

## Effects of low dose ketamine on convulsion duration and post electroconvulsive therapy myalgia

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**Introduction:** Myalgia is one of the most common side effects of electroconvulsive therapy (ECT) with unknown mechanisms. Ketamine has been used preemptively in surgical patients as an adjuvant to analgesic treatment because of its possible preventive effect on central sensitization. It also has been used in ECT patients based on this hypothesis that can prolong seizure duration. In current study, we examined this hypothesis that ketamine may attenuate post ECT myalgia by preemptive manner.

**Methods:** According to the DSM4 criteria, 25 major depressive patients were included in a double blind crossover clinical study at the second and third ECT sessions. They were randomly allocated to induction of anesthesia either with Propofol 1 mg/kg plus ketamine 30 mg or with propofol 1 mg/kg plus 2ml 0,09% saline in first study ECT session and vice versa in the next ECT session. Paralysis was achieved with 0.5 mg/kg succinylcholine in two sessions. Assessments included seizure duration and post ECT myalgia.

**Results:** There were 25 patients (15 women and 10 men), with a mean age of 37.8 years, who undergone 100 ECT sessions. The mean duration of seizures in the ketamine and control group was respectively 29 and 28 seconds, and the difference was not statistically significant. Ketamine did not significantly reduce the myalgia in compared to placebo.

**Discussion:** Based on the results of our study, adding ketamine to propofol for induction of anesthesia in patients with major depression who undergo ECT has no effects on seizure duration and post ECT myalgia.

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