

Depression and risk of stroke in middle aged women

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Why is this study important?

The burden of stroke is higher among women because they live longer, have higher rates of stroke in old age as compared to men and less physical performance after stroke. Although depression post stroke is well documented but depression as a conventional risk factor for stroke is not yet established. This study intended to establish the association between depression and stroke incidence in middle -aged women.

Who were the participants?

In the Australian Longitudinal Study on Women's Health, the data used was obtained from women born between 1946-51 and since Depression was measured in the second survey conducted in 1998, the participants were followed for outcome till 2010. The survey was done using self-completed questionnaires. The actual study size was 10, 547 women.

How was Depression measured?

Center for Epidemiological Studies Depression Scale Shortened Version (CESD-10) was used to measure the depressive symptoms in the past week. Diagnosis of depression was also confirmed through drug history in some of the surveys. Women who scored greater than or equal to 10 on CESD-10 scale or who were taking anti-depressant were classified as being depressed.

How was Outcome (Stroke) measured?

They explored the deaths in the National Death Index using the ICD-10 coding system. Incident stroke was identified thorough self-report from participants over the follow-up surveys.

What were the results?

The mean age was 52.5±1.5 years and depression prevalence was 25%. During follow-ups 177 women had first ever episode of stroke, 5 of which were lethal, giving a

stroke prevalence of 1.5%. Depression was associated with greater than 2 fold odds of stroke (OR, 2.41; 95% CI, 1.78-3.27). The association remained statistically significant even after controlling for age, SES, Lifestyle and physiological stroke risk factors (OR, 1.94; 95% CI, 1.37-2.74).

What were the Conclusions?

After adjusting for socioeconomic status, life style and physiological risk factors, depression was associated with a twofold increased risk of stroke incidence.

What does this mean for our patients?

Pakistan has a high prevalence of depression and stroke. This observation makes us think about this preventable risk factor and manage it appropriately in order to prevent strokes. Population based interventions are required to prevent depression and bolster resilience. Moreover women are more predisposed to development of depression because of health issues, family disputes, poverty, unemployment and social pressures, so their vulnerability should be appreciated.

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Recommended Reading

1. Jackson CA, Mishra GD. Depression and risk of stroke in midaged women: a prospective longitudinal study. *Stroke* 2013; 44: 1555-60.
2. Johnston SC, Mendis S, Mathers CD. Global variation in stroke burden and mortality: estimates from monitoring, surveillance, and modelling. *Lancet Neurol* 2009; 8: 345-54.
3. Reeves MJ, Bushnell CD, Howard G, Gargano JW, Duncan PW, Lynch G, et al. Sex differences in stroke: epidemiology, clinical presentation, medical care, and outcomes. *Lancet Neurol* 2008; 7: 915-26.
4. Bromet E, Andrade LH, Hwang I, Sampson NA, Alonso J, de Girolamo G, et al. Cross-national epidemiology of DSM-IV major depressive episode. *BMC Med* 2011; 9: 90.
5. World Health Organization. The global burden of disease: 2004 update.

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