LONG-TERM RISK OF RECURRENT STROKE AND CORONARY EVENTS AFTER ISCHEMIC STROKE: RESULTS FROM THE SAHLGRENSKA ACADEMY STUDY ON ISCHEMIC STROKE

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Background and Aim

Studies of coronary events after stroke in the long term are scarce. We sought to investigate the long-term risk of stroke recurrence and coronary events, and their predictors in young and middle-aged ischemic stroke patients.

Method

- This is a longitudinal study of 1,086 consecutive adult cases with ischemic stroke before 70 years of age between 1998 and 2012, and 600 community controls without cardiovascular disease at baseline.
- Outcomes assessed were 1) recurrent stroke, 2) coronary events, i.e. myocardial infarction or coronary revascularization procedures. Participants were followed through national registers and medical records until first recurrent event for each outcome or end of study December 31, 2012.
- The event rates for the cases were compared to the rates for the controls. For cases, Cox regression models were developed to identify predictors of each outcome.

Results

- One-hundred-seventy-six cases experienced recurrent stroke (median follow-up 7 years) and 84 a coronary event (median follow-up 8 years), whereas the corresponding numbers were 12 and 32 for controls (median follow-up 10 years).
- The event rate (ER) for stroke was 10 times greater for cases than controls, whereas the coronary event rate was twice as high (ER per 1,000 person years 23.8 (95% confidence interval (CI) 20.4-27.6) versus 1.9 (95% CI 1.0-3.3) and 10.6 (95% CI 8.4-13.1) versus 5.2 (95% CI 3.5-7.3), respectively). For coronary events, this difference did not remain when cases without previous coronary heart disease were compared to the controls. (**Figure 1B**).
- Independent associations were detected for living alone and recurrent stroke (adjusted hazard ratio (HR) 1.67 (95% CI 1.23 - 2.27), p=0.001) and for pre-stroke sedentary leisure time and coronary events (adjusted HR 2.14 (95% CI 1.32 - 3.46), p=0.002). In addition, age and previous cardiovascular disease were independently associated to both outcomes (**Figure 2A and 2B**).

Figure 1: Cumulative incidence of recurrent stroke (cases), incident stroke (controls), stratified by history of stroke before inclusion for cases (1A). Cumulative incidence of coronary events, stratified by history of coronary events before inclusion for cases (1B).

Figure 2: Adjusted Hazard Ratios (HRs) and 95% confidence intervals for the covariates included in the final multivariable model for recurrent stroke (2A) and coronary events (2B) respectively. A piecewise linear function was fitted for age and recurrent stroke.

CONCLUSION

Ischemic stroke patients remain at elevated risk for recurrent vascular events for many years after stroke. We identified living alone and sedentary leisure time as novel predictors of recurrent stroke and coronary events.