

STROKE

Parental stroke is an independent risk factor for stroke and transient ischemic attack

A new analysis from the Framingham Heart Study has revealed that individuals with a parent who experienced a stroke before the age of 65 years are almost three times more likely to have a stroke themselves than are individuals with no parental history of stroke.



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Until now, the available data on familial stroke risk were inconsistent. “Whereas parental coronary artery disease (CAD) by age 55 [years] is known to be a risk factor for CAD ... much less is known about the impact of parental stroke” says investigator Sudha Seshadri. The Framingham cohorts offer a unique opportunity to resolve this issue, being a source of verified data on the incidence of stroke in a large cohort of men and women (enrolled in 1948) and their offspring (enrolled in 1971) over a long period of time.

The researchers studied 3,443 individuals from the offspring cohort, who were stroke-free at enrollment and who had at least one parent (from the original cohort) who had a history of stroke before the age of 65 years or had no evidence of stroke by this age. Stroke was defined as a focal neurological deficit of vascular origin persisting longer than 24 h. Stroke was classified as ischemic if there was an infarct but no hemorrhage on imaging. Ischemic strokes were further classified as atherothrombotic brain infarctions (ABI) if no cardiac source of embolism was found.

During follow-up (77,534 person-years), 128 strokes (106 ischemic and 81 ABI) and 29 transient ischemic attacks were recorded among the offspring. In the parental group, 106 individuals

had experienced a stroke by 65 years of age. After adjustment for covariates and established risk factors for stroke, the risk of stroke was 2.8 times higher among individuals with a parental history of stroke. Moreover, parental stroke increased the risk for early stroke (before the age of 65 years) in the offspring by almost fourfold. Overall, the risk was highest for offspring in the top quintile of stroke risk defined on the basis of traditional risk factors. “Persons with a family history of stroke should, therefore, be even more careful to control levels of conventional risk factors,” cautions Dr Seshadri.

The investigators are now interested in identifying genes that predispose an individual to stroke. Using “genome-wide association analysis ... [we have] identified one possible locus on chromosome 12 near a gene called *NINJ2*,” says Dr Seshadri. “We are also updating the Framingham stroke risk profile, including parental stroke and a number of ... circulating biomarkers for stroke; we are interested in ... making it as accurate and useful as possible.”

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