Rapacuronium bromide: an alternative to suxamethonium chloride?

The aminosteroid neuromuscular blocker rapacuronium bromide* shows a rapid onset of action with a relatively short duration of effect in patients undergoing anaesthesia with fentanyl and propofol, report US-based researchers. They add that '*rapacuronium at a dose of 1.5 mg/kg appears to be a suitable alternative to succinylcholine* [suxamethonium chloride]. *Higher doses appear to decrease onset time further at the expense of a longer duration*'.

125 patients were randomised to receive rapacuronium bromide 1.5 mg/kg (n = 35) or 2.5 mg/kg (31), suxamethonium chloride 1 mg/kg (31), or mivacurium chloride 0.25 mg/kg, following induction of anaesthesia with fentanyl and propofol.**

Percentage of the first twitch of the train-of-four (T_1) at 60 seconds was similar among rapacuronium bromide and suxamethonium chloride recipients, but significantly lower compared with mivacurium chloride recipients. In addition, times to 80% T_1 depression were similar among rapacuronium bromide and suxamethonium chloride recipients, but significantly shorter in duration in all rapacuronium bromide, compared with mivacurium chloride, recipients. Time to peak effect (or maximum block) was similar between rapacuronium bromide 2.5 mg/kg and suxamethonium chloride, recipients, but significantly longer in rapacuronium bromide 1.5 mg/kg, compared with suxamethonium chloride, recipients, and significantly longer in mivacurium chloride, compared with all rapacuronium bromide, recipients.†

Nausea and vomiting was reported significantly less frequently by rapacuronium bromide, compared with suxamethonium chloride and mivacurium chloride, recipients.

* Organon; registered in the US for muscle relaxation

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† Time to peak effect was defined as the first twitch of the train-of-four that showed no further decrease over 3 consecutive trains-of-four after study drug administration.

Miguel R, et al. Evaluation of neuromuscular and cardiovascular effects of two doses of rapacuronium (ORG 9487) versus mivacurium and succinylcholine. Anesthesiology 91: 1648-1654, Dec 1999 800801549