

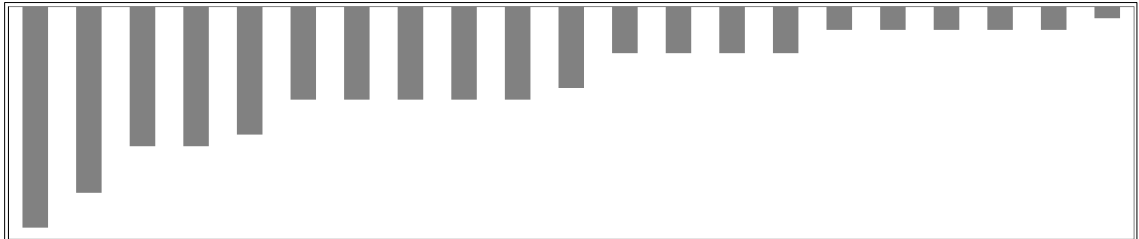
Supplemental material to “Structure and neural mechanisms of catatonia”

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Content:

- Supplemental Table 1. Catatonia symptom distribution in Kahlbaum’s case series
- Supplemental Table 2. Prospective studies of catatonia treatment with blinded assessments: benzodiazepines, electroconvulsive therapy (ECT), and antipsychotics

chapter	case	page	Initials	age	sex	rm	Total symptoms per case	Symptom																	affective (depressed/muric)	excitement/agitation	excitement/agitation in the presence of retarded catatonia								
								Mutism	Stupor/Akinesia	Negativism	Aggression/Excitement/Agitation/Impulsivity	Posturing	Grimacing	Staring/Blinking	Withdrawal	Rigidity	Dyskinesia/Tremor	Verbalization	Muscular Hypotonia	Mannerisms	Waxy Flexibility	Autonomic Abnormality	Motor Inhibition	Stereotypy/Perseveration				Automatic Obedience	Catatapsy	Speech Abnormality	Iterations				
1	1	case history	9-14	BL	27	m	12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d	x	? Page 10				
1	2	case history	14-17	JG	33	m	yes	12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d	x	x				
1	3	case history	17-20	MvB	45	f	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d/m	x	x					
1	4	summary	20-21	AM	29	f	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	m	x	x					
1	5	summary	21-22	MG	20	m	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	m							
1	6	summary	22-23	AL	24	m	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d							
1	7	summary	23-25	PU	33	m	8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d							
1	8	summary	25	NvJ	24	f	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d/m							
1	9	summary	25-26	WR	21	f	4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d							
2	10	summary	31-32	report only	25	m	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d							
2	11	case history	34-37	PM	24	m	9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d/m	x	x					
2	12	case history	38-39	JT	?	m	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d/m	x	x					
2	13	case history	40-42	MA	?	m	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	m	x	x					
2	14	case history	42-45	BVT	22	m	11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d/m	x	x					
15 ??																																			
4	16	case history	60-61	AG	44	f	yes	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x							
4	17	case history	62-65(66)	JP	33	m	yes	9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x							
4	18	case history	67(-68)	FS	26	m	yes	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	m							
4	19	survey	68-69	WH	26	f	yes	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d/m							
4	20	survey	69-70(71)	GI	40	m	yes	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	m	x	? Page 70					
4	21	few data	71-72	?	?	?	yes																												
4	22	case history (few data)	74(-75)	FS	42	m	yes																												
4	23	case history (few data)	75(-76)	RS	44	m	yes																												
4	24	case history (few data)	76(-77)	JN	31	m	yes																												
4	25	case history (few data)	77	JvO	35	m	yes																												
6	26	case history	87-89	SX	43	m	10	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	d/m	x	x					
Symptom Frequency								19	16	12	12	11	8	8	8	8	8	7	4	4	4	4	4	2	2	2	2	2	2	2	2	1	16	12	9



Supplemental Table 2. Prospective studies of catatonia treatment with blinded assessments: benzodiazepines, electroconvulsive therapy (ECT), and antipsychotics

Treatment	Author	Study type	n	Diagnosis sample	State	Treatment effect
Lorazepam 4-8mg/d	Bush et al. ¹	Prospective cohort	21	DSM-III-R and BFCRS AFF, SYS, PSY, DRU	MIX	Remission 76%
Lorazepam 3mg/d, Diazepam up to 16mg/d	Hatta et al. ²	Prospective cohort	41	DSM-IV PSY, AFF, SYS	MIX	Remission 2%
Lorazepam 2mg, Diazepam 10mg /8h	Hung and Huang ³	Prospective cohort	7	DSM-IV AFF	Unclear	Remission 100%
Lorazepam 2mg once	Kritzinger and Jordaan ⁴	Open prospective	9	DSM-IV PSY, AFF, OTH	Unclear	Remission 66%
Lorazepam, Clonazepam 4-8mg /d	Lee et al. ⁵	Prospective cohort	22	DSM-III-R and IV, ICD-10 BFCRS, MRS PSY, AFF, OTH	MIX	Remission 73% partial remission 27%
Lorazepam 2mg, Diazepam 1.25 mg/h	Lin et al. ⁶	Prospective cohort	21	DSM-IV, BFCRS SCZ	MIX (18 ACT, 3 CHR)	Remission 100%
Lorazepam 2-10mg/d	Northoff et al. ⁷	Prospective cohort	18	DSM-III-R, Lohr and Wisniewski, Rosebush PSY, AFF, OTH	ACT (neuroleptica naïve)	Response 66%
Lorazepam 1-2mg/d	Rosebush et al. ⁸	Prospective open label	15	DSM-III-R AFF, PSY, OTH	MIX	Remission 80%, partial remission 6.6%
Lorazepam 1mg/10min	Seethalakshmi et al. ⁹	Prospective cohort	16	DSM-IV, BFCRS PSY, AFF, OTH, DRU	MIX	Remission 75%, partial remission 18%
Lorazepam 2mg/d, Diazepam 10mg/d	Ungvari et al. ¹⁰	Prospective open label	18	DSM-III-R, Lohr and Wisniewski, Rosebush, McCall scale PSY, AFF	ACT	Improvement 89%
Lorazepam 6mg/d	Ungvari et al. ¹¹	RCT	20	DSM-IV, BFCRS SCZ	CHR	Improvement 0%
Lorazepam 2-3mg/d	Yassa et al. ¹²	Prospective open label	10	Not reported AFF, PSY, unknown	ACT	Remission 100%
ECT bilateral	Bush et al. ¹	Prospective cohort	4	DSM-III-R and BFCRS AFF, OTH	MIX	Remission 100%
ECT bilateral	Escobar et al. ¹³	Prospective open label	9	DSM-IV, MRS Affective and schizophrenia	Unclear	Response 70%
ECT bitemporal	Flamarique et al. ¹⁴	Case series within a RCT	4	CGI Schizophrenia (child and adolescents)	ACT (first occurrence)	Response 68%
ECT bilateral vs Risperidone	Girish and Gill ¹⁵	RCT	14	ICD-10, BFCRS SCZ, PSY	MIX	ECT > risperidone Reduction of

						catatonia symptoms
ECT bilateral	Hatta et al. ²	Prospective cohort	17	DSM-IV unknown	MIX	Remission 100%
ECT bitemporal	Medda et al. ¹⁶	Open prospective	13	DSM-IV, BFCRS, CGI Bipolar	MIX	Response 80.8%
ECT bifrontal or bitemporal	Phutane et al. ¹⁷	RCT	33	BFCRS Schizophrenia	MIX	Response 88%
ECT continuation and neuroleptics	Suzuki et al. ¹⁸	Prospective cohort	11	DSM-IV, BPRS Schizophrenia	MIX	Response 100%
Chlorpromazine (n = 28), Risperidone (n = 19), Haloperidol (n = 19)	Hatta et al. ²	Prospective cohort	66	DSM-IV unknown	Unclear	Remission Chlorpromazine 68%, Risperidone 25%, Haloperidol 16%
Olanzapine	Martenyi et al. ¹⁹	Open-label double-blind trial	35	DSM-IV, PANSS SCZ	MIX	PANSS after 1 week -13.1 points

Abbreviations: n = number of subjects at final follow up, DSM = Diagnostic and Statistical Manual of Mental Disorders, ICD = International Classification of Disease, RCT = randomised controlled trial, BFCRS = Bush-Francis Catatonia Rating Scale, CGI = Clinical Global Impression for Improvement, PANSS = Positive and Negative Syndrome Scale, ECT = electroconvulsive therapy, Affective disorder = AFF, psychotic = PSY, schizophrenia = SCZ, systemic = SYS, drug induced = DRU, other = OTH, mixed = MIX, chronic = CHR, acute = ACT

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