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Propofol induce higher amnesic effect than sevoflurane and isoflurane anaesthesia in the rat.

Bellido I, Bellido MV, Fernandez-Baena M, Garcia-Perez A and Gomez-Luque A.

D. Pharmacology and Clinical Therapeutic. Medicine School. S. Anaesthesia, Carlos Haya University Hospital and Virgen de la Victoria University Hospital, Malaga, Spain.

Post-operative amnesia is frequently referred by the patients, thus determine which anaesthetics may induce more amnesic effect will provide us to select the most appropriate compound for each patient. Aim: To quantify the postoperative amnesic effects of Propofol vs. Sevoflurane vs. Isoflurane anaesthesia.

Male Sprague-Dawley rats (N=42, 6 months old, weight 231 ± 41 g, Charles River-Spain) were randomized into 7 groups (6 rats/group) which received: sham volatile (none), sham iv (saline), Propofol (PRO, induction dose 15 mg/kg-1 followed by $0,8 \text{ mg. kg-1. min-1}$), Sevoflurane (SEVO) and Isoflurane (ISO) groups (received 1 minimum alveolar concentration (MAC) (2% inspired concentration SEVO or ISO in oxygen/1 h, respectively), PRO-SEVO and PRO-ISO groups (received the same referred doses in association). Anaesthesia was done during 1 h. The 8 arms radial labyrinth test was done 24 h post-anaesthesia to quantify the memory function. The open-field test was used to quantify the locomotor activity.

Labyrinth test data showed a reduction of the retrograde memory in the treated groups (percentage of change vs. Sham): Increased reaction time in first accurate choice PRO+ISO +85.1% >PRO+SEVO +66.3% >PRO +60.5% =ISO +54.6% >SEVO +43.2% ($p < 0.05$). None of the treatments affects the locomotor function (open-field test).

Conclusion: Propofol induce higher memory deficit than Sevoflurane and Isoflurane.

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