SUPPLEMENTAL MATERIAL

Supplemental Methods

S1: Classification of stroke etiologic subtype in the Atherosclerosis Risk in Communities Study

Minimum criterion for stroke diagnosis was evidence of sudden or rapid onset of neurological symptoms lasting >24 hours or leading to death, in the absence of evidence for a nonstroke cause. Exclusionary conditions included major brain trauma, neoplasm, coma due to metabolic disorders or disorders of fluid or electrolyte balance, vasculitis involving the brain, peripheral neuropathy, hematologic abnormalities, or central nervous system infection. Etiologic classifications were defined as follows:

(A) Thrombotic brain infarction: Definite thrombotic stroke required either (1) autopsy evidence of a nonhemorrhagic infarct of the brain or (2) evidence from the hospital record of 1 major or 2 minor neurological signs or symptoms lasting at least 24 hours or until the patient died, and CT or MRI findings showing an infarct or area of decreased density (excluding evidence of hemorrhage). A case was considered a probable TBI if 1 major or 2 minor symptoms had sudden onset lasting >24 hours; and CT or MRI findings within the first 48 hours were negative or nonspecific, with no sign of hemorrhage; and a spinal tap was not done, was traumatic, or yielded clear, colorless spinal fluid.

(B) Cardioembolic stroke: Definite CE required either (1) autopsy evidence of an infarcted area in the brain and a source of emboli in a vessel of any organ or presence of an embolus in the brain, or (2) 1 major or 2 minor symptoms showed rapid onset lasting >24 hours and the medical records revealed evidence of valvular heart disease, atrial fibrillation ,or flutter, acute or recent (within 4 weeks) myocardial infarction, cardiac or arterial procedure intracardiac thrombus, or bacterial endocarditis. In this latter case, CT or MRI findings must have shown an area of decreased density indicative of edema or ischemia, with no evidence of hemorrhage. A diagnosis of probable CE was made if there was evidence of 1 major or 2 minor symptoms and medical record review identified a source of cerebral embolus; and if a CT or MRI within the first 48 hours was either negative or nonspecific, with no

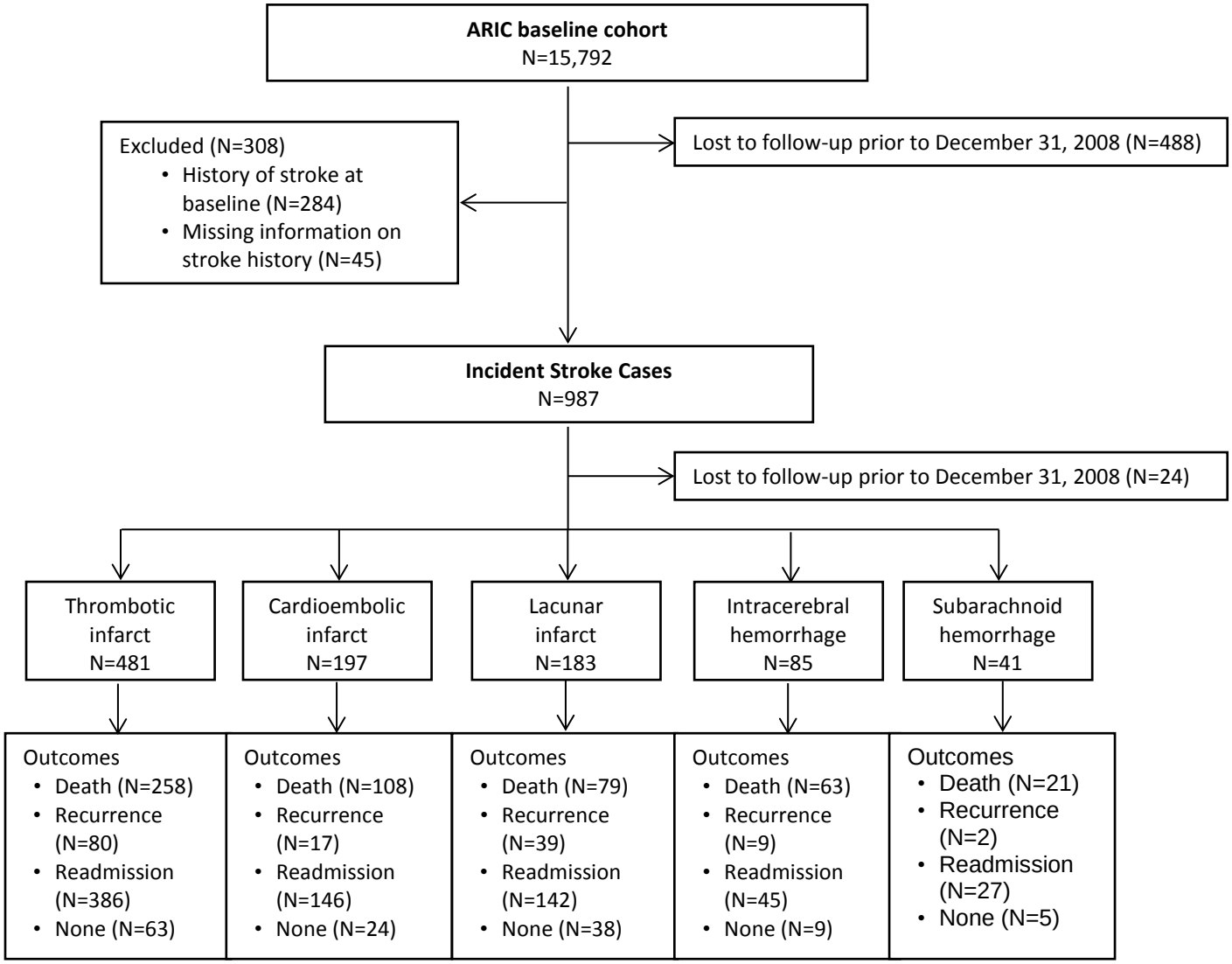
evidence of hemorrhage; and a spinal tap was either not done, was traumatic, or yielded clear, colorless spinal fluid.

(C) Lacunar infarcts: All definite thrombotic brain infarctions were further classified as either lacunar or nonlacunar. Lesion size and neuroimaging reports were evaluated, and a final diagnosis of lacunar infarction was made on the basis of physician review. A definite lacunar infarction was assigned if 2 criteria were met: (1) anatomic findings typical of lacunar infarctions (basal ganglia, brain stem, thalamus, internal capsule, or cerebral white matter) and (2) estimated infarct size of ≤2 cm or an infarct of unstated size. In the rare event that these criteria were met but the neuroimaging report explicitly stated that the infarct was not lacunar, the latter prevailed.

(D) Subarachnoid hemorrhage: Definite SAH required either (1) angiographic identification of a saccular aneurysm as a source of bleeding and bloody or xanthochromic spinal fluid; or (2) CT or MRI findings indicating a blood clot in the fissure of Sylvius, between the frontal lobes, in the basal cisterns, or within a ventricle, with no associated intraparenchymal hematoma; or (3) autopsy or surgical procedures that uncovered a bleeding saccular aneurysm. A diagnosis of probable SAH was made if (1) angiographic evidence of a saccular aneurysm was identified as the source of bleeding and the spinal tap was not done, was traumatic, or was missing; or (2) within a few minutes or hours of symptom onset there was evidence of a severe headache, depressed state of consciousness, meningeal irritation, or retinal hemorrhages, and spinal fluid was bloody or xanthochromic.

(E) Intracerebral hemorrhage: Definite ICH required (1) an area of increased density indicative of ICH identified by CT or MRI; or (2) the demonstration of an ICH at autopsy or during surgery; or (3) in the absence of a technically adequate CT or MRI, there was 1 major or 2 minor symptoms of sudden onset lasting >24 hours, bloody (nontraumatic) or xanthochromic spinal fluid, and evidence from cerebral angiography of a vascular mass without evidence of aneurysm or arteriovenous malformation. A diagnosis of probable ICH was made if (1) a decreased level of consciousness or coma lasted at least 24 hours and (2) a nontraumatic spinal tap was spinal fluid was bloody or xanthochromic and (3) CT or MRI imaging was not performed or was inadequate.

S2: Flow of participants through the study



Supplemental Tables

S3. Characteristics (%) of stroke events by index subtype in the Atherosclerosis Risk in Communities Study

	Stroke Subtype				
Characteristic	**Thrombotic**	**Cardioembolic**	**Lacunar**	**Intracerebral hemorrhage**	**Subarachnoid hemorrhage**
Number	481	197	183	85	41
Person-years of follow-up	2,867.2	714.6	1,069.9	283.0	288.9
Age, median(IQR)	67(62-72)	70(64-75)	67(62-71)	66(60-74.5)	64(57-71)
Sex-race group					
White men	35.8	35.0	26.8	20.0	24.4
Black men	17.7	13.2	21.9	17.7	7.3
White women	25.4	30.0	18.0	30.6	36.6
Black women	21.0	21.8	33.3	30.6	31.7
Medical history at baseline					
Hypertension	56.6	53.8	60.4	64.7	46.3
Diabetes	24.4	28.2	37.6	16.7	4.9
Coronary heart disease	9.0	9.0	7.3	3.6	4.9
Charlson comorbidity index, mean (SD)	2.2 (1.2)	2.7 (1.3)	2.0 (1.1)	1.9 (1.1)	1.7 (1.1)

S4. Distribution of recurrent stroke subtypes according to index stroke subtype

		Recurrent Stroke Etiologic Subtype					
		Thrombotic	**Cardioembolic**	**Lacunar**	**Intracerebral Hemorrhage**	**Subarachnoid Hemorrhage**	**Total**
Initial Stroke Subtype*	**Thrombotic**	57 (71.3%)	11 (13.8%)	9 (11.3%)	3 (3.8%)	0	80 (100%)
	Cardioembolic	2 (11.8%)	13 (76.5%)	2 (11.8%)	0	0	17 (100%)
	Lacunar	20 (51.3%)	7 (18.0%)	11 (28.2%)	1 (2.6%)	0	39 (100%)
	Intracerebral Hemorrhage	3 (33.3%)	1 (11.1%)	2 (22.2%)	3 (33.3%)	0	9 (100%)
	Subarachnoid Hemorrhage	2 (100%)	0	0	0	0	2 (100%)

* Number (%) of initial strokes with no recurrent stroke are as follows: thrombotic, 401 (83.4); CE, 180 (91.4); lacunar, 144 (78.7); IPH, 76 (89.4); SAH, 39 (95.1).