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Background

The incidence of pediatric stroke is 2.7 per 100,000 children per year in Western countries. There is no data in Asian children. A Hong Kong Childhood Stroke Registry was established to study the pattern, etiology and prognosis of pediatric stroke in Chinese children in Hong Kong.

Materials and Methods

Stroke is defined as a focal neurological deficit of sudden onset, resulting from irreversible focal ischaemic or hemorrhagic damage to the brain parenchyma secondary to a cerebrovascular disorder. A prospective childhood stroke database was collected during a 12-year period (1991-2002) for children with stroke assessed in the University of Hong Kong affiliated hospitals (Queen Mary Hospital & Duchess of Kent Children's Hospital). Neonatal strokes were excluded. The clinical presentation, etiologies and outcomes were studied.

Results

Altogether the Registry included 50 children (boys:girls = 28:22). The mean age was 5.4 years. The most common presenting clinical features were seizures and hemiplegia. The type of stroke consisted of ischaemia (36) and hemorrhagic type (14). Despite extensive workup for possible underlying causes, 12% were idiopathic (thrombotic (3) & hemorrhagic (3)). For thrombotic stroke (N=18), 11 were vascular origin [moya-moya disease (3), neurofibromatosis (2), fibromuscular dysplasia (1) and post-infectious vasculitis (7)]; 5 were haematological origin [leukaemia (3); thalassaemia (2); and 1 each with severe dehydration and Mitochondrial Encephalopathy Lactic Acidosis Syndrome (MELAS)]. Of those with embolic stroke (N=15), all had underlying congenital heart diseases. For 14 cases with hemorrhagic stroke, 2 had arteriovenous malformation, 7 had bleeding tendency [leukaemia (2), aplastic anaemia (2), hemophilia (2) and Wiskott Aldrich Syndrome (1)] and 2 had more than one risk factors (leukaemia and *E. coli* sepsis; congenital heart disease with streptokinase infusion after cardiac catheterisation). None had sinovenous thrombosis.

Outcome

The mortality rate is 18% (N=9) and 44% had neurological deficit, including mental retardation (11), epilepsy (9) and hemiplegia (14). Five cases had recurrent episodes of stroke.

Summary

Our local stroke registry was different from the Caucasians. The majority had thrombo-embolic stroke due to underlying congenital heart disease. As for hemorrhagic stroke, the majority were due to bleeding tendency. The possible explanation is the high referral rate of pediatric cardiology and haematology/oncology cases in our center. The majority of those who survived had neurological sequelae.