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Role of Neuroanesthesiologist in "Thrombectomy Revolution"

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Abstract:

Background: Endovascular mechanical thrombectomy is mainstay of therapy for patients with acute ischemic stroke (AIS). During the last decades we observed the "thrombectomy revolution", it is the one of the most expanding, advancing and challenging clinical field. Still there is ongoing debate of whether the use of general anesthesia (GA) or conscious sedation (CS) might influence functional outcome. The choice is always controversial and remains in the hands of (neuro)anesthesiologist's.

Clinical case-series: We present a single "mothership" center experience that has a high volume neurointerventional level. Last several years half of all procedures were thrombectomies - in average 60 cases per year. We preferred general endotracheal anesthesia, with target controlled infusion (TCI) technique using propofol and remifentanyl, and rocuronium for intubation. Short acting drugs allow rapid neurological examination after procedure. Using this strategy, we avoid excessive BP variability, patient's discomfort and movements are decreased, airway is secured and optimal carbon dioxide control levels are achieved. Three-month Modified Rankin Scale (mRS) is 0-2 in more than 30% of patients.

Discussion: The effect of thrombectomy is very time dependent. Understanding of the current and the future developments in that field should be subject of specific interest and challenge for neuroanesthesiologist. Anesthetic management for this patients is much more than anesthetic plan of sedation or GA. Strategies include an individualized approach to hemodynamic and respiratory parameters, intravascular fluids and neuroprotection that can be essential for a favorable outcome. Taking into account our clinical experience, as well as technical factors, we found GA the most suitable anesthetic technique



for that kind patients.

Learning points: Although optimal anesthetic management for AIS remains controversial, due to lack of evidence from randomized trials, experience and dedication of the team may yield a greater effect on the outcome than an anesthesia technique. In stroke "mothership" center establishing, one of the milestones is creation of a competent neuroanesthesiologist who is able to provide care for that kind patients. As with many aspects of neuroanesthesia, attention to detail is absolutely vital due to the vulnerability of cerebral tissue to hypoperfusion and ischaemia. Drugs fine titration, accurate BP and respiratory function monitoring, good plan in dealing with possible complication and close cooperation with neuroradiologist are essential for favourable outcome.

Biography:

Vladimir Kalousek studied in Department of Radiology at University Hospital Center Sestre milosrdnice, Zagreb, Croatia

Publication of speakers:

1. Janardhan, Vallabh & Janardhan, Vikram & Kalousek, Vladimir. (2020). COVID-19 as a Blood Clotting Disorder Masquerading as a Respiratory Illness: A Cerebrovascular Perspective and Therapeutic Implications for Stroke Thrombectomy. Journal of Neuroimaging. 10.1111/jon.12770.

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