



# SNACC

SOCIETY FOR NEUROSCIENCE  
IN ANESTHESIOLOGY AND CRITICAL CARE

## ARTICLE OF THE MONTH

[General Anesthesia vs. Conscious Sedation for Endovascular Treatment in Patients With Posterior Circulation Acute Ischemic Stroke An Exploratory Randomized Clinical Trial](#)

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Welcome to the December AOTM! The article chosen for this month focuses on a comparison between general anesthesia and conscious sedation for endovascular treatment in patients with posterior circulation ischemic stroke. This article is about the study result of Choice of Anesthesia for Endovascular Treatment of Acute Ischemic Stroke in Posterior Circulation ([CANVAS II](#)) trial. It's the first randomised control trial to compare anesthetic management in patients with posterior circulation stroke during endovascular therapy. Our commentary comes from Dr Surya Kumar Dube from All India Institute of Medical Sciences (AIIMS) in New Delhi, INDIA.

Dr Surya Kumar Dube (MBBS, MD, DM) is an Additional Professor in the department of Neuroanaesthesiology and Critical Care. His fields of interest are neuroanaesthesiology, neurocritical care, neurotrauma and neurophysiological monitoring. He also has committee involvement in educational committee and patient safety group

As always, we encourage our readers' input on this topic on the SNACC [Twitter](#) feed, or on [Facebook](#).

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# Commentary:

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Worldwide stroke is one of the major causes of death and disability.<sup>1</sup> Acute ischemic stroke (AIS) is far more common than hemorrhagic stroke. Several recent clinical trials have revealed the safety and efficacy of endovascular therapy (EVT) in anterior circulation AIS. However, the role of EVT in ischemic stroke involving posterior circulation is still not well established. This is probably due to inconsistencies in the results of recently published studies. Few studies reported no significant difference between EVT and medical therapy while other studies found that EVT was better than medical therapy alone.<sup>1,2,3</sup> Nevertheless, it is equally important to know about the anesthetic management in patients undergoing EVT for posterior circulation stroke and its impact on the functional outcome. Unfortunately, literature regarding the effect of anesthetic technique i.e. general anesthesia (GA) or conscious sedation (CS) on final outcome in posterior circulation stroke is limited. The authors planned this randomized control trial (RCT) to compare functional outcomes in patients with acute posterior circulation stroke undergoing EVT with either CS or GA. The study outline is mentioned below:

**OBJECTIVE:** The objective of this RCT was to examine whether conscious sedation (CS) is a feasible alternative to general anesthesia (GA) during endovascular treatment in patients with acute posterior circulation stroke.

**METHODOLOGY:** This is a randomized parallel-group exploratory trial with blinded end point evaluation. Study duration was from March 2018 to June 2021. Adult patients older than 18 years with acute posterior circulation stroke were enrolled, randomized, and monitored for 3 months (90days). A total of 210 patients were admitted with acute ischemic posterior circulation of which 93 were recruited. Among the recruited patients, 87 were included and randomized to receive either GA (43 patients) or CS (44 patients) for EVT.

- Primary end point of the study was functional independence at 90 days as evaluated with the modified Rankin Scale (mRS). Blinded observers evaluated the mRS.
- Secondary outcomes included in this study were changes in NIHSS score from baseline to 30 and 90days after randomization; modified treatment in cerebral infarction (mTICI) score at baseline and after treatment;

conversion rate; all-cause mortality and proportions of complications up to 90 days after randomization; and time-related outcomes, such as treatment time, length of hospital and intensive care unit (ICU) stay, and time from onset to door and adverse events, including hypotension, dysphoria or motion, pulmonary infection, deep vein thrombosis, and hemorrhagic transformation.

**RESULTS:** Mean age of the study population was 62±12 years. Majority of the patients were males (81.6%). The overall baseline median National Institute of Health Stroke Scale (NIHSS) score was 15 (12-17). In the CS group, 13 patients (29.5%) ultimately received GA either due to severe agitation or decrease in oxygen saturation. Seven patients in the GA group (16.3%) and 5 in the CS group (11.4%) received intravenous thrombolysis. In terms of primary end point, CS group patients had a higher incidence of functional independence but the difference was not significant between the 2 groups (48.8% vs 54.5%; risk ratio, 0.89; 95% CI, 0.58-1.38; adjusted odds ratio [OR], 0.91; 95% CI, 0.37-2.22). Patients in GA group performed better in successful reperfusion (95.3% vs 77.3%; adjusted OR, 5.86; 95% CI, 1.16-29.53). The CS group had a lower requirement for assisted ventilation than the GA group (72.1% vs 40.9%). The incidence of hypotension was more in GA group (53%) as compared to CS group (15.9%). Other secondary outcomes were not significantly different between the two groups.

**CONCLUSION:** The authors concluded that CS was not better than GA for the primary outcome of functional recovery and was perhaps worse for the secondary outcome of successful reperfusion in patients with posterior circulation ischemic stroke.

**STRENGTH:**

Study was carried out in hospitals with trained personals for stroke management. The authors attempted to maintain various intra procedural parameters like hemodynamics, oxygenation, ventilation as per the consensus statement from the Society for Neuroscience in Anesthesiology and Critical Care (SNACC).<sup>4</sup>This study tried to reduce the potential influence of confounding factors by excluding patient who were already intubated before the procedure.

**LIMITATIONS:**

There are certain limitations of this study. Since the study was conducted in only 2 hospitals which had considerable experience in managing these kinds of cases, the study results cannot be extrapolated to other patient population. The small sample size may has influenced the outcome of the study. A larger study population might have different results. The study used two drugs i.e., propofol and remifentanil for CS and GA. Hypotension is reported to be more in GA

group. Different anesthetic agents and types of anesthesia (total intravenous anesthesia/ balanced anesthesia with inhalational agent or a combination) may influence intra procedure hemodynamics and possibly the outcome.

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