ABOUT THE SEVERITY-BASED STROKE TRIAGE ALGORITHM FOR EMS

Since the release of the endovascular trials in early 2015 demonstrating the efficacy of endovascular thrombectomy (EVT), many healthcare providers and health systems have requested guidance on developing an updated pre-hospital point-of-care triage algorithm for patients with suspected large vessel occlusion (LVO) within current stroke systems of care. In June 2015, the article “Endovascular Clot Retrieval Therapy Implications for the Organization of Stroke Systems of Care in North America” was published in the journal Stroke. The paper recommended the development or revision of EMS and interfacility transfer protocols. Since then, a variety of strategies have emerged, ranging from case-by-case decision-making to EMS policies diverting all suspected acute stroke patients regardless of severity to Comprehensive Stroke Centers (CSC).

The American Heart Association and American Stroke Association (AHA/ASA) requested that its Mission: Lifeline Stroke Committee craft a consensus algorithm that was subsequently reviewed by numerous stroke committees within the organization. This algorithm seeks to balance the benefits of rapid, early access to EVT for patients with suspected LVO with the potential harm of delayed initiation of IV alteplase. Since most patients with stroke will not be candidates for EVT, and because a robust Primary Stroke Center (PSC) network is a vital part of an effective stroke system of care, the algorithm may require tailoring to the needs of the communities that implement it, the population and hospital density, and the available healthcare resources. In addition, overcrowding is a challenge at many current urban CSCs, and the costs of care are often higher at CSCs compared to PSCs. Furthermore, the CSC criteria address many aspects of hemorrhagic stroke care that are beyond the capabilities of even a large PSC, and in some regions it may make sense for a PSC with EVT capability to be a preferred destination among all PSCs if no CSC is available nearby.

No randomized trial data exist to support a firm recommendation on the acceptable delay in arrival at a stroke center when considering re-routing a patient to a CSC. Therefore, the committee felt it was best to err on the side of caution and initially set the additional transport delay to 15 minutes. This relatively short period of time will support the implementation of the algorithm with minimal disruption to the current flow of patients, while giving time for EMS systems to become proficient in the collection and reporting of stroke screens and severity scores, capture of relevant time intervals, and reporting of re-routing cases to permit quality assurance activities and case review. As more data accumulate on the benefits and risks of specific time delay cut points, this algorithm will be updated to reflect the best evidence.

In the absence of new evidence, the known decrease in good outcomes with each 15 minute delay in access to IV alteplase serves as the anchor. In rural areas where there are no stroke centers, or remote villages that cannot access healthcare within a 60 minute drive, means to improve access to EVT may be pursued. No randomized trial data exist to support a firm recommendation on the acceptable delay in arrival at a stroke center when considering re-routing a patient to a CSC.

For more information go to: Heart.org/MissionLifelineStroke

STROKE SCREENING TOOLS

CINCINNATI PRE-HOSPITAL STROKE SCALE (CPSS)

LOS ANGELES PRE-HOSPITAL STROKE SCALE (LAPSS)

STROKE SEVERITY TOOLS

CINCINNATI STROKE TRIAGE ASSESSMENT TOOL (CSTAT)

FIELD ASSESSMENT STROKE TRIAGE FOR EMERGENCY DESTINATION (FAST-ED)

LOS ANGELES MOTOR SCALE (LAMS)

RAPID ARTERIAL OCCLUSION EVALUATION SCALE (RACE)