

Proposition: Neurosonology is useful in acute ischemic stroke (AIS) management.
Position: NO

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Neuroimaging is an integral part of acute ischemic stroke management, guiding triage of patients and treatment decisions. Advances in technology have made several different options available, each with its advantages and disadvantages. Ideal properties of an imaging modality would include diagnostic accuracy, high sensitivity and specificity, safety, ease of access and reasonable cost, among others. Transcranial Doppler (TCD) can provide useful information regarding the vessel patency in patients with acute stroke. Its major advantages include safety and the ability to monitor patients in a continuous, dynamic manner. However, there are certain features that significantly limit the practicality and feasibility of its use in the acute setting: It requires the presence of a trained operator which is not feasible on a 24-hour basis and the study interpretation is highly operator-dependent. Moreover, vessel insonation is not possible in 5-10% of patients due to poor bone windows. TCD lags behind CT Angiography in specificity and sensitivity, especially for posterior circulation vessels and for distal branches of the anterior circulation vasculature. It does not provide information on structural aspects of the vasculature such as atherosclerotic plaque burden or vessel tortuosity. An additional potential advantageous property of TCD is the proposed enhancement of fibrinolysis with continuous insonation of the thrombus in conjunction with other lytic therapies. However, relevant clinical trials, including a recent Phase-III study have failed to demonstrate a clinical benefit.