

INVITED COMMENTARY

Is Regional Anaesthesia During Bypass Surgery in High Risk Patients With Chronic Limb Threatening Ischaemia the Columbus Egg?

Cornelis G. Vos^a, Jean-Paul P.M. de Vries^{b,*}

^aDepartment of Surgery, Martini Hospital, Groningen, the Netherlands

^bDepartment of Surgery, Division of Vascular Surgery, University Medical Centre Groningen, Groningen, the Netherlands

Kikuchi and colleagues report in this issue of the journal the outcomes of ultrasound guided nerve blocking (UGNB) compared with general anaesthesia in a propensity score matched retrospective cohort of high risk patients undergoing bypass surgery for chronic limb threatening ischaemia (CLTI).¹ The authors demonstrated a significantly lower rate of heart failure, lower catecholamine indices and infusion volumes, higher mean arterial pressure during induction, faster recovery of fluid and food intake, and decreased rates of delirium in patients treated with UGNB, whereas survival, patency, and limb salvage were similar in both groups.¹ Patient satisfaction was comparable between groups and surgeon satisfaction was better in the UGNB group.¹ When considering the above it is surprising that UGNB is not used widely in lower extremity revascularisation procedures. Perhaps it should be more embedded in current (endo) vascular curricula, especially when taking into account the increasing proportion of older, and multimorbid patients in our vascular practice.

Locoregional anaesthesia potentially has important advantages because of a decreased effect on cardiovascular stability and faster recovery compared with general anaesthesia. However, none of the current guidelines on the management of CLTI patients include recommendations for this type of anaesthesia. A *Cochrane* systematic review published in 2013 compared general anaesthesia and neuraxial (i.e. spinal or epidural) anaesthesia in patients undergoing lower limb revascularisation.² The authors concluded that neuraxial anaesthesia might reduce the rate of pneumonia, but found no differences for mortality or myocardial infarction, and data were insufficient for the other outcomes.² The quality of the evidence was graded low to very low.² Another analysis of 5462 patients treated by lower extremity bypass surgery for CLTI, obtained from the American College of Surgeons National Surgical Quality Improvement Program, found no differences between general anaesthesia and regional anaesthesia techniques,

including UGNB.³ Furthermore, the data had a high risk of selection bias and no recommendations for the preferred type of anaesthesia could be made.³

The lower rate of heart failure and reduced rate of delirium found in the present study is relevant for the population of frequently frail and older CLTI patients. However, the retrospective nature of the study poses a substantial risk of selection bias and confounding. An important limitation of the technique is that it cannot be recommended when a vein from the contralateral leg or upper extremities is required in composite venous bypasses. When considering the implications of the data presented above and the lack of high quality prospective studies, the findings by Kikuchi and colleagues offer potentially interesting new data that justify confirmation in a prospective randomised setting. Such a trial should include patients with CLTI undergoing bypass surgery and focus on mortality, cardiovascular and other complications including pneumonia, delirium, peri- and post-procedural pain scores, and length of hospitalisation as the most relevant outcomes. If the results are in favour of UGNB, we should embrace this technique especially in our frail patients, and it should be included in the guidelines for CLTI treatment.

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* Corresponding author.

E-mail address: j.p.m.de.vries@umcg.nl (Jean-Paul P.M. de Vries).

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