analysis and multiple linear regression analysis were performed to identify factors independently associated with driving resumption.

RESULTS

Between January 2022 and December 2024, among the 70 eligible patients, 42 (60%) were determined fit to resume driving. Multivariate analysis identified older age (OR: 1.24, 95% CI: 1.11-1.39), larger lesion size (OR: 1.06, 95% CI: 1.01-1.12), presence of frontal lobe lesions (OR: 9.28, 95% CI: 1.56-55.22), and stroke recurrence (OR: 11.35, 95% CI: 1.80-71.49) as independent factors associated with driving cessation. Among various neuropsychological tests, TMT-A significantly predicted driving cessation (OR: 1.10, 95% CI: 1.03-1.18). Multiple linear regression analysis demonstrated that age was significantly associated with poorer performance on HDS-R, BIT, TMT-B, and FAB ($p = 0.005$, $p = 0.011$, $p = 0.006$, $p = 0.003$, respectively). Lesion size significantly affected TMT-A performance ($p = 0.005$), and frontal lobe involvement was significantly associated with BIT scores ($p = 0.004$).

CONCLUSION

Clinical factors (age, lesion size, frontal lobe involvement, and stroke recurrence) and TMT-A performance predict driving resumption after stroke. Age is particularly crucial, significantly affecting multiple cognitive domains essential for driving, including global cognitive function, attention, and executive function.

Statement of Disclosures

None

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