Infections in childhood linked to high risk of ischemic stroke

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Common infections in children pose a high risk of ischemic stroke, according to research presented at the American Stroke Association's International Stroke Conference 2012.

In a review of 2.5 million children, the researchers identified 126 childhood ischemic stroke cases and then randomly selected 378 age-matched controls from the remaining children without stroke. They discovered that 29 percent of those who suffered a stroke had a medical encounter for infection in the two days preceding the stroke versus one percent of controls during the same dates.

In the three- to seven-day window, 13 percent of children had an infection compared to 2 percent of controls.

The elevated risk of stroke didn't persist after the first month of infection, researchers said.

"This is the first large study to establish the relationship between infection and stroke in children," said Heather Fullerton, M.D., the study's principal investigator and director of the Pediatric Stroke and Cerebrovascular Disease Center at the University of California in San Francisco.

Researchers analyzed diagnostic and radiologic databases of children enrolled in the Kaiser Permanente healthcare plan from 1993 to 2007. They evaluated medical records and chart reviews for infections during

the two years prior to the childhood stroke, and the same time period for the age-matched controls.

The children with stroke ranged from infants to adolescents, average 10.5 years old (oldest child was 19). Researchers identified three stroke-free controls per case. Findings between girls and boys or ethnic groups didn't differ.

Researchers found acute infections are more important in triggering stroke than chronic infections over time.

"These were predominantly minor acute infections and represented a variety of infections, including upper respiratory infections, urinary tract infections and ear infections," Fullerton said. "No particular type of infection predominated."

The study findings hold implications for the secondary prevention of stroke in children, she said.

Most previously healthy children with an ischemic stroke have a disease of the blood vessels to the brain, and these children are at highest risk of recurrent stroke. This study may provide some insight into why children develop this arteriopathy: the inflammatory process that results from an infection which may lead to stroke by causing vascular injury, researchers said.

The standard treatment for ischemic stroke in children is blood thinners. But the study suggests that future research should focus on the potential role for anti-inflammatory medications in preventing the recurrence of stroke in this population.

The incidence of stroke in childhood is about five per 100,000 in the United States each year, Fullerton said.

About half of childhood strokes are hemorrhagic (bleeding in the brain), according to American Heart Association statistics.

"Childhood infections are exceedingly common, while childhood strokes are uncommon," Fullerton said. "Parents should not be alarmed at the findings of this study. We suspect that there are rare genetic factors that may place some children at risk for this uncommon effect of common infections."

Infection is an established risk factor for ischemic stroke in adults. In the United States, stroke is the fourth leading cause of death and a leading cause of serious disability among adults.

Provided by American Heart Association

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