

Tracheal intubation with high-dose alfentanil (40-60mcg/kg) is a viable alternative to succinylcholine – A meta-analysis

Authors: Carmen Dang, Tony Chow, Colin Goodchild, Elean To, John McNeil.

Poster presentation (P0623) at the 13th World Congress of Anaesthesiologists Paris, 21st April 2004

Purpose: Rapid control of the airway with prompt respiratory recovery is advantageous in many clinical situations. Succinylcholine (sux) remains the gold standard in this regard. A meta-analysis of the literature relating to alfentanil in tracheal intubation is present here.

Methods: The computer strategy (**double blind\$ or random\$**).af was used to identify double blinded, randomized trials comparing alfentanil to sux. This strategy has been shown to have a sensitivity of 97% and specificity of 98%.¹ Intubation success rates and conditions with sux (1-2 mg/kg) were compared to moderate-dose alfentanil (10-30 mcg/kg) and high-dose alfentanil (40-60 mcg/kg) techniques. Statistical analyses were conducted using Review Manager 4.2.3 ©Cochrane Collaboration. The Random Effects Model was used to calculate the relative risk (RR) and 95% confidence intervals (CI).

Results: Eleven studies were identified (total of 828 patients). Eight studies (679 patients) compared alfentanil (10-30) to sux. The RR was 0.86 (95%CI 0.76 to 0.97) for successful intubations. Therefore, there was a significant failure rate when alfentanil (10-30) was used. Three studies (164 patients) compared alfentanil (40-60) to sux. The RR was 0.97 (95%CI 0.90 to 1.04) and 0.95 (95%CI 0.89 to 1.01) respectively for successful intubations and excellent conditions. Hence, there were no statistical or clinical differences between the two techniques.

Discussion: Our results suggest that the high-dose alfentanil technique offers a viable alternative to sux. This technique would be suitable in short surgical procedures requiring muscle relaxation and intubation, such as diagnostic laparoscopy, or where sux is contra-indicated. It also offers cardio-vascular advantages in obtunding the heart rate and blood pressure response to intubation.

Reference:

1 Chow T, To E, Goodchild C, McNeil J. A simple, fast, easy method to identify the evidence base in pain relief research: Validation of a computer search strategy used alone to identify quality randomized controlled trials. *Anesthesia & Analgesia* 2004: in press.