26276 - LIDOCAINE AIRWAY TOPICALIZATION IN THE MORBIDLY OBESE

Paul M. Wieczorek MDCM, Thomas Schricker, MD PhD; Bernard Vinet, PhD; Steven B Backman; Royal Victoria Hospital And McGill University, Montreal, QUEBEC, Canada

INTRODUCTION: Appropriate airway management in the morbidly obese is critical.

We evaluated the technique of airway topicalization with atomized lidocaine for awake fiberoptic intubation in the morbidly obese using two different doses of local anesthetic.

METHODS: Following research ethics board approval and informed consent, morbidly obese patients undergoing gastric bypass received either 2% or 4% lidocaine (40 ml) for airway topicalization. Patients were judiciously sedated with midazolam and fentanyl following aspiration prophylaxis (sodium citrate 0.3M 30ml PO; metoclopramide 10mg; ondansetron 4mg; glycopyrrolate 0.3 mg iv). Lidocaine was administered orally via an atomizer using high-flow oxygen (nares clamped). Awake fiberoptic intubation proceeded, followed by induction of general anesthesia (sevoflurane) and muscle paralysis (rocuronium). End-points studied included serial plasma lidocaine concentrations, blood pressure and heart rate changes, and patient tolerance to placement of the Ovassapian airway, bronchoscopy and endotracheal tube (0 = no response; 1 = some gagging; 2 = not tolerable). Unpaired t-tests and Mann-Whitney U tests were used for analysis.

RESULTS: Topicalization was achieved with 2% (11 patients) or 4% (11 patients) lidocaine. The two groups were indistinguishable on the basis of age (36.1 ± 4.7 [mean $\pm$ SEM] vs 41.8 ± 2.7 yrs), height (164.1 ± 3.2 vs 168.1 ± 2.4 cm), weight (137.8 ± 6.1 vs 145.5 ± 7.4 kg) and BMI (50.1 ± 1.3 vs 51.6 ± 2.2 kg/m²). Fentanyl doses were similar (190 ± 18 vs 161 ± 18 μ g), while patients in the 4% cohort received more midazolam (2.0 ± 0.0 vs 2.6 ± 0.2 mg, $p < 0.01$). Time for topicalization and airway management (start of topicalization to endotracheal tube cuff inflation) were similar (4.7 ± 0.4 vs 4.5 ± 0.5 min; 7.8 ± 0.7 vs 7.7 ± 0.7 min, respectively). Peak plasma concentration occurred within 10 minutes of termination of topicalization and was significantly lower in the 2% group (Figure). Blood pressure and heart rate in both groups did not change significantly during topicalization and intubation. Excellent intubating conditions were achieved in both groups as indicated by the tolerance scores for the Ovassapian airway (9 vs 10 patients had 0 response, 2% vs. 4% respectively), bronchoscopy (9 vs 9 had 0 response), and endotracheal tube placement (7 vs 9 had 0 response). Responses were mild gagging in all cases but one in the 2% cohort who did not tolerate bronchoscopy and intubation. These differences did not reach statistical significance.

DISCUSSION: This study evaluated airway topicalization with atomized lidocaine for awake fiberoptic intubation in the morbidly obese. This technique is efficacious, rapid, and safe. Compared with 4% lidocaine, the 2% dose provides acceptable intubating conditions in most cases and produces lower plasma lidocaine levels.