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Global Perspectives

Editor's Note: There are numerous reports on the frequency of cerebrovascular disease in Asia, Europe, North America, and several other countries. But, as Dr. Chin points out, reliable data on stroke incidence and outcomes in sub-Saharan Africa are sparse. Developed countries experience a decline in stroke incidence and mortality rates, while the problem is increasing in sub-Saharan Africa. Dr. Chin has visited Mulago Hospital in Uganda and reports on the care of patients with cerebrovascular disease there. According to Dr. Chin, Mulago Hospital, which has the only CT scanner in Uganda, is the national referral hospital and they see 20–30 stroke patients monthly. Diagnostics, treatment, and prevention are minimal. There are few reports that indicate that the situation is different in the neighboring countries. Dr. Chin's conclusion is clear: The epidemic of stroke in sub-Saharan Africa looms large and it is time to sound the alarm.

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STROKE IN SUB-SAHARAN AFRICA: AN URGENT CALL FOR PREVENTION

According to the latest WHO statistics,[1,2] cerebrovascular disease is responsible for 10.8% of total deaths and 3.1% of the burden of disease worldwide. Age-adjusted stroke mortality rates and disability-adjusted life-years loss rates are 3.5-fold and 3.8-fold higher in low-income countries than in middle-income and high-income countries.[3] With the demographic and epidemiologic shifts now occurring in many developing countries, increased prevalence of risk factors for stroke are anticipated, including hypertension, tobacco use, obesity, unhealthy diets, physical inactivity, and diabetes. A recent systematic review of worldwide stroke incidence showed that stroke incidence has declined by 42% in high-income countries over the 4 decades from 1970–1979 to 2000–2008.[4] During the same period, stroke incidence rose more than 100% in low- to middle-income countries.

Reliable data on stroke incidence and outcomes in sub-Saharan Africa are sparse. In the systematic review noted above, only 1 of the 56 population-based studies included was from sub-Saharan Africa (Nigeria). A few hospital-based reports on early stroke mortality and associated risk factors have been published in the African literature. With fewer than 300 trained neurologists and only a few neurology training programs in sub-Saharan Africa, interest and support of clinical and epidemiologic research on stroke is consequently limited. Although international organizations have provided some support in the form of online curricula, regional workshops, and symposia, much more investment is needed to scale up neurologic capacity.

Acute stroke treatment and care in the poorest countries of sub-Saharan Africa is severely underresourced. My recent teaching visits to Mulago Hospital, the national referral hospital of Uganda (population 32 million), highlight the massive gaps. The neurology inpatient unit admits 20–30 stroke patients monthly who are brought to the emergency room by family members. Many of the patients experience the onset of neurologic symptoms several days or more before admission and travel long distances by public transportation. Mulago is the only government health facility in Uganda that has a CT scanner. There is no MRI unit or equipment for contrast angiography. Since Uganda does not have national health insurance, all patients are expected to cost-share for diagnostic studies. The charge for a brain CT is approximately $60 USD, which is beyond the financial resources of many families. For those who can find the money for a CT, additional diagnostic tests (EKG, carotid ultrasound, echocardiogram) are usually not affordable. Thrombolytics and IV heparin are not available. Older generic oral antihypertensive medications, warfarin, and aspirin are routinely stocked.

Patients with severe dysphagia are given large-caliber nasogastric tubes and fed soups or porridges

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Figure Community hypertension screening in Kampala, Uganda

prepared by family members. Aspiration is a frequent problem. There are no telemetry units to identify cases of atrial fibrillation and other arrhythmias. Neurosurgical consultation is available for emergency decompression of large intracerebral hemorrhages. Inpatient physical therapy services are very limited and basic equipment (quad canes, walkers, wheelchairs) needs to be obtained privately by the patient. Long-term rehabilitation facilities do not exist. Surviving patients with nonambulatory status are at risk for developing life-threatening decubiti at home from lying on the floor or poorly padded beds.

Given these large treatment gaps for acute stroke, there is an urgent need to scale up population-level interventions to address the leading risk factors for stroke in sub-Saharan Africa. The potential impact of such policies and programs is evident in the dramatic decline in stroke incidence and mortality rates in developed countries. The INTERSTROKE study demonstrated the commonality of the main risk factors for stroke worldwide, including sub-Saharan Africa: hypertension, smoking, abdominal obesity, diet, physical activity, and diabetes mellitus.[5] Hypertension was the most important risk factor for all stroke subtypes (odds ratio 2.64). Widespread screening and medical treatment for hypertension would have the greatest near term impact on reducing stroke incidence in sub-Saharan Africa. Inexpensive generic antihypertensive medications (thiazide diuretics, angiotensin-converting enzyme inhibitors, β-blockers) are available in most public and private pharmacies. Lifestyle changes and reduction in salt intake will require coordinated efforts at the community and ministerial levels. The epidemic of stroke in sub-Saharan Africa looms large and it is time to sound the alarm.

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