AHA Guidelines Released on Stroke in Children

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The first comprehensive guidelines for the diagnosis and management of stroke in children are intended to provide a wide range of clinicians responsible for treating cerebrovascular disease in infants and children with evidence- and consensus-based recommendations, according to the American Heart Association.

"Management of Stroke in Infants and Children," written by a group of experts from the American Heart Association Stroke Council and the Council on Cardiovascular Disease in the Young, was recently released online.

"Only a few centers in the country have a high level of expertise in dealing with stroke in children, and these guidelines share this concentrated knowledge with physicians who don't have access to that expertise," committee chair E. Steve Roach said in an interview.

One important message of the statement is that stroke in children is much more common than is generally realized. Data from the National Hospital Discharge Survey from 1980 to 1998 suggested that the overall risk of stroke from birth through 18 years is 13.5/100,000 and that the rate of hemorrhagic stroke for term infants is 6.7/100,000 per year. Other recent investigations found that neonatal stroke occurs in about 1 in 4,000 live births, with about 80% being ischemic.

Strokes in children differ from those in adults, in that few are associated with atherosclerosis. One similarity, however, is that in both adults and children once the stroke has occurred, no medicine can reverse it, said Dr. Roach, chief of neurology at Nationwide Children's Hospital and professor of pediatric neurology, Ohio State University, both in Columbus.

"However, an aggressive approach to finding out the cause of the stroke is your best chance for preventing stroke No. 2 or 3 and preventing the cumulative pileup of brain damage that will determine whether that child grows into a normally functioning adult," he said.

Among the causes and risk factors for stroke in infants and children discussed in the statement are sickle cell disease, congenital heart disease, and cervicocephalic arterial dissection (Circulation 2008 [doi:10.1161/strokeaha.108.189696]). For sickle cell disease, detailed recommendations are included on primary and secondary stroke prevention.

Management of acute ischemic stroke should include optimal hydration and correction of hypoxemia and hypotension. Periodic transfusions are recommended for children aged 2-16 years with abnormal transcranial Doppler findings, and those with a confirmed cerebral infarction should be on a program of red cell transfusion with measures to prevent iron overload.

For hemorrhagic stroke, recommendations include noninvasive testing and standard cerebral angiography if needed, along with stabilizing measures such as controlling hypertension and seizures and managing increased intracranial pressure. Surgical evacuation of a supratentorial intracerebral hematoma is not recommended in most circumstances, although in certain selected patients with developing brain herniation or very high intracranial pressure, surgery may be helpful.

With cerebral venous sinus thrombosis (CVST) in children, anticoagulation is reasonable, with the exception of neonates. "Until there is more evidence of safety and effectiveness, anticoagulation is not appropriate for most neonates with CVST," the authors wrote.

Some recommendations are likely to cause controversy, according to Dr. Heather J. Fullerton, who directs the pediatric stroke and cerebrovascular disease center at the University of California, San Francisco. "For example, the guidelines recommend anticoagulation only for neonates who have some evidence of progression of venous sinus thrombosis, either radiographically or clinically, whereas in many institutions neonates with venous sinus thrombosis are routinely anticoagulated," she said in an interview.

Nonetheless, "these are landmark comprehensive guidelines," said Dr. Fullerton, who was not a member of the writing group.

"These guidelines will be helpful in that they express the consensus opinion of a group of experts based on the existing literature and will be extremely useful for clinicians who have struggled with how to manage these patients in the absence of more evidence," she said. ■