Clinical-MRI correlations in a multiethnic cohort with recent lacunar stroke: the SPS3 trial.

BACKGROUND: Neuroimaging manifestations of small vessel disease are heterogeneous, and correlation with patient features has not been adequately characterized.

AIM: Our goal was to correlate magnetic resonance imaging findings with clinical features in a large multiethnic cohort with recent lacunar stroke.

METHODS: Patient characteristics were correlated with neuroimaging results in the Secondary Prevention of Small Subcortical Stroke study participants.

RESULTS: Among 3005 patients, mean age was 63 years; 62% were men; and 51%, 30%, and 16% were non-Hispanic White, Hispanic, and Black, respectively. Recent lacunar infarcts were distributed between the subcortical hemisphere (31%), thalamus (26%), brainstem/cerebellum (26%), and basal ganglia/internal capsule (16%). Multiple lacunar infarcts (i.e., acute and remote) were present in 40% and associated with increased age (OR 1.3 per 20 years, 95% CI 1.1, 1.5), male gender (OR 1.5, CI 1.3, 1.7), hypertension (OR 1.5, CI 1.2, 1.8), increased systolic blood pressure (OR 1.2 per 20 mmHg, CI 1.1, 1.3), and prior stroke (OR 3.8, CI 2.9, 5.0). Moderate-severe white matter hyperintensities were present in 50% and associated with increased age (OR 1.3 per 20 years, CI 1.1, 1.5), male gender (OR 1.5, CI 1.3, 1.7), hypertension (OR 1.5, CI 1.2, 1.8), increased systolic blood pressure (OR 1.2 per 20 mmHg, CI 1.1, 1.3), and prior stroke (OR 3.8, CI 2.9, 5.0). Infarct location varied significantly by race-ethnicity (P < 0.001), with Blacks and Hispanics having more infarcts in the brainstem/cerebellum than non-Hispanic Whites, and by gender with women more often having...
thalamic lacunes than men (P ≤ 0·001).

**CONCLUSIONS:** In patients with recent lacunar stroke, infarct location and number have distinct associations with gender, vascular risk factors, and race-ethnicity, demonstrating the complex pathogenesis of lacunar stroke and cerebral small artery disease.

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