

Reply to "Anaesthesia Technique and Outcomes: The Search for Causality"

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To the Editor,

We thank you for the opportunity to further explain our study and its findings. Dr. Kendall and Dr. Castro-Alves make some valid remarks, which are discussed further below.

First, the study was a retrospective one.¹ There was no predetermined way of choosing the anaesthesia method. The anaesthesiologists chose the technique as they saw appropriate for the individual patient. In general, spinal anaesthesia is the preferred method in lower limb amputation. If there are contraindications for neuraxial anaesthesia and/or analgesia, general anaesthesia should be used. In our study, however, we found out that despite ongoing clopidogrel or INR >1.8 (or INR >1.5 with epidural technique), a significant number of patients still received neuraxial anaesthesia or analgesia. These patients had significantly more cardiac disease than patients with INR within recommended guideline values or no clopidogrel. It seems that at least some anaesthesiologists may prefer neuraxial techniques even if there are contraindications, when planning anaesthesia for morbid patients.

Second, we did not use propensity matching analysis, which is a weakness of our study. Mortality data was not significantly different between the study groups, so we did not make any conclusions in terms of death before 28 days or 1 year. Despite this, our study has value, as it offers new information in a challenging topic of anaesthesia technique and outcomes.

Lastly, we intended to include regional techniques in our study as well. There were, however, only a few cases available during the study period (years 1996 to 2010), which made it impossible to draw any conclusions. Regional anaesthesia group was left out in the end. It is true that neuraxial techniques are giving way to regional anaesthesia and analgesia. Anaesthesiologists should be aware, however, that there is a great need for properly planned and conducted outcome studies in regional techniques as well. They should be compared to neuraxial and general anaesthesia, to make sure that the regional techniques indeed are comparable or even superior in terms of patient outcome. It is an easy thing to say that amputations can be performed with a regional block.² It is much more difficult to claim that regional blocks actually improve outcome. In our opinion, in the field of regional anaesthesia there are too many case reports and too few high-quality studies published.

References

- 1) Niskakangas M, Dahlbacka S, Liisanantti J, Vakkala M, Kaakinen T. Spinal or general anaesthesia for lower-limb amputation in peripheral artery disease - a retrospective cohort study. *Acta Anaesthesiol Scand*. 2018 Feb;62(2):226-233.
- 2) Ueshima H, Otake H. Lower limb amputations performed with anterior quadratus lumborum block and sciatic nerve block. *J Clin Anesth*. 2017 Feb;37:145.