Category :**Sedation - analgesia**

A114 - ***Impact of continuous intravenous opioids in mechanically ventilated adults: a systematic review and meta-analysis***

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Introduction:

Continuous intravenous (IV) opioids are widely used in ICU adults for pain, sedation, and facilitate mechanical ventilation despite persistent questions on efficacy and increasing safety concerns (1). We aimed to systematically review and summarize evidence on efficacy and safety of continuous IV opioids in mechanically ventilated ICU adults.

Methods:

We included randomized-controlled trials (RCT) of mechanically ventilated ICU adults comparing continuous IV full opioid agonists versus non-continuous IV opioids. The primary outcome was mechanical ventilation duration. Secondary efficacy outcomes were ICU length of stay (LOS), ICU pain reduction and short-term mortality. The secondary safety outcome was ICU delirium incidence. We performed inverse variance random-effects meta-analyses using the Grading of Recommendations of Assessment, Development and Evaluating Approach.

Results:

We included 10 RCTs enrolling 945 patients. Continuous IV opioids use may increase mechanical ventilation time (3 RCTs, 421 patients, standard mean difference (SMD)=3.63 hours, 95% confidence interval (CI) 2.27 to 4.99, very low certainty), but do not affect ICU LOS (3 RCTs, 358 patients, SMD=0 days, 95% CI -0.03 to 0.04, very low certainty) or ICU pain reduction (5 RCTs, 583 patients, no difference, low certainty). Continuous IV opioids may reduce short-term mortality (3 RCTs, 315 patients, odds ratio (OR)=0.46, 95% CI 0.23-0.92, low certainty) and delirium incidence (3 RCTs, 315 patients, OR=0.28, 95% CI 0.16–0.47, low certainty). Subgroup analysis was not feasible.

Conclusion:

In this review, we found that continuous IV opioids use may increase mechanical ventilation time but reduce short-term mortality and delirium in mechanically ventilated ICU adults. We observed low or very low certainty evidence for outcomes of interest. Large prospective RCTs are required to evaluate the efficacy and safety of continuous IV opioids in ventilated ICU adults.

References:

1. Eadie R, et al. Int. journal of clinical pharmacy. 2023;45(5):1167–75.

Image :

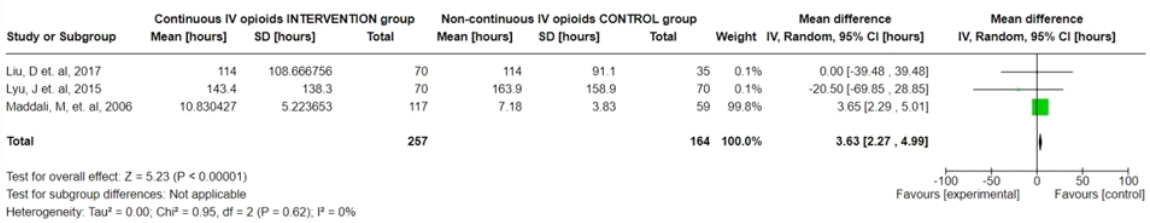

Figure 1 shows the forest plot for mechanical ventilation time using RevMan with inverse-variance random effects model.