Response to Letter Regarding Article, “Hypotension During Endovascular Treatment of Ischemic Stroke Is a Risk Factor for Poor Neurological Outcome”

We appreciate the comments from Drs Zhang, Zhang, and Xu1 and their interest in our recent article,2 in which we demonstrated that intraprocedural hypotension is an independent predictor for poor neurological outcome in patients with acute ischemic stroke undergoing endovascular therapy in general anesthesia (GA). They suggest that other factors than hypotension, for example, increases in central venous pressure, induced by GA and endotracheal intubation, could contribute to impaired cerebral perfusion pressure during the procedure. We are not aware of any reported data on the effects of GA on central venous pressure during this procedure. It has been shown in healthy volunteers, however, that GA with sevoflurane or isoflurane and controlled ventilation, if anything, decreases central venous pressure in addition to the hypotensive effect of these volatile anaesthetics.3 We therefore think that it is less likely that central venous pressure increases during GA for endovascular therapy in acute ischemic stroke.

We agree with Zhang et al that 1 major disadvantage with GA for this procedure is the difficulty to monitor neurological deterioration, but we do not agree that the poor outcome was associated with higher age or more comorbidity. There were no significant differences between the good and the poor outcome groups with respect to age and incidences of hypertension, atrial fibrillation, ischemic heart disease, diabetes mellitus, smoking, hyperlipidemia, or obesity. Indeed, National Institutes of Health Stroke Scale on admission was significantly higher in the poor outcome group and National Institutes of Health Stroke Scale was also an independent predictor of poor outcome (modified Rankin Scale score>2) with an odds ratio of 1.17 (95% confidence interval, 1.04–1.33; P=0.012). Importantly, however, when you adjust for differences in National Institutes of Health Stroke Scale, hypotension during the procedure could independently predict poor outcome with an odds ratio of 2.74 (95% confidence interval, 1.04–7.20). Thus, our data, albeit retrospective with all its limitations, strongly support the negative impact of intraprocedural hypotension for poor neurological outcome in endovascular therapy for ischemic stroke. In an attempt to clarify which of the 2 techniques, GA or continuous sedation, is preferable to the other, we are performing a prospective randomized trial comparing GA versus continuous sedation for patients with acute ischemic stroke undergoing endovascular therapy (AnStroke, ClinicalTrials.gov Identifier: NCT01872884).

Disclosures

None.

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