

Bilaga 1 Referenser till inkluderade ketaminstudier i översikterna

- [I] Berman RM, Cappiello A, Anand A, Oren DA, Heninger GR, Charney DS, Krystal JH. Antidepressant effects of ketamine in depressed patients. *Biol Psychiatry*. 2000 Feb 15;47(4):351-4.
- [II] Zarate CA Jr, Singh JB, Carlson PJ, Brutsche NE, Ameli R, Luckenbaugh DA, Charney DS, Manji HK. A randomized trial of an N-methyl-D-aspartate antagonist in treatment-resistant major depression. *Arch Gen Psychiatry*. 2006 Aug;63(8):856-64.
- [III] Sos P, Klirova M, Novak T, Kohutova B, Horacek J, Palenicek T. Relationship of ketamine's antidepressant and psychotomimetic effects in unipolar depression. *Neuro Endocrinol Lett*. 2013;34(4):287-93.
- [IV] Järventausta K, Chrapek W, Kampman O, Tuohimaa K, Björkqvist M, Häkkinen H, Yli-Hankala A, Leinonen E. Effects of S-ketamine as an anesthetic adjuvant to propofol on treatment response to electroconvulsive therapy in treatment-resistant depression: a randomized pilot study. *J ECT*. 2013 Sep;29(3):158-61.
- [V] Loo CK, Katalinic N, Garfield JB, Sainsbury K, Hadzi-Pavlovic D, Mac-Pherson R. Neuropsychological and mood effects of ketamine in electroconvulsive therapy: a randomised controlled trial. *J Affect Disord*. 2012 Dec 15;142(1-3):233-40.
- [VI] Murrough JW, Iosifescu DV, Chang LC, Al Jurdi RK, Green CE, Perez AM, Iqbal S, Pillementer S, Foulkes A, Shah A, Charney DS, Mathew SJ. Antidepressant efficacy of ketamine in treatment-resistant major depression: a two-site randomized controlled trial. *Am J Psychiatry*. 2013 Oct;170(10):1134-42.
- [VII] Yoosefi A, Sepehri AS, Kargar M, Akhondzadeh S, Sadeghi M, Rafei A, Alimadadi A, Ghaeli P. Comparing effects of ketamine and thiopental administration during electroconvulsive therapy in patients with major depressive disorder: a randomized, double-blind study. *J ECT*. 2014 Mar;30(1):15-21.
- [VIII] Ghasemi M, Kazemi MH, Yoosefi A, Ghasemi A, Paragomi P, Amini H, Afzali MH. Rapid antidepressant effects of repeated doses of ketamine compared with electroconvulsive therapy in hospitalized patients with major depressive disorder. *Psychiatry Res*. 2014 Feb 28;215(2):355-61.
- [IX] Diazgranados N, Ibrahim L, Brutsche NE, Newberg A, Kronstein P, Khalife S, Kammerer WA, Quezado Z, Luckenbaugh DA, Salvadore G, Machado-Vieira R, Manji HK, Zarate CA Jr. A randomized add-on trial of an N-methyl-D-aspartate antagonist in treatment-resistant bipolar depression. *Arch Gen Psychiatry*. 2010 Aug;67(8):793-802.
- [X] Zarate CA Jr, Brutsche NE, Ibrahim L, Franco-Chaves J, Diazgranados N, Cravchik A, Selter J, Marquardt CA, Liberty V, Luckenbaugh DA. Replication of ketamine's antidepressant efficacy in bipolar depression: a randomized controlled add-on trial. *Biol Psychiatry*. 2012 Jun 1;71(11):939-46.

TABLE 1. Characteristics of included ketamine studies

Study	Study design	Diagnosis Duration of illness (mean, years); Duration of episode (mean, months)	Baseline severity Ketamine vs Control (mean (SD or)); [Inclusion criteria]	N	Treat- ment	Control	Treatment (Tx) strategy; Dose (mg/kg)	Concomitant treatment	Follow-up (hours)	Outcomes*	Risk of bias* Comments
Caddy et al: DEPRESSION											
Ketamine vs Placebo											
Berman 2000 USA	RCT DB, crossover	MDE (1 BD-dep); Duration of illness or episode NR	HDRS 33,0 (6,7); HDRS 26,9 (5,8)	9	5 ketamine	4 placebo	Monotherapy: 2w drug free# prior Tx 0,5mg/kg i.v.	None	24h, 48h, 72h	Response rate (>50% HDRS); (BDI, BPRS, VAS)	High to Unclear risk of bias; Adverse events reported: BPRS - positive symptoms/ psychotomimetic effects; VAS - intoxication high.
Zarate 2006, USA	RCT DB, crossover, 1w apart	MDD; TRD; 24 y illness, 34 mo episode	HDRS 24,89; HDRS 24,44 [HDRS > 18]	18	9 ketamine	9 placebo	Monotherapy: 2w drug free# prior Tx 0,5mg/kg i.v.	None	24h, 48h, 72h, 1w	Response rate (>50% HDRS); Remission rate (≤7 HDRS); (BDI, BPRS, YMRS, VAS)	Low to Unclear risk of bias. Adverse events reported: BPRS - positive symptoms YMRS - mania
Sos 2013, Czech Republic	RCT DB, crossover	MDD hospitalized; 10 y illness, 11 mo episode	MADRS 20,4 (4,7); MADRS 24,6 (4,8) [MADRS > 20]	30	11 ketamine	19 placebo	Add-on: 3w stable on medication prior Tx; 0,5mg/kg i.v.	Existing medications	24h, 72h, (96h), 1w	Response rate (>50% MADRS); (BPRS)	Low to Unclear risk of bias. Objective: Link between anti- depressant and psychoto-mimetic effects (BPRS). Adverse events NR.
Järventausta 2013, Finland	RCT DB	MDD (severe/ psychotic); TRD; Duration of illness or episode NR	MADRS 36,9; MADRS 37,3	32	16 S- ketamine	16 placebo	Add-on: Ketamine as adjuvant during ECT; 0,5mg/kg i.v.	ECT; Existing medications;	1w, 5 ECT ses- sions	Response rate (>50% MADRS); Remission rate (≤7 MADRS); (BDI)	Low to Unclear risk of bias; Objective: Ketamine as anaesthetic adjuvant during ECT. Adverse events NR.
Loo 2012, Australia	RCT DB, parallel	MDE (9 BD-dep); TRD; 36-53 w episode	MADRS 32,1 (4,5); MADRS 32,7 (7,9)	51	26 ketamine	25 placebo	Add-on: Ketamine as augmentation to ECT; 0,5mg/kg i.v.	ECT 3x/w; Existing medications;	1w, 2w, (1mo); 6 ECT ses- sions	Response rate (>50% MADRS); Remission rate (≤10 MADRS); MADRS	Low to high; Objective: Neuro-psychological outcomes. Adverse events reported: psychotomimetic, mania/ hypomania.
Ketamine vs Active control											
Murrough 2013 USA	RCT DB, parallel	MDD; TRD; 20-24 y duration 146-109 mo index episode	MADRS 32,6 (6,1); MADRS 31,1 (5,6); [IDS-C > 32]	73	47 ketamine	25 mida- zolam	Monotherapy Drug free# 0,5mg/kg i.v.	hypnotic (non- benzidia- zepine)	24h, 72h, 1w	Response rate (>50% MADRS); MADRS; BPRS	Low to Unclear risk of bias. Adverse events reported, incl: dissociative, psychotic symptoms.
Yoosefi 2014, Iran	RCT DB	MDD Duration of illness or episode NR	HAM-D 23,60; HAM-D 22,86 [HAM-D > 18]	31	17 ketamine	14 thio- penthal	Add-on: Ketamine as adjuvant during ECT; 0,5mg/kg i.v.	ECT (randomized after ECT 3x/w for 2w)	72h, 2w, 4w	Response rate (>60% HAMD); HAMD, MMSE,	Low to High risk of bias. Objective: Ketamine as induction agent for anaesthesia. Protocol unclear. Adverse events reported: MMSE - Cognition/memory
Ghasemi 2013, Iran	RCT SB	MDD, in MDE* (1 BD, 5 GAD/OCD, 4 personality dis, 1 addiction) 9 w episode	HRSD 30,22 (5,78); HRSD 35,88 (6,47)	18	9 ketamine	9 ECT + thiopent hal	Unclear. 1w infusion: 0,5mg/kg over 45min; every 48h	Existing medications;	24h, 72h, 1w, 2w	Response rate (>50% HDRS); HRSD, BDI	Low to Unclear risk of bias. Protocol unclear. Ketamine "3 infusions on 3 test days every 48h". Adverse effects reported: hemodynamic.
McCloud et al: BIPOLAR depression											
Diazgranados 2010 USA	RCT DB crossover, 2w apart	BD I or II with depression; MDE > 4w; TR > 1; 28 y illness; 15 mo episode	MADRS 31,2 (4,4); MADRS 33,9 (4,8) [MADRS > 20]	18	9 ketamine	9 placebo	Add-on: 2w drug-free# 0,5mg/kg i.v.	Lithium or valproate	24h, 48h, 72h, 1w, 10d, 2w	Response rate (50% MADRS); Remission rate (MADRS<10); (HDRD, HARS, BDI, BPRS, YMRS, CADS)	Low to Unclear risk of bias. Adverse events reported.
Zarate 2012 USA	RCT DB, crossover	BD I or II with depression; without psychotic features; MDE for 4w	MADRS? 34,1 (5,4); MADRS 35,6 (5,8) [MADRS > 19]	15	7 ketamine	8 placebo	Add-on: 2w drug-free# 0,5mg/kg i.v.	Lithium or Valproate	24h, 72h, 1w, 2w	Response rate (50% MADRS); Remission rate (MADRS<10); MADRS, HRSD, BDI, BPRS, YMRS, other	Low to Unclear risk of bias. Adverse events reported.

Diagnoses: MDD - Major Depressive Disorder; MDE - Major Depressive Episode; BD - Bipolar Disorder; TRD - Treatment Resistant Depression;

GAD - Generalized Anxiety Disorder; OCD - Obsessive Compulsive Disorder

Depression rating scales: MADRS—Montgomery Åsberg Depression Rating Scale; HDRS—Hamilton Depression Rating Scale; PDI—Panic Depression Inventory.

Depression Rating Scales: MADRS - Montgomery - Asberg Depression Rating Scale; HDRS - Hamilton Depression Rating Scale; BDI - Beck Depression Inventory

Other rating scales : BPRS - Brief Psychiatric Rating Scale - positive symptoms; VAS - Visual Analog Scale; HADS - Hamilton Anxiety Patient Scale; GADS - Geriatric Administration Rating Scale.

HARS - Hamilton Anxiety Rating Scale; CADS - Clinician Administered Rating Scale; FSIQ - Full Scale IQ; and HAD - the Hospital Anxiety and Depression scale. The mean values of the questionnaires are shown in Table 1.

Outcomes* As defined by original authors and used in the meta-analyses of the systematic review

Drug free[#] - Free from other antidepressant/ psychotropic medication. Other drugs may be permitted (hypnotic, anaesthetic/ana-