Cutting-Edge Stroke Intervention and Modern Neurocritical Care: Saving Lives Beyond Expectation

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Vascular neurology has come a long way. In addition to intravenous recombinant tissue plasminogen activator (IV rt-PA), the advent of mechanical thrombectomy (MT) has revolutionized the way acute stroke patients are managed. There are now multiple class I type level of evidences for IV rt-PA and MT. First ECASS III expanded the IV rt-PA to 4.5 hours. Then MT improved outcomes for the first 6 hours of symptom onset demonstrating its superiority compared to IV rt-PA alone. With DIFFUSE 3 and DAWN, we now have indications for intervention all the way out to 24 hours from symptom onset for carefully selected patients with core to penumbra mismatch. Interventions for venous infarct have evolved as well. In addition to conventional IV heparin infusion, we now have intra-sinus, rt-PA injection as well as clot retrieval performed for cerebral venous sinus thrombosis. Saving lives beyond expectation has been possible also with cutting-edge medical devices and technologies that are offered in modern neuro-intensive care unit where multimodality monitoring has enabled clinicians to detect life-threatening neurological emergencies in advance. Data and goal driven neurological resuscitation has revolutionized the way we treat these critically ill and unstable patients with brain and other end organ failures.