Study identifies biomarker to measure benefits of folic acid on stroke prevention

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An analysis of the China Stroke Primary Prevention Trial presented at the 28th Great Wall International Congress of Cardiology (GW-ICC) and published in Neurology has identified a biomarker that can be used to measure the benefits of folic acid supplementation on stroke prevention.

"Stroke is the leading cause of death and adult disability in China, and incidence is increasing at an annual rate of 8.3 percent," said lead author Dr Xiao Huang, attending physician, Department of Cardiology, Second Affiliated Hospital of Nanchang University, Jiangxi Province, China. "Around 2 percent of Chinese adults aged 40 years and older have had a stroke."

Hypertension affects 25.2 percent of people aged 18 and above in China and is the primary risk factor for stroke, especially when accompanied by elevated homocysteine. Dietary folate is the most important determinant of homocysteine.

The China Stroke Primary Prevention Trial (CSPPT) previously showed that enalapril (an anti-hypertensive drug) combined with folic acid, compared to enalapril alone, significantly reduced the risk of first stroke in adults with hypertension by 21 percent during a median treatment duration of 4.5 years.

The current post-hoc analysis of the CSPPT is the first to examine whether, and to what degree, a reduction in homocysteine level was

associated with the risk of first stroke in the setting of a large randomised folic acid trial.

The CSPPT was a randomised, double-blind clinical trial conducted from May 2008 to August 2013 in 32 communities in China. The trial included 20 702 men and women aged 45 to 75 years with hypertension and no history of stroke or myocardial infarction. Participants were randomly assigned, in a 1:1 ratio, to enalapril plus folic acid or enalapril alone.

This current report included 16 867 participants with homocysteine measurements at the start and end of the trial. Over a median treatment duration of 4.5 years, stroke occurred in 445 participants. Those with stroke had a significantly lower percent decline in homocysteine. A 20 percent homocysteine decline was associated with a 7 percent reduction in stroke risk (hazard ratio [HR], 0.93; 95 percent confidence interval [CI], 0.90–0.97). When percent decline in homocysteine was assessed in tertiles, a significantly lower stroke risk was found in those in tertiles 2 and 3 (HR, 0.79; 95 percent CI, 0.64–0.97) compared to the tertile .

Stratified analyses were performed to assess whether the association between percent decline in homocysteine and stroke risk differed by subgroups. None of the stratification variables, including age (