



Imaging

YIELD OF A STANDARD MULTIMODALITY IMAGING WORK-UP FOR ACUTE ISCHEMIC STROKE IN A MULTI-ETHNIC PATIENT COHORT

Poster Contributions

Poster Sessions, Expo North

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Background: A standard imaging work up for acute ischemic stroke typically consists of brain magnetic resonance imaging (MRI/MRA), Doppler carotid study, transthoracic and transesophageal echocardiography. We sought to examine how often this standard work up yields a clear etiology for the acute stroke in patients over 50 at our teaching hospital with a multiethnic patient population.

Methods: We retrospectively analyzed consecutive patients over 50 years old with acute ischemic stroke documented by MRI over a 4-year period. All patients had undergone this standard multimodality imaging workup. Patients with a suspected etiology of stroke at the time of presentation, such as atrial fibrillation, were excluded.

Results: 345 patients had MRI confirmed acute ischemic stroke of unclear etiology and received all 4 imaging tests. The mean age was 67 years, 41% were female. 45% were White, 24% were Asian, 18% were Hispanic, and 13 % were Black. 39% (136/345) were found to have significant intracranial arterial disease by MRA in the vascular distribution corresponding to the stroke. 18% (62/345) had moderate to severe ($\geq 70\%$) carotid artery atherosclerotic stenosis. TEE demonstrated complex ascending aorta and/or aortic arch plaque in 17% (58/345). There were no intracardiac masses or thrombi diagnosed. Atrial septal anomalies such as patent foramen ovale or atrial septal aneurysm were found in an additional 32% (110/345) of patients; however the causal link of these anomalies with acute stroke remains controversial. We found that in 39% of patients (135/345) the likely cause of stroke was not identified by the initial standard imaging work up. Clinical follow up was available in 83 of the total patient cohort; 16% (13/83) developed paroxysmal atrial fibrillation within 4 months.

Conclusion: Our findings demonstrate that after initial imaging work-up, the etiology of acute ischemic stroke remains elusive in a significant proportion of our multiethnic patient cohort. Paroxysmal atrial fibrillation is commonly diagnosed during the follow-up period and may be an etiologic factor.