Editorial

Commentary on "Comparison of Recovery Profiles of Patients Undergoing Endoscopic Lumbar Discectomy under Desflurane, Propofol, or Sevoflurane Anesthesia. A Randomized, Prospective, Clinical, Comparative Study"

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Cognitive changes and psychomotor recovery affecting patients, following anesthesia and surgery, have been recognized for more than 100 years. Various studies have been conducted pertaining to this, demonstrating conflicting results with few showing propofol having better profile, while few skewing in for inhalational being better for postoperative psychomotor recovery.[1] Surprisingly, no study till date has compared the effect of propofol, sevoflurane, and desflurane agents on recovery of cognitive and psychomotor functions simultaneously after daycare surgeries. In this study "Comparison of recovery profiles of patients undergoing endoscopic lumbar discectomy under desflurane, propofol or sevoflurane anesthesia. A randomized, prospective, clinical, comparative study,"[2] the authors documented that the patients in the three groups had similar psychomotor and cognitive functional impairments with comparable recovery time periods postoperatively. They also noted that the emergence and early recovery were faster in the desflurane group.

This is a single-center prospective randomized trial wherein 75 patients were analyzed out of 79 being enrolled with 25 patients in each group. Seventy-five adult American Society of Anaesthesiologists (ASA) I and II patients being operated for endoscopic lumbar discectomy under different anesthetic regimens, that is, desflurane (D), propofol (P), and sevoflurane(S), were enrolled and were subjected to Treiger Dot Test (TDT), Digit Symbol Substitution Test (DSST), and Mini Mental State Examination (MMSE) preoperatively and at specified intervals postoperatively. Their emergence and early recovery times, complications, and satisfaction levels were also observed.

The authors noted no difference in the TDT and DSST scores in the post recovery period at 15 minutes, 30 minutes, 1st hour, 2nd hour, 3rd hour, and 4th hour, respectively. MMSE scores in the post recovery period in the different groups were found to be similar ($p > 0.05$). In patient undergoing laparoscopic cholecystectomy with preoperative MMSE scores >23 under both groups (propofol and sevoflurane), it was observed that postoperatively there was no difference in MMSE scores at 4 hours, similar to the present study.[3] The study mentions of early recovery times and lesser emergence duration in desflurane group (8.18 ± 2.26 minutes) as compared with sevoflurane (8.88 ± 2.25 minutes) and propofol (11.35 ± 5.08 minutes). Similar results have been documented in the previous study by Werner et al.[4] Another observation to highlight is the time to achieve Modified Aldrete Score of 9 was similar in all the three groups. Looking at the adverse effects, the authors reported higher incidence of postoperative nausea and vomiting in sevoflurane and desflurane groups in comparison to the propofol group. These findings were similar to the study by Wallenborn et al.[5]

This study warrants mention of merits and few demerits as well. The strengths are that it was adequately powered and was conducted in a uniformity. The limitations worth stating are that all the three tests used, that is, TDT, DSST, and MMSE, have a practice effect and the scores improve with repetitions giving rise to practice effect bias. Though the authors have tried to use different patterns each time, still the bias cannot be completely ruled out. The study is not double blinded that could have made the methodology more robust. Finally, the

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long-term outcomes could not be commented upon as the patients were not followed up in the study.

In conclusion, the study throws enough light on the recovery patterns of short-term cognition and psychomotor functions for daycare surgeries with either sevoflurane, desflurane, or propofol for the maintenance of anesthesia. All three modes of anesthesia are equally effective with comparable results.

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Conflict of Interest
None declared.

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