

Supplementary Table 1. Sleep and psychotic symptoms and clinical characteristics in published case reports of narcolepsy with psychotic-like symptoms or comorbid psychotic disorders

First Author	Year	Case	AAO sleep symptoms	Sleep Symptoms	AAO psychotic	Meds prior to psychosis	Psychotic symptoms	DQB1* 06:02 / CSF	Diagnosis	Criteria	Group	Other medical condition (s)
Coren	1965	#1	~ 30	EDS, cataplexy, sleep paralysis, HH	~ 30	no	MH, sexual and paranoid delusion, false memories	n.a.	Delusional NT1	Other	2	one stroke in childhood
Shapiro	1976	#1	42	EDS, insomnia, HH, unclear cataplexy	n.a.	no	visual and auditory HH, mystic delusion	n.a.	Delusional NT1?	Other	2	n.a.
Pfefferbaum	1977	#1	34	EDS, cataplexy, sleep paralysis	~ 32	no	MH, jealousy and paranoid delusion	n.a.	NT1, SCZ	Other	3	tardive dyskinesia
Schrader	1984	#1	< 60	EDS, cataplexy, sleep paralysis, HH	64	dextroamphetamine	VH, mystic and jealousy delusion	n.a.	Narcolepsy	Other	2	alcohol?
Cadieux	1985	#1	12	EDS, cataplexy	n.a.	stimulant	AH, disorganisation, paranoid delusion	n.a.	NT1, SCZ	Other	3	tardive dyskinesia
Trzepacz	1987	#1	32	EDS, cataplexy, sleep paralysis, HH	> 32	methylphenidate	mystic, hypochondriac, megalomaniac delusion	n.a.	NT1, BD	DCSAD	3	n.a.
Douglass	1991	#1	13	EDS, cataplexy, sleep paralysis, HH	adolescence	no	MH, paranoid, hypochondriac and fantastic delusion	DR2 DQ1, 2	Delusional NT1	DCSAD, D3	2	rheumatic fever, restless leg syndrome
Douglass	1991	#2	n.a.	EDS, sleep paralysis, HH	childhood	no	MH, sexual, paranoid (poisoning) delusion	DR2 DQ1, 2	Delusional NT1	DCSAD, D3	2	n.a.
Douglass	1991	#3	childhood	EDS, cataplexy, HH	childhood	no	MH, mystic and paranoid delusion	DR3 DQ1, 2	Delusional NT1	DCSAD, D3	2	n.a.
Douglass	1991	#4	n.a.	EDS, cataplexy, HH	6	no	MH, zoopsia, paranoid and mystic delusion, influence syndrom	DR2 DQ1	Delusional NT1	DCSAD, D3	2	n.a.
Douglass	1991	#5	21	EDS, cataplexy, sleep paralysis, HH	> 14	no	MH, zoopsia, sexual delusion, influence syndrom	DR3 DQ2, 3	Delusional NT1	DCSAD, D3	2	very unusual results
Hays	1992	#1	n.a.	EDS, cataplexy, sleep paralysis, HH	n.a.	no	MH, sexual delusion, false memories?	n.a.	NT1, SCZ?	DCSAD, D3	3	n.a.
Hays	1992	#2	n.a.	HH, sleep paralysis?	n.a.	no	MH, sexual, paranoid and mystic delusion, false memories?	DR2	Delusional NT1	DCSAD, D3	2	n.a.
Hays	1992	#3	n.a.	EDS, cataplexy, sleep paralysis, HH	n.a.	no	hallucinations, (sexual) delusion	n.a.	NT1, SCZ?	DCSAD, D3	3	n.a.
Hays	1992	#4	n.a.	EDS, cataplexy, sleep paralysis, HH	n.a.	no	MH, sexual delusion?, false memory?	n.a.	(Delusional) NT1	DCSAD, D3	2	n.a.
Takeuchi	2000	#1	20	EDS, cataplexy, sleep paralysis, HH	41	no	AH, observation and reference delusion	HLA +	Delusional NT1	ICSD	2	n.a.
Bhat	2002	#1	48	EDS, cataplexy	before NT1	no	disorganisation, paranoid delusion	HLA +	NT1, SCZ	ICSD	3	n.a.
Szucs	2003	#1	23	EDS, cataplexy, vivid dreams	23	no	MH, sexual delusion	HLA +	Delusional NT1	ICSD	2	n.a.
Szucs	2003	#2	< 45	EDS, cataplexy,	45	no	MH, paranoid & sexual delusion, confusional false memories	HLA +	Delusional NT1	ICSD	2	n.a.
Kishi	2004	#1	13	EDS, cataplexy, sleep paralysis, HH	19	no	AH, disorganization, paranoid and reference delusion	DR2	NT1, SCZ	ICSD, D4	3	n.a.
Vorspan	2005	#1	14	n.a.	17	modafinil	AH, VH, paranoid and reference delusion	n.a.	Narcolepsy	n.a.	2	n.a.
Walterfang	2005	#1	17	EDS, cataplexy, sleep paralysis, HH	24	no	Paranoid delusion	no	NT1, SCZ	ICSD-2, D4TR	3	n.a.
Walterfang	2005	#2	13	EDS, cataplexy, sleep paralysis, HH	21	stimulant	Delusion, disorganization	HLA +	NT1, SCZ	ICSD-2, D4TR	3	n.a.

First Author	Year	Case	AAO sleep symptoms	Sleep Symptoms	AAO psychotic	Meds prior to psychosis	Psychotic symptoms	DQB1* 06:02 / CSF	Diagnosis	Criteria	Group	Other medical condition (s)
Kondziella	2006	#1	17	EDS, cataplexy, sleep paralysis, HH	> 17	no	paranoid and reference delusion	no	NT1, SA	ICSD-2, ICD10	3	partial complex epilepsy?
Melamed	2009	#1	~ 4	EDS, cataplexy	20	methylphenidate	AH, influence syndrom	- / refusal	NT1, psychosis	ICSD-2	3	developmental difficulties
Undurraga	2009	#1	15	EDS, cataplexy	21	stopped > 5 years	MH, disorganization, paranoid & mystic delusion, influence sd	HLA +, Hcrt1 ↓	NT1, SD	ICSD-2, D4TR	3	n.a.
Crosby	2011	#1	22	EDS, cataplexy, sleep paralysis	22	modafinil, venlafaxine	megalomaniac delusion, (mania)	HLA +	NT1, BD	ICSD-2, D4TR	3	n.a.
Tsutsui	2012	4(B)	adolescence	EDS, HH	58	methylphenidate	AH, VH, paranoid and jealousy delusion	HLA +, Hcrt1 ↓	NT1, DD	ICSD-2, D4TR	3	Parkinson's disease, NMDAR+
Tsutsui	2012	5(B)	n.a.	n.a.	n.a.	stimulant	AH, VH, delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-2, D4TR	3	n.a.
Tsutsui	2012	6(B)	n.a.	n.a.	n.a.	stimulant	AH, delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-2, D4TR	3	n.a.
Tsutsui	2012	N(B)#1	n.a.	n.a.	n.a.	stimulant	AH	HLA +, Hcrt1 ↓	NT1, psychosis	ICSD-2, D4TR	3	n.a.
Tsutsui	2012	N(B)#2	n.a.	n.a.	n.a.	stimulant	AH	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-2, D4TR	3	n.a.
Chien	2013	#1	18	n.a.	18	sodium oxybate	AH, disorganisation, paranoid delusion, derealization	n.a.	Narcolepsy	ICSD-2	2	suicide attempt
Chen	2014	#1	10	EDS, cataplexy	12	no	MH, disorganisation, influence syndrome, reference delusion	n.a.	NT1, SCZ	ICSD-3, D4TR	3	n.a.
Canellas	2014	M1	13	EDS, cataplexy, sleep paralysis, HH	20	no	AH, disorganization, jealousy delusion	HLA +	NT1, SD	ICSD-3, D4TR	3	hypothyroidism
Canellas	2014	M3	8	EDS, cataplexy, sleep paralysis, HH	20	modafinil	AH, disorganization, paranoid delusion	HLA +, Hcrt1 ↓	NT1, SA	ICSD-3, D4TR	3	n.a.
Canellas	2014	M5	15	EDS, cataplexy, sleep paralysis, HH	16	fluoxetine	AH, disorganization, paranoid delusion	HLA +	NT1, SD	ICSD-3, D4TR	3	n.a.
Canellas	2014	M7	12	EDS, cataplexy, HH	15	n.a.	AH, disorganization, paranoid delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	n.a.
Canellas	2014	M13	14	EDS, cataplexy, sleep paralysis, HH	16	slegiline	AH, disorganization, sexual delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	cannabis, alcohol abuse
Canellas	2014	M15	10	EDS, cataplexy, sleep paralysis, HH	11	n.a.	AH, disorganization, paranoid delusion	HLA +	NT1, SCZ	ICSD-3, D4TR	3	learning disability, G6PD deficiency
Canellas	2014	M19	11	EDS, cataplexy, sleep paralysis, HH	23	n.a.	AH, disorganization, paranoid & megalomaniacal delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	eating disorder
Canellas	2014	M21	14	EDS, cataplexy, sleep paralysis, HH	15	n.a.	AH, disorganization, paranoid delusion	HLA +	NT1, SD	ICSD-3, D4TR	3	learning disability, brain trauma
Canellas	2014	M9 (K)	14	EDS, cataplexy, sleep paralysis, HH	15	no	AH, disorganization, paranoid delusion	Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	atopic dermatitis
Canellas	2014	M17 (K)	15	EDS, cataplexy, sleep paralysis, HH	18	no	AH, disorganization, paranoid delusion	Hcrt1 ↓	NT2, SCZ	ICSD-3, D4TR	3	n.a.
Dauvilliers	2016	1	16	EDS, cataplexy, sleep paralysis, HH	15	no	AH, disorganization, paranoid delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	n.a.
Dauvilliers	2016	2	8	EDS, cataplexy, sleep paralysis	27	no	AH, disorganization, paranoid delusion	HLA +	NT1, SCZ	ICSD-3, D4TR	3	n.a.
Dauvilliers	2016	3	14	EDS	17	no	disorganization, paranoid delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	n.a.
Dauvilliers	2016	4	7	EDS, cataplexy, HH	7	no	AH, disorganization, paranoid delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	n.a.
Dauvilliers	2016	5	15	EDS, cataplexy	39	no	AH, disorganization, paranoid delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	heroin and cocaine abuse

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Dauvilliers	2016	6	36	EDS, cataplexy, sleep paralysis, HH	47	sodium oxybate	AH, disorganization, paranoid delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	n.a.
Dauvilliers	2016	7	30	EDS, cataplexy, sleep paralysis, HH	45	mazindol	AH, disorganization, paranoid delusion	HLA +	NT1, SCZ	ICSD-3, D4TR	3	n.a.
Dauvilliers	2016	8	10	EDS, cataplexy, sleep paralysis, HH	23	no	AH, disorganization, paranoid & magical delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	cannabis abuse
Dauvilliers	2016	9	29	EDS, cataplexy, sleep paralysis, HH	30	modafinil	AH, disorganization, paranoid delusion	HLA +, Hcrt1 ↓	NT1, Schizotypy	ICSD-3, D4TR	3	n.a.
Dauvilliers	2016	10	12	EDS, cataplexy, HH	22	no	AH, disorganization, paranoid delusion	HLA +, Hcrt1 ↓	NT1, SCZ	ICSD-3, D4TR	3	n.a.
Sarkanen	2016	#1	11	EDS, cataplexy, insomnia, HH	13	IVIg 1g/kg x 2d	MH, behavioral disorganization, oneiroid delusion	Hcrt1 ↓	H1N1-vaccin N	Other	2	encephalitis
Canellas-Dols	2017	#1	< 13	EDS, cataplexy, insomnia, nightmares	12	no	MH, unspecified delusion	HLA +, Hcrt1 ↓	NT1, SD	ICSD-3, D5	3	ADHD, polycystic ovaries
Buckley	2017	#1	< 20	EDS, cataplexy, HH	20	sodium oxybate	VH&AH, disorganization, paranoid/mystic/reference delusion	n.a.	NT1, side-effect	ICSD-3	2	n.a.
Cavalier	2018	#1	12	EDS, cataplexy, SP, insomnia, HH	17	amphetamine	MH, disorganization, paranoid delusion	n.a.	NT1, SCZ	ICSD-3, D5	3	n.a.

The table summarizes available clinical data from 58 cases (from 27 papers) that were included in the quantitative analysis of case reports. The "Group" column indicates to which group in our quantitative analysis the case was assigned (2= Narcolepsy with severe or atypical hallucinations or delusional thoughts, 3 = Narcolepsy with comorbid psychotic disorder). Criteria = "other" when no classification system was cited or if some of the criteria required by a system were not mentioned. Abbreviations: AAO = Age at Onset; ADHD = attention deficit hyperactivity disorder; AH = auditory hallucinations; BD = bipolar disorder; DCSAD = Diagnostic Classification of Sleep and Arousal Disorders ; DD : delusional disorder ; DSM3 = Diagnostic and Statistical Manual of Mental Disorders 3rd edition; DSM4TR : Diagnostic and Statistical Manual of Mental Disorders 4th edition - Text Revision ; EDS = Excessive daytime sleepiness; HH = hypnagogic hallucinations; ICSD : International Classification of Sleep Disorders ; MH = multimodal hallucinations; SA = schizoaffective disorder SD = schizophreniform disorder; SP = Sleep paralysis; yo = years old.

Table S2. Articles about narcolepsy and psychotic symptoms from systematic search that were reviewed in full text, by article type

Article type	First Author, year	Number of articles
Case reports	Coren <i>et al.</i> 1965, Shapiro <i>et al.</i> 1976, Pfefferbaum <i>et al.</i> 1977, Schrader <i>et al.</i> 1984, Cadieux <i>et al.</i> 1985, Trzepacz <i>et al.</i> 1987, Douglass <i>et al.</i> 1991, Hays <i>et al.</i> 1992, Takeuchi <i>et al.</i> 2000, Bhat <i>et al.</i> 2002, Szucs <i>et al.</i> 2003, Kishi <i>et al.</i> 2004, Clemons <i>et al.</i> 2004, Vorspan <i>et al.</i> 2005*, Walterfang <i>et al.</i> 2005, Kondziella <i>et al.</i> 2006, Undurraga <i>et al.</i> 2009, Melamed <i>et al.</i> 2009, Crosby <i>et al.</i> 2011, Tsutsui <i>et al.</i> 2012*, Chien <i>et al.</i> 2013*, Chen <i>et al.</i> 2014*, Canellas <i>et al.</i> 2014, Sarkanen <i>et al.</i> 2016*, Canellas-Dols <i>et al.</i> 2017, Buckley <i>et al.</i> 2018, Cavalier <i>et al.</i> 2018*	n=27
Cohort Studies	Sours <i>et al.</i> 1963, Krishnan <i>et al.</i> 1984, Wilcox <i>et al.</i> 1985, Douglass <i>et al.</i> 1993, Pawluk <i>et al.</i> 1995, Besset <i>et al.</i> 1996, Murali <i>et al.</i> 2006*, Fortuyn <i>et al.</i> 2009, MØller <i>et al.</i> 2009*, Leu-Semenescu <i>et al.</i> 2011, Mansukhani <i>et al.</i> 2012*, Lecendreux <i>et al.</i> 2012*, Davies <i>et al.</i> 2013, Huang <i>et al.</i> 2014, Wamsley <i>et al.</i> 2014, Plazzi <i>et al.</i> 2015, Szakacs <i>et al.</i> 2015*, Dauvilliers <i>et al.</i> 2016*, Sansa <i>et al.</i> 2016, Giannoccaro <i>et al.</i> 2017, Drakatos <i>et al.</i> 2017, Mayer <i>et al.</i> 2018, Thakrar <i>et al.</i> 2018	n=23
Review articles	Mitler <i>et al.</i> 1993, Saucerman <i>et al.</i> 1997, Mitler <i>et al.</i> 2002, Tunnicliff <i>et al.</i> 2002, Douglass <i>et al.</i> 2003, Ivanenko <i>et al.</i> 2003*, Fuller <i>et al.</i> 2003, Banerjee <i>et al.</i> 2004, Houghton <i>et al.</i> 2004, Mahowald <i>et al.</i> 2005, Vignatelli <i>et al.</i> 2005, Lemon <i>et al.</i> 2006, Benca <i>et al.</i> 2007, Wise <i>et al.</i> 2007, Kumar <i>et al.</i> 2008, Vignatelli <i>et al.</i> 2008, Owen <i>et al.</i> 2008, Gowda <i>et al.</i> 2014, Rocca <i>et al.</i> 2015*, Kollb-Sielecka <i>et al.</i> 2017, Kornum <i>et al.</i> 2017, Romigi <i>et al.</i> 2018, Moresco <i>et al.</i> 2018, Postiglione <i>et al.</i> 2018*, Yang <i>et al.</i> 2019, Li <i>et al.</i> 2020	n=26
Clinical trials	Parkes <i>et al.</i> 1979, Guilleminault <i>et al.</i> 1986, Schrader <i>et al.</i> 1986, Roselaar <i>et al.</i> 1987, Mitler <i>et al.</i> 1993, US Modafinil Study Group 1998, US Modafinil Study Group 2000, US Xyrem Study Group 2002, Schwartz <i>et al.</i> 2003, Thorpy <i>et al.</i> 2003, US Xyrem Study Group 2003, Becker <i>et al.</i> 2004, Xyrem International Study Group 2005, Harsh <i>et al.</i> 2006, Dauvilliers <i>et al.</i> 2013, Mamelak <i>et al.</i> 2015, Ruoff <i>et al.</i> 2016, Szakacz <i>et al.</i> 2017, Plazzi <i>et al.</i> 2018*, Thorpy <i>et al.</i> 2019	n=20
Meta-analyses **	Keam <i>et al.</i> 2007, Golicki <i>et al.</i> 2010, Alsaikh <i>et al.</i> 2012, Lehert <i>et al.</i> 2018	n=4
	*Study includes child(ren) or adolescent(s).	
	**These are all meta-analyses of narcolepsy clinical trials with relevant information; we found no meta-analyses related to psychotic symptoms.	

Halluc----- Delusions-----

Author	Case#	Group*	AAO Sleep Symptoms	AAO Psychosis	Cataplexy	Sleep Paralysis	Sleep related Hallucinations	Suspected drug induced psych	Suspected cause (drug)	Auditory	Visual	Multimodal	Zoopsia	Delusion	Persecutory	Poisoning	Sexual	Megalomaniac	Mystical	Jealous	Hypochondriac	Fantastic	Influence	Reference	Oniroid	Disorg	Derealization	False memories
Tsutsui	6	3						1	?	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tsutsui	1	3						1	?	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tsutsui	2	3						1	?	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chien	1	2	18	18				1	SO	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0
Chen	1	3	10	12	1	0	1	0		1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0
Canellas	1	3	13	20	1	1	1	0		1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0
Canellas	3	3	8	20	1	1	1	1	mod	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Canellas	5	3	15	16	1	1	1	0		1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Canellas	7	3	12	15	1	0	1			1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Canellas	13	3	14	16	1	1	1	1	meth	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0
Canellas	15	3	10	11	1	1	1			1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Canellas	19	3	11	23	1	1	1			1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0
Canellas	21	3	14	15	1	1	1			1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Canellas	9	3	14	15	1	1	1	0		1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Canellas	17	3	15	18	1	1	1	0		1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Dauvilliers	1	3	16	15	1	1	1	0		1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Dauvilliers	2	3	8	27	1	1	0	0		1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Dauvilliers	3	3	14	17	0	0	0	0		0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Dauvilliers	4	3	7	7	1	0	1	0		1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Dauvilliers	5	3	15	39	1	0	0	0		1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Dauvilliers	6	3	36	47	1	1	1	1	SO	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Dauvilliers	7	3	30	45	1	1	1	1	mazindo	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Dauvilliers	8	3	10	23	1	1	1	0		1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
Dauvilliers	9	3	29	30	1	1	1	1	mod	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Dauvilliers	10	3	12	22	1	0	1	0		1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Sarkanen	1	2	11	13	1	0	1	0		1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Canellas-Dols	1	3	12	12	1	0	0	0		1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buckley	1	2	20	20	1	0	1	1	SO	1	1	1	0	1	1	0	0	0	1	0	0	0	0	1	0	1	0	0
Cavalier	1	3	12	17	1	1	1	1	amph	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0

*Group: 2= Narcolepsy with severe or atypical hallucinations or delusional thoughts, 3 = Narcolepsy with comorbid psychotic disorder

For individual symptoms, 1= present, 0 = absent based on the judgment of the reviewer (rating is 0 unless the symptom is specifically mentioned or described).

amph-amphetamine; mod=modafinil; SO=sodium oxybate.

Table S4: Cohort studies relevant to narcolepsy and psychosis

Author, Year	Primary Group, N, mean age	Control group, N	Comparison, Measure	Design	Evaluations	Outcomes related to psychotic features
Sours, 1963	Narcolepsy, N=83 (75 primary, 13 secondary narcolepsy) <i>Columbia-Presbyterian Medical Center (New York).</i>	n.a.	Prevalence of SCZ in narcolepsy patients.	Retrospective	Chart review	7 (8.4%) comorbid schizophrenia diagnosis 21 (23%) sleep-related halluc (23.6% of primary, 7.6% of secondary narcolepsy)
Krishnan, 1984	Narcolepsy (male only), N=24 <i>VA Hospital, 50 yr (34-68).</i>	n.a.	Prevalence of psychiatric comorbidities.	Retrospective	Chart review	N= (58%) had sleep related hallucinations N=0 (0%) comorbid psychotic disorder
Wilcox, 1985	Narcolepsy, N=28 <i>University of Iowa Hospitals Clinics</i>	Sex- and age-matched healthy Controls, N=28	Prevalence of SCZ, depression, mania, and sleep-related halluc.	Retrospective	Chart review	Narcolepsy vs. controls: Halluc: 12 (42.9%) vs. 0 (0%) (sleep-related halluc unrelated to psychopathology (p> 0.20) Delusions: 11 (39.3%) vs. 0 (0%) Incoherence: 10 (35.7%) vs. 2 (7.14%) Deterioration: 11 (39.3%) vs. 1 (3.57%) SCZ, narcolepsy vs. controls: OR=6.72 (p=0.007) 1 case had history of psychostimulant-induced psychosis
Douglass, 1993	SCZ, N=56 <i>Inpatients in two VA Hospitals</i> mean age: only specified in subgroups	Race-matched controls (not tested for the presence of psychiatric illness), N=56 <i>University of Michigan Tissue Typing Laboratory records</i>	1. Frequency of Narcolepsy Associated Antigens (here HLA-DR15, DQ6) in schizophrenia compared to controls. 2. Prevalence of Narcolepsy in HLQ-DR1(, DQ6 subgroup	Cross-sectional	SADS-L (inclusion) BPRS SDQ HLA typing for HLA-DR15, DQ6	BPRS: mean 46.9 vs. 32.8 in HLA DR15, DQ6 pos vs. neg (p=0.008) HLA DR15, DQ6 35.7% in SCZ vs. 12.5% controls, RR=3.89, p<0.004 Tolerated PSG/MSLT: 16% of SCZ; 45% of SCZ with HLA DR15, DQ6+ Narcolepsy dx: 3.8% of SCZ; 10% of SCZ with HLA DR15, DQ6+ SCZ cases did not meet current diagnostic criteria. 2 definite and 1 partial narcolepsy cases reportedly responded well to stimulants (sleep and psychosis sx). Proposed the term "psychotic form of narcolepsy"
Pawluk, 1995	Narcolepsy, N=11 <i>Minnesota Regional Sleep Disorder Center</i> 54.5±8.1 yr.	n.a.	Side effects on high dosage of MPH (>100mg daily) during >5years	Cross-sectional	MMPI, SCL-90, BDI, BAI, BPRS, HRSD, Stanford Sleepiness Scale	54.5% with multimodal sleep-related halluc, 18.2% without full insight. 9.1% had elaborate, prolonged, bizarre halluc (n=1). MPH treatment duration 17.1 ± 7.3 yr.
Besset, 1996	Narcolepsy-cataplexy, N=140, <i>Sleep Disorder Center, Montpellier (France).</i> 42.26±19.19 yr	n.a.	Side effects of modafinil	Prospective	Chart review	0% psychotic adverse events on 200-400 mg/d, 22.05 ± 24.9 mo
Murali, 2006	Pediatric Narcolepsy, N=8 <i>Sleep Disorder Center (Rochester)</i> 15.3 (11-17) yo	n.a.	Side effects of SO	Retrospective	Chart review	1 patient with dissociation feeling (age 16) SO+amphetamine .mean 11.4 mo

Fortuyn, 2009	Narcolepsy type 1, N=60 <i>Center for Sleep-Wake Disorders (Kempenhaghe, Netherlands), and Department of Neurology (Leiden Netherlands).</i> 43±16 yr	Schizophrenia, N=102. MESIFOS cohort : first psychotic episode f/u, 26 ±6 yr. Healthy controls, N=120. Pop-based Nijmegen-Health Area-2 Study of psychiatric	Phenomenological comparison of hallucinations and delusions between narcolepsy, schizophrenia, and healthy subjects	Cross-sectional	SCAN 2.1 interviews	Halluc: 83% SCZ vs. 2% control (p<0.001), 70% narcolepsy (p=0.89). Comment/conversing 42% SCZ, 17% narcolepsy. NT1: simple visual 15%, complex visual 38%; auditory non-verbal 47% (steps, doors, animals), verbal 40%, tactile halluc 48%; olfactory 28%; multimodal 70%, kinetic 28%; out-of-body 18%; altered perception 25% (presence, derealization, depersonalization). Delusions: SCZ>NT1 (p<0.001), NT1=control except fantastic delusions and false memories (p=0.036). A few NT1 with classical delusions, thought disorder.
Møller, 2009	Pediatric Narcolepsy, N=6 <i>Psychiatric Hospital (Risskov); Aalborg Denmark Pediatric Department (Aarhus), Denmark, 9.5 yr (7-12).</i>	n.a.	Side effects of venlafaxine	Retrospective	Chart review	0% psychotic adverse events. Sleep-related halluc improved in 2 of 6 patients on 37.5mg venlafaxine.
Leu-Semenescu, 2011	Narcolepsy, N=100 NT1 (N=54), NT2 (N=46) <i>Sleep Disorder Unit, Pitié Salpêtrière (Paris, France)</i>	Idiopathic Parkinson disease, N=100 <i>Movement disorder unit Pitié Salpêtrière France</i>	Phenomenological comparison of hallucinations and delusions in NT1, NT2, Parkinson's disease	Cross-sectional	Semi structured interview	Brief delusional psychosis in 2 (4%) of NT1. Hallucination-like experiences in narcolepsy: Illusions 11% (visual distortions, changing voices). Halluc 45% (59% NT1; 28% NT2). Unformed halluc 7% (presence, passage). Visual halluc 43% (95% of those with halluc). Kinetic halluc 24% total; Tactile 15%; Auditory 30%. Halluc when wide awake 18%; Multimodal 33%. Halluc assoc with sleep paralysis (OR=5.7, p=0.01), REM Sleep Behaviour Disorder (OR = 4.3, p = 0.01). In narcolepsy (vs. PD), more auditory, kinetic, multimodal halluc, impaired insight.
Lecendreux, 2012	Pediatric NT1, N=27 <i>Robert Debré Hospital (Paris) (N=5), Department of Neurological Sciences (Bologna) (N=22), 10.3±3.2 yr</i>	n.a.	Side effects of SO	Retrospective	Chart review	63% had hypnagogic halluc at baseline. 25.9% developed hallucinations not related to sleep (no detail).
Mansukhani, 2012	Pediatric NT1, N=15 <i>Sleep Center (Rochester USA) 11 yr (3-17)</i>	n.a.	Side effects of SO	Retrospective	Chart review	0% psychotic adverse event, 33 mo (3-90) follow-up .
Davies, 2013	N=268 prescriptions for narcolepsy	n.a.	Side effects of Modafinil	Prospective	Q-aires returned by prescribers.	1 psychotic event (0.37%) median 8.88 days after treatment introduction (400mg/d).

Huang, 2014	Pediatric NT1, N=102 Subgroup developed comorbid SCZ, N=10. <i>Pediatric sleep center, Child Psychiatry (Taiwan).</i>	Age-gender matched (all children): NT1, N=37; SCZ, N=13.	Identification of SCZ in pediatric NT1. Comparison of clinical features of dual diagnosis NT1+SCZ vs. NT1 or SCZ	Prospective case-control	Sleep q-aire, diaries, QOL, PSG, MSLT, HLA, K-SADS-E, PANSS, BDI, BAI, CGI-severity.	10 (9.8%) NT1 cases developed SCZ during 4 yr follow-up after 2.55±1.8 yr. Proposed greater risk in Chinese/ Japanese populations. NT1+SCZ > SCZ for all psychopathology scales (p<0.05).;
Wamsley, 2014	NT1, N=46 <i>Beth Israel Deaconess Medical Center (Boston), and Leiden University Medical Center (Netherlands)</i> 34.2 ±10.9 yr	Age-matched healthy controls, N=41, 32.7±11.6 yr	Prevalence and predictors of dream delusion (dream-reality confusion)	Cross-sectional	Phone interview: self-report q-aire on subjective memory (PRMQ); Hartmann Boundary Questionnaire.	Dream-reality confusion: NT1>control (83% vs. 15%, p<10 ⁻¹⁰ ; ≥1/mo in 95%; ≥1/wk in 65%). NT1<Cont for prospective (p=0.00007) and retrospective (p=0.0004) memory (subjective self-report). "Dream delusions" could be minutes-weeks. Hypothesis of source memory defect. Dream delusion
Plazzi, 2015	Narcolepsy type 1, N=28 <i>Clinic for Narcolepsy Bologna Italy.</i> 40.0±11.46 yr.	Schizophrenia, N=21 <i>Psychiatry inpatients (Bologna, Italy).</i> 36.8±12.0 yr.	Clinical characteristics; hallucinatory phenomena and psychiatric symptoms.	Cross-sectional	PANSS, HRSD, DES, STAI	Significant group differences: Hallucinations: SCZ>NT1: Daytime, Unimodal, Verbal auditory, Conversing. NT1>SCZ: Sleep-related, Nonverbal aud, Tactile-pain. PANSS total score SCZ (84.95±18.81)>NT1(41.82±7.53).
Szakacs, 2015	Pediatric NT1, N=38 (31 were post H1N1 vaccination). <i>Pop-based, Sweden.</i>	n.a.	Prevalence of psychiatric comorbidities in pediatric narcolepsy	Cross-sectional	DAWBA interview. PANSS	Sleep-related halluc: 20 (53%). Daytime halluc (judged related to NT1): 3 (7.9%). Met psychotic disorder criteria: 0 (0%) .
Dauvilliers, 2016	NT1, N=542 <i>Montpellier (France) (N=381); Barcelona (Spain) (N=161)</i>	n.a.	1. Prevalence of psychosis 2. Presence of NMDA-receptor antibodies (blood, CSF) in sleep disorder biobank samples.	Cross-sectional	1. Chart review, DSM-IV-TR interview if suspected psychotic comorbidity. 2. IgG antibodies (GluN1 subunit of NMDAR).	Comorbid psychotic disorder: 10 (1.8%). Psychosis onset after narcolepsy: 9/10 (90%). Psychosis onset after modafinil: 1/10 (10%). Child/adolescent NT1 onset: 7/10 (70%) (vs. 35% child/adol onset in cases without psychotic disorder). SCZ before age 18: 3/10 (30%). Psychosis onset or worse after stimulants:- 5/10 (50%). Anti-NMDA antibodies: 0/9 with psychotic disorder (7 tested in blood, 2 CSF), 0/25 without psychosis.
Sansa, 2016	Chronic psychotic disorder, N=366 (297 SCZ, 69 SA). <i>Dept of Psychiatry, Sabadell (Spain).</i> 44.3±12 yr (all >18).	n.a.	Prevalence of NT1 in patients with SCZ or SA	Cross-sectional	Sleep Q-aire; if + then ESS; if + then sleep consult & HLA. If ? NT1, then CSF Hcrt1.	Narcolepsy suspected clinically: 24 patients (6.5%). HLA DQB1*06:02 positive in 5/24. Lumbar puncture accepted by 3, all with normal Hcrt-1. NT1 diagnoses: 0.
Mayer, 2018	NT1, N=670. <i>41 Sleep Centers in Europe</i> 39.4 yr.	n.a.	Side effects of SO	Prospective	Clinical follow-up during 72 weeks (visits or calls)	"Agitation" reported in 2 cases (0.3%). One case each reported: hallucinations, delusion, derealization, "mental disorder", psychotic disorder,

Giannoccaro, 2017	Narcolepsy, N=61 (50 NT1, 11 NT2; 20 were children). <i>Sleep Center (Bologna)</i> .	n.a.	Study of Hcrt-1 receptor antibodies. Reported N with psychotic disorders.	Cross-sectional	No psychiatric evaluation	Comorbid psychosis: 5/50 NT1 (10%); 0/11 NT2. Anti-Ncrt1-receptor Ab: 3/61 (4.9%). Of these, 1 also had
Drakatos, 2017	Narcolepsy, N=90 <i>Sleep Disorder Center (London)</i> . 42.5±14.9 yr.	n.a.	Side effects of SO	Retrospective	Chart review	Halluc: 2 (2.2%). Psychosis: 3 (3.3%), associated with older age (r=0.234, p=0.027)
Thakrar, 2018	Central Hypersomnia, N=126 (70 NT1, 47 NT2, 9 Idiopathic). Current meds: modafinil 117; MPH 40; 16 amphetamines).	n.a.	Side effects under modafinil, MPH and/or amphetamines	Retrospective	Chart review	Symptoms considered treatment-related: Halluc: none. Psychosis: none in modafinil or MPH groups. 1 (6.2%) in amphetamine group, resolved after d/c.

Abbreviations: BAI: Beck anxiety Inventory; BDI: Beck Depression Inventory; BPRS: Brief Psychiatric Rating Scale; CSF: cerebro-spinal fluid; DAWBA: Development and Well-Being Assessment; DES: Dissociative Experiences Scale; Halluc: hallucinations; Hcrt1: Hypocretin-1; HRSD: Hamilton Rating Scale for Depression; K-SADS-E: Schedule for Affective Disorder and Schizophrenia for school-aged children, adolescent version; MMPI: Minnesota Multiphasic Personality Inventory; MPH: methylphenidate; MSLT: Multiple Sleep Latency Test; NT1: Narcolepsy Type 1; NT2: Narcolepsy Type 2; OR: odds ratio; PANSS: Positive and Negative Syndrome Scale; PMRQ: Prospective and Retrospective Memory Questionnaire; PSG: Polysomnography; Q-aires: questionnaires; QOL: Quality of Life Scaoe; SA: Schizoaffective disorder; SADS: Schedule for Affective Disorders and Schizophrenia; SCAN2.1: Schedules for Clinical Assessment in Neuropsychiatry; SCL-90: Symptom Checklist 90; SCZ: Schizophrenia; SDQ: Sleep Disorders Questionnaire; SO: Sodium Oxybate; STAI: State-Trait Anxiety Inventory.