

## Anesthésie-Réanimation et dysfonction neurologique

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### Intraoperative ketamine for prevention of neurocognitive disorders after major orthopedic surgery in elderly patients: a prospective multicenter randomized placebo-controlled trial

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#### Position du problème et objectif(s) de l'étude:

Preventive anesthetic impact on the high rates of postoperative cognitive disorders in elderly patients is debated (1,2,3). The Prevention of postOperative Cognitive dysfunction by Ketamine (POCK) study aimed to assess the effect of ketamine on delayed neurocognitive recovery post-surgery.

#### Matériel et méthodes:

This is a multicenter, randomized, quadruple-blind, prospective study. Patients  $\geq 60$  years undergoing major orthopedic surgery were randomly assigned in a 1:1 ratio to receive preoperative ketamine (0.5mg/kg) or placebo in random blocks of size 2 and 4 stratified according to study site, preoperative cognitive status and age. The primary outcome was the proportion of delayed cognitive recovery defined as a decline of one or more standard deviations in neuropsychological assessment according to the DSM-5 on postoperative day 7. Secondary outcomes included the incidence of postoperative neurocognitive disorders and the incidence of delirium, anxiety, and depression three months after surgery. Statistical analyses were performed on an intention-to-treat basis using a logistic regression for binary outcomes.

#### Résultats & Discussion:

Among 301 patients included, 292 (97%) completed the trial. Delayed neurocognitive recovery occurred in 50 (38.8%) patients in the ketamine group and 54 (40.9%) patients in the placebo group (OR [95% CI] 0.92 [0.56;1.51],  $p=0.73$ ). Incidence of postoperative neurocognitive disorders 3 months after surgery did not differ significantly between the two groups nor did the incidence of delirium, anxiety, apathy, and fatigue 7 days and 3 months after surgery. Depression was less frequent in the ketamine group three months after surgery (OR [95%CI] 0.34 [0.13-0.86]).

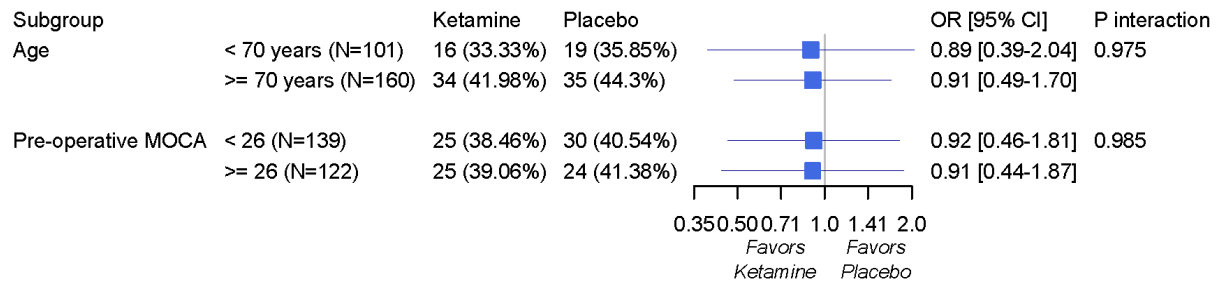
#### Conclusion:

A single bolus of intravenous ketamine does not prevent delayed neurocognitive recovery but may reduce postoperative depression in elderly patients scheduled for major orthopedic surgery.

#### Références bibliographiques:

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ketamine for prevention of postoperative delirium or pain after major surgery in older adults. The Lancet. 2017 (3) Hovaguimian F, et al. Intraoperative ketamine administration to prevent delirium or postoperative cognitive dysfunction: A systematic review and meta-analysis. Acta Anaesthesiol Scand. 2018



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