Choice of anaesthesia for elective total knee arthroplasty

Reply from the authors to Dr Chincholkar

Editor—We thank Dr Chincholkar for his letter on our clinical study.1,2 Using an i.v. opioid towards the end of a target-controlled infusion (TCI) anaesthetic is almost to be considered as the modus operandi of this type of anaesthesia. This is due to the fact that remifentanil has a very short-lasting analgesic effect. Hence, this could almost be considered as a part of the TCI technique. It is possible that this could have influenced the postoperative pain scores. This is more of an academic issue since one could argue that TCI and oxycodone could result in a more favourable recovery profile in a fast-track set-up.

We agree that the difference in length of hospital stay (6 h) may not be clinically significant. However, sample size was obviously adequate since we were able to detect a statistically significant difference between the groups.

Nausea and dizziness was monitored at fixed times twice daily (at 08:00 and again at 14:00 h). However, the number of patients having vomited represents the number of vomiting occasions from the previous measuring point.

In conclusion, our study does not show that general anaesthesia (of any kind) is better than regional anaesthesia for patients undergoing total knee arthroplasty (TKA). Our results should be seen in the light of a modern general anaesthetic technique together with a fast-track set-up for patients undergoing elective TKA and it urges for further large randomized trials.

Declaration of interest

None declared.

A. Harsten
Hassleholm, Sweden
E-mail: andreas.harsten@skane.se


doi:10.1093/bja/aeu074

‘State-of-the-art general anaesthesia’ compared with ‘standard-of-care spinal anaesthesia’ for unilateral knee arthroplasty: ethics and philosophical considerations

Editor—We read with interest the study by Harsten and colleagues1 Recovery after total intravenous general anaesthesia or spinal anaesthesia for total knee arthroplasty (TKA): a randomized trial and the accompanying editorial.2 Interestingly, the study’s inclination to entertain qualitative parameters (patient’s preference for anaesthesia technique in the future) along with quantitative outcome measures reflects ‘mixed-methods’ study design,3 an exciting and relatively new methodology appropriate for clinical anaesthesia research. However, although the editorial’s complete new-take on the study, that is, comparative evaluation of the recovery outcome after ‘state-of-the-art’ general anaesthesia (SOTA-GA) vs ‘standard-of-care’ spinal anaesthesia (SOC-SA) in patients undergoing elective TKA, was insightful and broadened the scope of comprehension, it also invoked some ethical issues.

First, not uncommonly in clinical anaesthesiology research, in order to analyse patient outcome responses, one requires to follow both quantitative objective parameters of the anesthetized patient and the qualitative postoperative subjective patient responses. Therefore, an appropriate ‘mixed-methods’ study design has a tacit relevance in anaesthesia outcome research that justifies study objectives and facilitates valid creation of clinical evidence.3

Secondly, ethically, given that width of the line-of-transition between any SOTA and SOC medical intervention techniques (e.g. spinal/general anaesthesia) may vary as per state of available healthcare infrastructure and the backup governance/policy, in the current clinical anaesthesia practice/research context, irrespective of the technique applied, one must ensure that the patients in receipt of anaesthesia do not get harmed (do-no-harm)4 and/or denied the best available care (principle of justice). Further, in the absence of clarity and/or non-availability of consistent scientific evidence as to whether anaesthesiologist’s skill-set, technical gadgetry advantage, or the type of technical intervention impacts SOC-SOTA turnover,5 a SOTA vs SOC comparative effectiveness research (CER)6 in anaesthesia may have an awkward ethical stance whenever an ‘inter-technique’ analysis (SA vs GA) is undertaken. While one may go for ‘intra-technique’, it may be ethically problematic for ‘inter-technique’ evaluation, particularly when one of the techniques is operator-dependent and has a potential for failure (e.g. SA).

In the same regard, probably, an inter-technique ‘SOTA-GA’ vs ‘SOC-SA’ evaluation as undertaken in the study is likely to incur an ethical imbalance wider than is perceived otherwise, an effect with pronounced ramifications for a randomized study.

Collectively, for an authentic outcome analysis research, the IRB investigators have an ethical obligation to closely consider the philosophical gap between two different techniques (SA vs GA) to secure participants’ safety. Also, such a CER study should be accorded appropriate methodology to analyse the outcome


doi:10.1093/bja/aeu073