Letter to the Editor

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Letter by Schönenberger et al Regarding Article, “Type of Anesthesia and Differences in Clinical Outcome After Intra-Arterial Treatment for Ischemic Stroke”

To the Editor:

With great interest and appreciation, we have read the above named article by van den Berg et al1 on a retrospective post hoc analysis showing highly significant benefits of alternative sedation forms compared with general anesthesia (GA) within the thrombectomized Multicenter Randomized Clinical Trial of Endovascular Treatment for Acute Ischemic Stroke in the Netherlands (MR CLEAN) patient population. The authors have to be commended for putting this extra focus on their breakthrough trial. We would like to add and emphasize several points of interest to their discussion of this important aspect of peri-interventional endovascular stroke treatment.

As cited by the authors, a recent systematic review and meta-analysis of 9 other retrospective studies concluded that conscious sedation (CS) for endovascular stroke treatment is associated with lower mortality, better functional outcome, better recanalization, and lower respiratory complications compared with GA, at no difference in procedural complications or procedure time. Because potential selection bias was seen in several of these studies, a noteworthy recent propensity score analysis by McDonald et al2 further supports the potential benefits of CS, although GA was still widely preferred by interventionalists. Endovascular stroke treatment patients from a national database were matched 507 (CS): 507 (GA); patients under CS had decreased in-hospital mortality, rates of pneumonia, hospital costs, and lengths of stay compared with those under GA. A task force of the Society for Neuroscience in Anesthesiology and Critical Care in association with the Neurocritical Care Society recently published a useful consensus article on the Anesthetic Management of Endovascular Treatment for Acute Ischemic Stroke.3

The reasons for the suggested benefits of CS are uncertain. van den Berg et al1 saw the major factor in a 20-minute GA-related time delay. Although possibly relevant in MR CLEAN, GA-related time delay was not found significant in several other retrospective studies. Other potentially detrimental effects of GA may be inappropriate selection of patients, effects of drugs, compromised cerebral perfusion by hypotension, etc. In the present publication, 70 of 348 patients received GA, and only 7 of these because of documented declined consciousness, agitation, or respiratory insufficiency. The other 63 were treated as customary in particular centers, for unclear reasons. Data on peri-interventional management aspects addressing the putative pathomechanisms named above are only scarcely reported and leave the latter uncertain.

As the authors emphasize, their analysis is yet another retrospective study on the controversy GA versus CS. Despite the considerable body of evidence to date, cautious judgment is warranted. For instance, it is likely that many centers have not applied a strict GA protocol focusing on cerebral penumbra–directed hemodynamics.

Therefore, to really clarify whether CS is feasible, safe and superior to GA during endovascular stroke treatment, it is high time for randomized trials on this subject. In addition to the Swedish study Sedation Versus General Anesthesia for Endovascular Therapy in Acute Stroke-Impact on Neurological Outcome (ANSTROKE) quoted by the authors, another monocentric trial, General or Local Anaesthesia in Intra Arterial Therapy (GOLIATH, NCT02317237) is ongoing. The third is the Sedation versus Intubation for Endovascular Stroke Treatment trial (SIESTA, NCT02126085) that we started at our own stroke center in April 2014. The study protocol has recently been published4 and may be helpful as a practical template for installing local standard operating procedures within the framework of the Society for Neuroscience in Anesthesiology and Critical Care/Neurocritical Care Society recommendations. We hope that others will join in addressing this important question of optimal peri-interventional sedation prospectively to hopefully generate consistent, generalizable evidence.

Disclosures

Dr Hacke received travel grants and speaker honoraria from Boehringer, and reports membership in the SWIFT PRIME steering committee (Covidien). Dr Bösel received travel grants and speaker honoraria from Covidien and Sedana. Dr Schönenberger reports no conflicts.

Silvia Schönenberger, MD
Werner Hacke, MD
Julian Bösel, MD
Department of Neurology
University Hospital Heidelberg
Heidelberg, Germany

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Silvia Schönenberger, Werner Hacke and Julian Bösel

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