

Authors and Disclosures

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Caroline Cassels is a journalist for Medscape. Caroline has been a journalist in the health field for 18 years, writing extensively for both physician and consumer audiences. She launched an awarding-winning consumer publication and edited several consumer health websites before joining thekidney.org, a nephrology site recently acquired by WebMD. She can be contacted at CCassels@webmd.net.

From Medscape Medical News Stroke Prevalence in Middle-Aged Women Higher Than Men



Caroline Cassels

February 22, 2007 (San Francisco) -- A new study shows that stroke is more than twice as prevalent in middle-aged women as in men of the same age.

Presented here at the American Stroke Association's International Stroke Conference 2007, investigators at University of California, Los Angeles Stroke Center found that women between the ages of 45 and 54 had 2.5 times the risk of having experienced a stroke compared with their male counterparts.

"This was a surprising finding. The conventional wisdom is that middle-aged women have the same risk or a lower risk for stroke than men, but this turned out not to be the case," the study's principal investigator, Dr. Amytis Towfighi, told Medscape.

Stroke Prevalence Rates by Decades in Women vs Men, 1999-2004

Age group (y)	Women/Men (%)	OR	95% CI	P
35 - 44	1.2/1.0	1.2142	0.4715 - 3.1268	0.6876
45 - 54	2.5/1.0	2.3903	1.3205 - 4.3267	0.0040
55 - 64	3.4/3.0	1.1256	0.6218 - 2.0376	0.6961

Stroke Not Confined to Senior Years

Perhaps not surprisingly, said Dr. Towfighi, because the majority of strokes occur in individuals older than 65 years, most of the research has been conducted in this age group.

However, she pointed out that individuals in the midlife years are also at risk. Women in particular, she said, have unique stroke risk factors, including pregnancy and oral contraceptive and hormone replacement therapy use.

"We felt that determining the frequency and predictors of stroke in midlife and gaining a better understanding of gender-specific differences might be important in reducing the burden of stroke in both men and women," she added.

Using the National Health and Nutrition Examination Surveys (NHANES), which estimates prevalence of chronic conditions in US adults, the investigators used data gathered on 17,061 individuals older than 18 years between 1999 and 2004 to determine stroke risk across successive decades of midlife.

Of these, 15,309 (90%) responded to a question asking whether a physician had ever told them they had had a stroke. Of these individuals, 606 (4%) reported they had experienced a stroke.

Doubling of Risk

In addition to finding a greater prevalence of stroke among women aged 45 to 54 compared with men, the investigators also looked at

stroke prevalence across midlife years in women alone. They found women's transition from the 35-to-44-year age category to the 45-to-54-year age group marked the steepest rise in stroke prevalence, with a doubling of risk.

They also found that while men's risk decreased over the 5-year study period, women's risk increased. "In 1999, there was no difference in stroke prevalence between men and women. However, by 2004 there was over a 4-fold difference in prevalence rates," said Dr. Towfighi.

To determine independent stroke risk factors for men and women in the 45-to-54-year age group, investigators conducted a multivariate analysis and found that coronary artery disease and waist circumference were independent risk factors for women and smoking was an independent risk factor in men.

Dr. Towfighi said the team also analyzed biomarkers in both sexes across decades of midlife and found that many of these factors increased at much higher rates across age categories in women compared with men.

For instance, she said, over the decades men's blood pressure increased by 4 to 5 points while women's increased 10 to 12 points. Similarly, cholesterol levels remained stable in men but increased in women as they aged.

Inadequate Risk-Factor Management

When the investigators looked at historical variables such as history of CAD, diabetes, and hypertension, they found women aged 45 to 54 years had four times the odds of having CAD than women aged 35 to 44 years.

This rise in vascular risk factors among women in midlife is the likely explanation for their increased stroke prevalence.

"Studies have shown that healthcare practitioners tend to underestimate women's cardiovascular risk and therefore haven't been vigilant about treating their risk factors. I think this study demonstrates the need to aggressively treat stroke risk factors starting in their early midlife years, with goals of reducing cholesterol, elevated blood glucose, and high blood pressure," she said.

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