

Supplementary Online Content

Simonsen CZ, Yoo AJ, Sørensen LH, et al. Effect of general anesthesia and conscious sedation during endovascular therapy on infarct growth and clinical outcomes in acute ischemic stroke: a randomized clinical trial. *JAMA Neurol*. Published online January 16, 2018. 10.1001/jamaneurol.2017.4474

eAppendix. Anesthesia Protocol

eTable. Safety Outcomes

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Anesthesia Protocol

Prior to trial initiation, CS and GA were both standard anesthetic approaches during EVT at our institution. Per our institutional protocol, CS was preferred if patients appeared cooperative, without uncontrolled movement and with a patent airway. Anesthesia was provided by a neuroanesthesiologist and an anesthetic registered nurse.

In the neurointerventional suite, patients in the CS arm received a fentanyl bolus of 25-50 μ g, which was repeated as necessary. A propofol infusion of 1-2mg/kg/hr. was initiated, and adjusted as required.

For patients in the GA arm, rapid sequence intubation with suxamethonium (bolus 0.5-1mg/kg), alfentanil (bolus 0.02-0.03mg/kg) and propofol (bolus 1-5mg/kg followed by 2-10mg/kg/h) was performed. Endotracheal intubation was followed by mechanical ventilation with attempted normoventilation. Anesthesia was maintained with propofol (2-10 mg/kg/h) and remifentanyl (0.2-1 μ g/kg/min). For both CS and GA, the final dosage and combination of abovementioned anesthetic drugs were on discretion of the attending neuroanesthesiologist. If possible, patients were extubated in the neurointerventional suite immediately after the procedure.

Blood Pressure Measurements and Thresholds

Invasive arterial blood pressure measurements including systolic (SBP), diastolic and mean arterial pressure (MAP) were measured every minute throughout the procedure using a radial artery catheter. Following the procedure, the neuroanesthesiologist calculated the number of minutes the patient was below the prespecified blood pressure thresholds and manually recorded blood pressure measurements for every minute during the first 5 minutes followed by measurements for every 5 minutes. Data was stored in a database.

Decreases in blood pressure were treated with vasopressors (ephedrine/phenylephrine) to maintain blood pressure within recommended limits (SBP >140mmHg, MAP >70mmHg).

Patients with Delayed Extubation

Patients were extubated in the neurointerventional suite immediately after the procedure. However, further sedation and mechanical ventilation was required at the neurointensive care unit for two patients from the GA group and one patient who crossed over from CS to GA group. These patients were extubated after 16, 22 and 72 hours respectively. Reasons for delayed extubation were respiratory insufficiency (n=1), insufficient emergence from anesthesia (n=1) and cerebral hemorrhage (n=1),

Both GA and CS patients were generally observed for two hours in the neurointensive care unit before transfer to the stroke unit.

Anesthetic Doses in the Two Groups

Patients in the GA group were anesthetized with either propofol/remifentanyl or propofol/remifentanyl/fentanyl. Patients in CS group were sedated with a combination of propofol infusion and bolus fentanyl or fentanyl alone. The choice of deviating from the study anesthesia protocol was at the discretion of the attending anesthesiologist.

Doses of propofol is presented as mg/kg and remifentanyl as $\mu\text{g}/\text{kg}$. Doses of fentanyl are presented as μg . Values are median total dose with interquartile range in brackets.

	GA (n=65)		CS (n=63)		
	Propofol/ Remifentanil (n=51)	Propofol/ Remifentanil/ fentanyl (n=14)	Propofol/ Fentanyl (n=47)	Propofol (n=6)	Fentanyl (n=10)
Propofol (mg/kg)	4.9 (3.6-6.4)	4.5 (2.9-5.5)	0.9 (0.5-1.4)	2.8 (1.8-4.0)	
Remifentanil (µg/kg)	14.7 (9.0-20.5)	12.2 (4.0-19.3)			
Fentanyl (µg)		50 (50-100)	75 (50-100)		50 (50-100)

eTable. Safety Outcomes

	General anesthesia (n=65)	Conscious sedation (n=63)	P-value
Symptomatic ICH	2 (3.1%)	1 (1.6%)	>.99
90-day mortality	5 (7.7%)	8 (12.7%)	.35
Target vessel injury*	0	0	>.99
Access vessel injury*	0	0	>.99
Clot migration to previously unaffected territory	10 (15.4%)	6 (9.5%)	.32

* Vessel injury includes dissection, perforation, or severe vasospasm. ICH: Intracerebral hemorrhage.