

Randomised controlled trial of ketamine augmentation of electroconvulsive therapy to improve neuropsychological and clinical outcomes in depression (Ketamine-ECT study)

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Plain English summary

Ketamine for post-ECT cognitive impairments in severe depression

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Plain English summary

Electroconvulsive therapy (ECT) is the most effective short-term treatment for depression but there are concerns about it causing memory difficulties. ECT may affect memory through a brain chemical called glutamate. Small studies had suggested that ketamine, an anaesthetic drug that blocks some of glutamate's effects, might prevent the memory problems seen after ECT and speed clinical response. We tested whether a low dose of ketamine, compared with a placebo (salt solution) injection, given with the anaesthetic used for ECT would reduce the impairment in memory and other cognitive tasks caused by ECT given for depression and whether depression would get better faster. We found no differences between ketamine- and placebo-treated patients in any of the measures but we could not exclude modest degrees of harms or benefits. Ketamine did not cause serious side effects, although two people had short-lived vivid dreams or altered sensations. The results do not support ketamine being useful for improving the outcome of ECT treatment. Some patients received near-infrared spectroscopy to measure activity in the brain. Preliminary findings showed that people with depression had lower activation in the front of the brain, which ECT further reduced, with ketamine having no apparent effect. People who benefited more from treatment had greater suppression by ECT, but further research is needed before we can be sure of whether this is a real effect or whether it could be useful in guiding treatment. Some of the patients were surveyed after the trial and they were mostly positive about their participation and about their ECT treatment.

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