Reducing the prevalence of chronic post-thoracotomy pain syndrome: is total intravenous anaesthesia superior to inhalation anaesthesia?

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We read with great interest the article written by Song et al. [1]. The authors reported a prospectively randomized study, including 343 patients, regarding the effect of the type of anaesthesia on chronic post-thoracotomy pain syndrome (CPTS). They concluded that compared with inhalation anaesthesia, total intravenous anaesthesia (TIVA) with propofol and remifentanil may reduce the incidence of CPTS. Their results are valuable, because the high incidence of CPTS after thoracic surgery is still a significant clinical problem.

Although the pathophysiological mechanisms of CPTS after thoracic surgery remain unclear, neuropathic pain resulting from intercostal nerve injury seems to be the most important cause of CPTS. Patients with neuropathic pain, identified at 6 months postoperatively, have higher pain intensity and more analgesic consumption during the early postoperative period than other patients with pain [2]. The diagnosis of neuropathic pain depends on the combination of patients’ symptoms, intercostal nerve sensory testing and a DN4 neuropathic pain diagnostic questionnaire. In this study, however, the diagnostic pain is mainly dependent on patients’ oral description, lacking an objective assessment of neuropathic pain. At the early phase, 3 months and 6 months after thoracic surgery, both the pain intensity and the analgesic use did not show any difference between the TIVA group and the inhalation group, respectively. In addition, the incidence of the main pain characteristics between the two groups was not significantly different. Therefore, TIVA does not reduce the intensity of CPTS pain (including neuropathic pain), compared with inhalation anaesthesia. Moreover, TIVA plays a slight role in reducing the prevalence of CPTS (38.2% at 3 months and 33.5% at 6 months postoperatively), since the incidence of chronic pain complaints after thoracic surgery are reported as 25–60% previously [3]. More importantly, we find that the pain incidence at 6 months in the inhalation group (group II) in Table 3 (86/170) is inconsistent with the corresponding value in Table 4 (57/170). We do not know which is the correct figure regarding the number of patients with CPTS pain in the inhalation group. If the figures in Table 4 are correct, there would be a comparable incidence of the CPTS at 6 months postoperatively in both anaesthesia groups.

Undoubtedly, multimodal analgesia during thoracic surgery can help prevent CPTS [4, 5]. As described in the article, pre-emptive analgesia, epidural analgesia combined with low-dose remifentanil and postoperative analgesic use in the TIVA group are all methods that have beneficial effects in preventing CPTS. In the inhalation group, however, only sevoflurane was used to maintain anaesthesia. In fact, due to its weak analgesic effect, we seldom use only inhal anaesthetics during thoracic surgery in clinical practice. And thus, the prevalence of CPTS (56.5% at 3 months and 50.6% at 6 months postoperatively) in the inhalation group is less significant clinically. If low-dose remifentanil is used in the inhalation group, as it is in the TIVA group, the incidence of CPTS in the inhalation group would probably decrease.

REFERENCES


