

Table D51. Ketamine for depression studies

| Study identification number | Reference | Study design | Number of patients that received ketamine | Diagnosis | Other drugs | Ketamine form | Ketamine regimen | DORED dosage (mg/kg/day) | Number of ketamine days | Duration | Results | Side effects |
|--|---|--|---|--|--|---------------|--|--------------------------|-------------------------|------------------------|--|---|
| ORAL ANTIDEPRESSANT KETAMINE | | | | | | | | | | | | |
| 1 | Irwin et al., 2013 (27) | Single-center, 28-day, open-label, proof-of-concept trial | 14 | Depression or depression mixed with anxiety | patients were allowed to take concomitant psychiatric medications | racemate | Subjects received ketamine orally once a day | 0,5 | 28 | 28 days | Robust antidepressant and anxiolytic response | No serious adverse effects |
| | | | | | | | 10 mg/ml up to a final dose of 0,5 mg/kg in the same volume of cherry syrup | | | | | No vital sign changes |
| 2 | Irwin and Iglewicz , 2010 (26) | open-label trial | 2 | depression and anxiety | duloxetine, morphine, prednisone, aspirin, albuterol sulfate, tiotropium bromide, fluticasone-salmeterol, risedronate sodium, docusate, methadone, dexamethasone, senna, furosemide (among others used when necessary) | racemate | 0,5 mg/kg single dose at home | 0,5 | 1 | 1 day | Rapid and moderately sustained symptom relief for both depression and anxiety | No adverse effects were noted |
| 3 | de Gianninis and de Leo, 2014 (28) | open-label trial | 2 | Bipolar depression and chronic suicidal ideation | Case 1: Amitriptyline, quetiapine | racemate | Case 1: fortnightly doses of a ketamine solution 100 mg/mL ingested orally with a flavoured drink. The initial dose was 0,5 mg/kg and was gradually increased by 0,5 mg/kg with each treatment. Sustained clinical response was achieved at around 3 mg/kg | 3 | 2 | Months (not specified) | sustained remission of suicidal ideation | Without any adverse or side effects |
| | | | | | Case 2: venlafaxine, quetiapine | | Case 2: initial dose of 0,5 mg/kg was gradually increased to 1,5 mg/kg | | | | | |
| 4 | Paslakis et al., 2010 (24) | open-label trial | 4 | depression | dexamethasone, venlafaxine, duloxetine, lorazepam, trimipramine | S-ketamine | 1,25 mg/kg | 2,5 | 14 | 14 days | Oral S-ketamine was well tolerated | S-ketamine was well-tolerated with essentially no side effects |
| | | | | | rapid and sustained changes in 2 patients | | | | | | | |
| INTRAVENOUS ANTIDEPRESSANT KETAMINE | | | | | | | | | | | | |
| 5 | Niciu et al., 2013 (81) | open-label trial | 2 | obsessive-compulsive disorder, post-traumatic stress disorder, major depressive disorder, trichotillomania, personality disorder | fluvoxamine, riluzole, N-acetylcysteine, alprazolam, clomipramine, escitalopram | racemate | Single 0,5 mg/kg infusion for 40 minutes | 2,5 | 1 | 1 day | There remains insufficient data on therapeutic ketamine in the presence of comorbid psychiatric disorders to promote its off-label use in a non-research milieu. | dysphoria, passive suicidal thoughts, anxiety, depersonalization, perioral and limb paresthesia, nausea, derealization, smelling nail polish remover, tasting cement |
| 6 | Liebrenz et al., 2007 (56) | open-label trial | 1 | treatment-resistant major depression and substance use disorder | Lorazepam | racemate | Infusion of 0,5 mg/kg over a period of 50 minutes | 2,5 | 1 | 1 day | Significant improvement of symptoms peaking on the second day post infusion | No signs of impairment in respect to consciousness, orientation, and attention |
| 7 | Liebrenz et al., 2009 (82) | open-label trial | 1 | treatment-resistant major depression and substance use disorder | Alcohol, benzodiazepines, nicotine | racemate | 2 infusions of 0,5 mg/kg over a period of 50 minutes, in different days over 6 weeks | 2,5 | 2 | 6 weeks | Improvement of symptoms was almost instantly evident | dizziness, nausea, dissociative symptoms |
| 8 | Stefanczyk-Sapieha et al., 2008 (83) | open-label trial | 1 | major depressive disorder | domperidone, olanzapine, ondansetron, dimenhydrinate, oxycodone, dexamethasone, enoxaparin, fludrocortisone | racemate | 0,5 mg/kg infused over 60 minutes | 2,5 | 2 | 10 days | Initial improvement in mood following the first ketamine infusion | |
| | | | | | Methylphenidate was suspended in the infusion day | | Repeated after 10 days | | | | The benefit from the second infusion was very brief | |
| | | | | | 9 | | Mathew et al., 2010 (18) | | | | open-label trial | 26 |
| The majority of patients continued to meet response criteria 24 to 72 hours following infusion | blurred vision, diminished mental capacity, diminished sharpness, dizziness, faintness, drowsiness, sleepiness, feeling strange, feeling unreal, headache, numbness, tingling, ringing in the ears, trouble | | | | | | | | | | | |
| 10 | Price et al., 2009 (84) | open-label trial | 26 | Treatment-resistant depression | Psychotropic medication-free | racemate | 0,5 mg/kg administered over 40 minutes | 2,5 | 1 | 1 day | Rapid beneficial effects on suicidal cognition | Not mentioned |
| 11 | aan het Rot et al., 2010 (16) | open-label trial | 8 | Treatment-resistant depression | Free of psychotropic medication, except for zolpidem for insomnia when necessary | racemate | 0,5 mg/kg administered over 40 minutes | 2,5 | 6 | 12 days | Feasibility of repeated-dose intravenous ketamine for the acute treatment of treatment-resistant depression | Tachycardia, bradycardia, hypotension, bradypnea, abnormal sensations, weakness, fatigue, headache, sleep disturbance, blurred vision, diminished mental capacity, dizziness, faintness, feeling drowsy, feeling sleepy, feeling strange, feeling unreal, hearing things, seeing things, tingling, numbness, poor coordination, unsteadiness, poor memory |
| 12 | Rybowski et al., 2013 (85) | open-label trial | 25 | Bipolar depression | Mood-stabilizing medications allowed | racemate | Single 0,5 mg/kg infusion | 2,5 | 1 | 1 day | Confirmation of an antidepressant effect of ketamine as an add-on to mood-stabilizing drugs | Not mentioned |
| 13 | Thakurta et al., 2012 -b (86) | single-center, prospective, open-label, single-arm pilot study | 27 | Treatment-resistant major depression | Drug-free | racemate | Single infusion of 0,5 mg/kg over 40 minutes | 2,5 | 1 | 2 days | Rapid albeit short-lasting effect of ketamine on suicidal ideation | Elevated blood pressure, headache, euphoria, increased thirst, dizziness |

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|----|-----------------------------------|--|----|--|--|-------------------------|---|-----|---|-----------|--|--|
| 14 | Szymkowicz et al., 2013 (87) | open-label naturalistic observation | 3 | Treatment-resistant depression | fluoxetine, quetiapine, lamotrigine, lorazepam, nortriptyline, bupropion | racemate | 0,5 mg/kg over 40 minutes, several times in one year | 2,5 | 2 | 12 months | Low-dose repeated intravenous ketamine has therapeutic effects for patients with treatment-resistant depression | No significant physiological or psychological side effects |
| 15 | Price et al., 2014 (14) | Two-site, double-blind, randomized, placebo-controlled trial | 36 | Treatment-resistant unipolar major depression | Not mentioned | racemate | Single infusion of 0,5 mg/kg | 2,5 | 1 | 1 day | Intravenous ketamine produces rapid reductions in suicidal cognition over and above active placebo | Not mentioned |
| 16 | Chilukuri et al., 2014 (88) | randomized, open-label, parallel-group study | 9 | Major depression | Subjects were allowed to continue their ongoing antidepressant medication | racemate | Single infusion of 0,5 mg/kg over 40 minutes | 2,5 | 1 | 4 days | Intramuscular ketamine in the dose of 0,25 mg/kg is as effective and safe as 0,5 mg/kg given either intramuscularly or intravenously, substantially alleviating depressive symptoms | Sedation, dizziness, mild emotional abreaction, drowsiness, heaviness of head |
| 17 | Lundin et al., 2014 (89) | open-label trial | 83 | Treatment-resistant major depressive disorder and treatment-resistant bipolar depression | Free of psychotropic medications aside from therapeutic dose lithium or valproate for those with bipolar depression | racemate | Single 0,5 mg/kg infusion | 2,5 | 1 | 7 days | No significant correlation was observed between baseline vitamin B12 or folate and percent change in HDRS | Not mentioned |
| 18 | Valentine et al., 2011 (90) | single-blind, non-counter balanced design | 10 | major depressive disorder | free of psychotropic medications | racemate | Single 0,5 mg/kg dose | 2,5 | 1 | 2 weeks | Replication of the antidepressant-like effects of ketamine. No ketamine-induced changes in amino acid neurotransmitter content in the occipital cortex | dissociation, increase in the systolic blood pressure |
| 19 | Machado-Vieira et al., 2009 (91) | open-label study | 23 | treatment-resistant major depressive disorder | riluzole | racemate | Single 0,5 mg/kg infusion over 40 minutes | 2,5 | 1 | 1 day | Ketamine induced a significant and rapid antidepressant response. No changes in BDNF levels were observed after the ketamine infusion | Not mentioned |
| 20 | Paul et al., 2009 (92) | open-label study | 2 | treatment resistant major depression | nicotine, mirtazapine, lithium, lorazepam, zopiclon, amitriptyline, ziprasidone | racemate and S-ketamine | 0,5 mg/kg of ketamine over 50 minutes 0,25 mg/kg of S-ketamine over 50 minutes | 2,5 | 2 | 2 weeks | S-ketamine might exert similar antidepressant effects as ketamine in drug-resistant depression but may be better tolerated by the patients. | Both patients experienced psychomimetic side effects during the racemate infusion which were absent during treatment with S-ketamine. dizziness, feeling of being "embedded", all colours with a "whiff of pink", fatigue, feeling of being "muzzy" |
| 21 | Phelps et al., 2009 (93) | open-label study | 26 | treatment-resistant major depression | riluzole | racemate | Single 0,5 mg/kg infusion over 40 minutes | 2,5 | 1 | 1 day | Subjects with a family history of alcohol dependence showed significantly greater improvement in MADRS scores compared with subjects who had no family history of alcohol dependence. | Not mentioned |
| 22 | Ibrahim et al., 2012 (17) | open-label study | 42 | treatment-resistant depression | riluzole | racemate | Single 0,5 mg/kg infusion over 40 minutes | 2,5 | 1 | 4 weeks | A significant improvement in MADRS scores from baseline was found. The average time to relapse was 13,2 days. The combination of riluzole with ketamine treatment did not significantly alter the course of antidepressant response to ketamine alone. | perceptual disturbances, drowsiness, confusion, elevations in blood pressure and pulse, dizziness |
| 23 | Duncan et al., 2013 (94) | open-label study | 30 | treatment-resistant major depressive disorder | psychotropic drug free | racemate | Single 0,5 mg/kg infusion over 40 minutes | 2,5 | 1 | 3 days | Patients' depressive symptoms were significantly and rapidly improved Sleep slow wave activity and BDNF serve as non-invasive indices for testing the efficacy of newly developed antidepressant therapies that target the glutamatergic system. | No serious adverse effects occurred during the study |
| 24 | Diazgranados et al., 2010 -a (10) | randomized, single-center, placebo-controlled, double-blind, crossover, add-on study | 17 | treatment-resistant bipolar depression | lithium, valproate, duloxetine, SSRI, bupropion, venlafaxine, trazodone, monoamine oxidase inhibitor, quetiapine, aripiprazole, risperidone, ziprasidone, olanzapine, oxcarbazepine, lamotrigine, carbamazepine, topiramate, zonisamide, thyroid augmentation, stimulant | racemate | Single 0,5 mg/kg infusion over 40 minutes | 2,5 | 1 | 1 month | Within 40 minutes, depressive symptoms significantly improved in subjects receiving ketamine compared to placebo. | dissociation, worsening anxiety, worsening mood, increased suicidal ideation, feeling woozy or loopy, feeling lethargic or drowsy, cognitive impairment, fear, anxiety, nausea, dizziness, odd sensations, blurred vision, headache, feeling strange or weird or bizarre, dry mouth, tachycardia, increased blood pressure |
| 25 | Okamoto et al., 2010 (95) | open-label trial | 11 | treatment-resistant depression | atropine, succinylcholine, antidepressants | racemate | Single 0,8 mg/kg infusion | 4,0 | 1 | 1 day | It is possible to improve symptoms of depression by using ketamine anesthesia. | headache, nausea, angialgia at the site of injection, hypertension during the ECT session, sense of fears with hallucinations, delirium |
| 26 | Thakurta et al., 2012 -a (96) | single-center, prospective, open-label, single-arm pilot study | 22 | treatment-resistant major depression | Psychotropic medication-free | racemate | Single 0,5 mg/kg infusion | 2,5 | 1 | 2 weeks | Rapid, albeit short-lived, antidepressant effect of ketamine in treatment-resistant depression | Elevated blood pressure, headache, euphoria, increased thirst, dizziness |

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|----|-----------------------------------|--|----|--|--|------------|--|------|---|-----------|--|--|
| 27 | Zarate et al., 2012 (11) | single-center, double-blind, randomized, crossover, placebo-controlled study | 15 | bipolar I or II depression | lithium, valproate, SSRI, bupropion, duloxetine, mirtazapine, venlafaxine, tricyclic antidepressant | racemate | Single 0,5 mg/kg infusion | 2,5 | 1 | 1 month | Rapid and robust antidepressant response Ketamine rapidly improved suicidal ideation. | feeling woozy or loopy, feeling lethargic or drowsy, cognitive impairment, fear, anxiety, nausea, dizziness, odd |
| 28 | Messer et al., 2010 (97) | open-label trial | 2 | major depressive disorder | Not mentioned | racemate | Patient A: Six 0,5 mg/kg infusions on days 1, 3, 5, 7, 9 and 11 Patient B: Two 0,5 mg/kg infusions on days 1 and 7 and 4 saline infusions on days 3, 5, 9 and 11 | 2,5 | 6 | 12 days | Multiple ketamine treatments may provide an effective rapid antidepressant effect with prolonged benefit | elevation in both systolic and diastolic blood pressure, talkativeness, decreased inhibition, visual misperceptions |
| 29 | Zarate et al., 2006 (12) | randomized, double-blind, crossover design | 17 | major depressive disorder | Drug-free | racemate | Single 0,5 mg/kg infusion over 40 minutes | 2,5 | 1 | 2 weeks | Robust and rapid antidepressant effects. | perceptual disturbances, confusion, elevations in blood pressure, euphoria, dizziness, increased libido, gastrointestinal distress, increased thirst, headache, metallic taste, constipation |
| 30 | Diazgranados et al., 2010 -b (98) | open-label study | 33 | MDD | riluzole | racemate | Single 0,5 mg/kg infusion over 40 minutes | 2,5 | 1 | 1 day | Suicidal ideation in the context of MDD improved within 40 minutes of a ketamine infusion and remained improved for up to 4 hours post-infusion | mild perceptual disturbances |
| 31 | Sos et al., 2013 (13) | double-blind, crossover, placebo-controlled clinical trial | 27 | unipolar depression | SSRI, noradrenergic and specific serotonergic antidepressant, SNRI, augmentation of antidepressants with atypical antipsychotics, benzodiazepines, | racemate | 0,54 mg/kg within 30 minutes | 2,7 | 1 | 2 weeks | Alleviation in mood ratings Higher intensity of psychotomimetic symptoms during ketamine administration | acute psychotomimetic effect, dissociation, perceptual disturbances, confusion, mild increases in blood pressure, emotional blunting, euphoria |
| 32 | Berman et al., 2000 (2) | randomized, double-blind study | 7 | major depression | drug-free | racemate | Single 0,5 mg/kg infusion over 40 minutes | 2,5 | 1 | 3 days | Significant improvement in depressive symptoms within 72 hours after ketamine but not placebo infusion. | perceptual disturbances, "high" |
| 33 | Murrough et al., 2013 (99) | open-label study | 24 | treatment-resistant depression | free of antidepressant medication | racemate | Up to 6 intravenous infusions of ketamine 0,5 mg/kg on a Monday-Wednesday-Friday schedule over a 12-day period | 2,5 | 6 | 12 days | Ketamine was associated with a rapid antidepressant effect. | increase in psychotomimetic symptoms, feeling strange or unreal, abnormal sensations, blurred vision, feeling drowsy or sleepy, elevated blood pressure and/or heart rate |
| 34 | Diamond et al., 2014 (100) | open-label, naturalistic study | 28 | uni- or bipolar treatment-resistant depression | quetiapine, modafinil, temazepam, bisoprolol, aripiprazole, olanzapine, sertraline, clonazepam, fluoxetine, pregabalin, duloxetine, venlafaxine, lithium, tramycipromine, propranolol, agomelatine, haloperidol, lamotrigine, gabapentin, lorazepam, zolpidem, diazepam, lansoprazole, zopiclone | racemate | 3 or 6 ketamine infusions (0,5 mg/kg over 40 minutes) | 2,5 | 6 | 6 months | Up to 6 low-dose ketamine infusions can safely be given | vasovagal episode, anxiety, vomiting, dissociation |
| 35 | Larkin and Beautrais, 2011 (101) | open-label study | 14 | depression with suicidal ideation | Not mentioned | racemate | Single bolus of 0,2 mg/kg over 1 to 2 minutes | 1,0 | 1 | 10 days | Administering ketamine to depressed patients in a emergency department setting is feasible, safe and potentially effective in inducing a rapid remission of depression and suicidal ideation. | mild positive psychotomimetic symptoms, unpleasant dissociative symptoms |
| 36 | Ibrahim et al., 2011 (102) | open-label study | 17 | treatment-resistant MDD | Psychotropic medication-free | racemate | single infusion 0,5 mg/kg | 2,5 | 1 | 1 day | Ketamine appears to improve depressive symptoms in patients with MDD who had previously not responded to ECT. | dissociation |
| 37 | Denk et al., 2011 (103) | open-label study | 1 | major depressive disorder | citalopram, escitalopram, amitriptyline, clomipramine, venlafaxine, moclobemide | S-ketamine | 0,25 mg/kg with a 40-minute injection duration | 2,5 | 1 | 1 day | The depressive and anxiety parameter scores rapidly improved after S-ketamine infusion | Not mentioned |
| 38 | Correll and Futter, 2006 (66) | open-label study | 2 | major depressive disorder | citalopram, lithium carbonate | racemate | 1) Initially, 15-20 mg/h (0,1-0,2 mg/kg/h) 2) The dose increased until a maximum tolerated dose was achieved. This dose was assumed to be a therapeutic dose and was maintained for 5 days. 3) Maximum dose achieved = 30 mg/h (0,3 mg/kg/h) | 36,0 | 5 | 12 months | The 2 patients have experienced a very significant and long-lasting response. | mild feeling of headiness or inebriation |
| 39 | Salvatore et al., 2010 (104) | open-label study | 15 | MDD | psychotropic drug-free | racemate | Single infusion of 0,5 mg/kg over 40 minutes | 2,5 | 1 | 4 days | Depressive symptoms were significantly improved 230 minutes after the infusion. A significant decrease was also observed in both anxiety and psychotic symptoms. The anterior cingulate cortex and its putative interaction with the amygdala predict antidepressant response to ketamine in a working task context. | Not mentioned |

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| 40 | Salvadore et al., 2009 (105) | open-label study | 11 | MDD | drug-free | racemate | Single infusion of 0,5 mg/kg over 40 minutes | 2,5 | 1 | 1 day | <p>Patients with MDD showed robust increases in pretreatment anterior cingulate cortex activity, which were positively correlated with subsequent rapid antidepressant response to ketamine.</p> <p>The results strongly implicate anterior cingulate cortex dysfunction in the pathophysiology of MDD.</p> | Not mentioned |
| 41 | Salvadore et al., 2012 (106) | open-label study | 14 | MDD | drug-free | racemate | Single infusion of 0,5 mg/kg over 40 minutes | 2,5 | 1 | 4 days | <p>Depressive symptoms were significantly improved 230 minutes after the infusion.</p> <p>Ketamine administration was also associated with a significant improvement in anxiety symptoms</p> | Not mentioned |
| 42 | Loo et al., 2012 (107) | randomized controlled trial | 22 | depression | thiopentone, succinylcholine, propofol, antidepressants | racemate | <p>Patients treated with ultrabrief pulse-width right unilateral ECT were randomised to receive either ketamine or placebo during anaesthesia for ECT.</p> <p>Bolus of 0,5 mg/kg of ketamine</p> <p>The ECT-ketamine group received a mean dose of 40,2 mg of ketamine</p> | 2,5 | 1 | 1 month | The addition of ketamine did not decrease cognitive impairment in patients having ultrabrief pulse-width right unilateral ECT, but was safe and slightly improved efficacy in the first week of treatment and at one-week follow up. | mania, hypomania |
| 43 | Kranaster et al., 2011 (108) | retrospective, single-centre, chart review | 16 | therapy-resistant depression | thiopental, urapidil | S-ketamine | <p>ECT anaesthesia with ketamine or thiopental.</p> <p>Mean dose of ketamine = 46,7 mg per seizure</p> | 6,7 | 11 | 3 years | The ketamine group needed significantly fewer ECT sessions and had significantly lower HAM-D afterwards. | intermittent atrial fibrillation, salvo of ventricular extrasystoles, headache |
| 44 | Wang et al., 2012 (109) | randomized clinical trial | 12 | major depression | succinylcholine, propofol | racemate | <p>Propofol or ketamine or propofol plus ketamine were infused before ECT</p> <p>Single 0,8 mg/kg dose of ketamine</p> | 4,0 | 1 | 1 week | <p>The HDRS scores improved earlier in the ketamine and in the propofol plus ketamine groups.</p> <p>Decreases in HDRS scores were significantly greater in the ketamine and propofol plus ketamine groups compared with those in the propofol group.</p> | <p>The adverse effects in the propofol plus ketamine group were fewer than those in the ketamine group.</p> <p>headache, nausea, brief delirium after awakening, prolonged delirium, hypertension, angialgia, sense of fear with hallucinations upon awakening from anesthesia.</p> |
| 45 | Abdallah et al., 2012 (110) | randomized clinical trial | 8 | major depressive disorder and bipolar disorder | thiopental, fluoxetine, paroxetine, citalopram, duloxetine, venlafaxine, bupropion, lithium, valproic | racemate | <p>Anesthesia for ECT seizure with thiopental or thiopental plus ketamine</p> <p>Single 0,5 mg/kg dose of ketamine</p> | 2,5 | 6 | 2 weeks | Ketamine given just before ECT did not enhance the antidepressant effect of ECT. | nausea, headache, disorientation, muscle pain |
| 46 | Rasmussen et al., 2013 (111) | open-label study | 10 | major depressive disorder and bipolar II disorder | bupropion, duloxetine, nortriptyline, venlafaxine, citalopram, lithium, lamotrigine | racemate | Twice weekly ketamine 0,5 mg/kg infusions, administered over 100 minutes, until either remission was achieved or 4 infusions were given. | 2,5 | 4 | 6 weeks | 5 of 10 patients achieved remission status | vertigo, dizziness, visual hallucination, drowsiness, dysmegalopsia, anxiety, diplopia |
| 47 | Kudoh et al., 2002 (112) | randomized clinical trial | 35 | major depression | propofol, fentanyl, isoflurane, nitrous oxide, imipramine, clomipramine, maprotiline, mianserin, vecuronium | racemate | In the ketamine group, anesthesia was induced with 1,0 mg/kg of ketamine + 1,5 mg/kg of propofol and 2 µg/kg of fentanyl. | 5,0 | 1 | 3 days | <p>Depressed mood, suicidal tendencies, somatic anxiety, and hypochondriasis significantly decreased in the propofol-fentanyl-ketamine group as compared with the propofol-fentanyl group</p> <p>Small-dose ketamine improved the postoperative depressive state and relieved postoperative pain in depressed patients</p> | ventricular ectopic rhythm, hypotension |
| INTRANASAL ANTIDEPRESSANT KETAMINE | | | | | | | | | | | | |
| 83 | Clark, 2014 (133) | open-label study | 1 | treatment-refractory depression and migraine | venlafaxine, bupropion, mirtazapine, L-methylfolate, | racemate | <p>10 mg per spray inhalation</p> <p>50 mg per treatment session</p> | 1,6 | 32 | 4 months | Depressive symptoms improved significantly. Euthymia for the following | brief feelings of being high, mild mood decreases |
| 84 | Lapidus et al., 2014 (134) | randomized, double-blind, crossover study | 18 | major depression | psychotropic medication at stable doses, including | racemate | 5 intranasal applications of 100 µg/L. Each application provided 10 mg of ketamine. | 1,6 | 1 | 2 weeks | Significant improvement in depressive symptoms at 24 hours after ketamine | feeling strange, feeling unreal, poor memory, weakness, |
| SUBLINGUAL ANTIDEPRESSANT KETAMINE | | | | | | | | | | | | |
| 85 | Lara et al., 2013 (29) | open-label study | 26 | unipolar or bipolar depression | Maintenance of previous treatments was according to the | racemate | 10 mg from a 100 mg/mL solution allowed to absorb for 5 minutes and swallowed, repeatedly | 0,2 | 18 | 6 months | 20 patients achieved remission or clear response for depression, mood | mild and transient light-headedness, agitation |
| INTRAMUSCULAR ANTIDEPRESSANT KETAMINE | | | | | | | | | | | | |
| 86 | Goforth and Holsinger, 2007 (135) | open-label study | 1 | major depressive disorder with psychotic features | thiopental, succinylcholine | racemate | 100 mg (1,5 mg/kg) as part of a conscious sedation protocol 1 hour before ECT | 7,0 | 1 | 3 days | The patient was noted to have less psychomotor agitation, demonstrated | not mentioned |
| 87 | Glue et al., 2011 (136) | open-label study | 2 | refractory depression | not mentioned | racemate | 0,7 and 1,0 mg/kg | 4,7 | 1 | not mentioned | Reduction in MADRS scores, in one case providing scores consistent with remission | light-headedness, sedation, dissociative symptoms |