

Prehospital Management of ELVO

1. Patients with ELVO with anterior circulation stroke secondary to occlusion of the internal carotid artery or M1 segment of the MCA and a corresponding clinical deficit benefit from efficient endovascular embolectomy. Embolectomy needs to be performed as rapidly as possible for the greatest clinical benefit, and is best when performed within 6 hours from onset of symptoms. (AHA class I, level of evidence A)
2. EMS systems within stroke systems of care should have prehospital protocols specific to patients with a high likelihood of ELVO, including identification, transport prioritization, and efficient delivery to comprehensive centers capable of endovascular treatment to minimize treatment delays that can profoundly affect outcome. (AHA class I, level of evidence A)
3. IDENTIFICATION. EMS systems should adopt the use of a field stroke severity scale associated with ELVO (such as 3I-SS, LAMS, RACE, CPSSS, VAN) to identify patients with suspected ELVO and prioritize transport. Further experience and study to determine the optimal field scale should continue. (AHA class I, level of evidence B)
4. IDENTIFICATION/POINT OF CARE TREATMENT. Transcranial ultrasound is a diagnostic and therapeutic method that may identify ELVO in the field and facilitate definitive treatment through prehospital thrombus 'conditioning' or neuroprotection. This strategy will benefit from further experience and study. (AHA class II, level of evidence C)
5. IDENTIFICATION/POINT OF CARE TREATMENT. The mobile stroke unit (STEMO, MSU, MSTU) strategy reduces transport delays and times to treatment for patients with ELVO and may improve outcomes. This strategy will benefit from further experience and study. (AHA class I, level of evidence C)
6. TRANSPORT PRIORITIZATION. Patients with suspected ELVO based on field testing (3I-SS \geq 4, LAMS \geq 4, RACE \geq 5, CPSSS \geq 2, or VAN positive) who are eligible for IV t-PA (LKN <3.5 hours) should be considered for direct transport to a comprehensive center with endovascular treatment capability, bypassing closer facilities without this capability, if the transport difference to the closer facility is less than or equal to 15–30 min. (AHA class I, level of evidence B)
7. TRANSPORT PRIORITIZATION. Patients with suspected ELVO based on field testing (3I-SS \geq 4, LAMS \geq 4, RACE \geq 5, CPSSS \geq 2, or VAN positive) who are ineligible for IV t-PA (LKN >3.5 hours) should be transported directly to a comprehensive center with endovascular treatment capability, bypassing closer facilities without this capability, if feasible. (AHA class I, level of evidence C)
8. EFFICIENT DELIVERY. Patients with suspected ELVO primarily transported to non-endovascular-capable centers owing to large transport time differences or clinical instability should undergo expeditious evaluation and treatment, including non-contrast head CT, possible vessel imaging immediately upon arrival, and administration of IV t-PA (if eligible). Vessel imaging should not delay patient transfer. Rapid transfer to a comprehensive center with endovascular capability to minimize interhospital transfer delays is a priority. A metric proposed to assess transfer processes is the picture to puncture (P2P) time. A P2P of <90 min should be a goal. (AHA class I, level of evidence C)

REFERENCE LINK:

Pride GL et al. "Pre-Hospital care delivery and triage of stroke with emergent large vessel occlusion (ELVO): Report of the Standards and Guidelines Committee of the Society of NeuroInterventional Surgery." *Journal of NeuroInterventional Surgery*. 2017 Aug; 9(8): 802-12. Epub 2016 Oct 5.

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