

Supplementary table 1

Group	Subgroup	Pseudonym	Sex	Age	Clinical signs (at sample taking)	Pos. psychotic sympt. (a.s.t.)	Disease		GAF	APDs	Comorb. (a.s.t.)	NMDAR ab	ICU (a.s.t.)
							duration (years)	Prev. hosp.					
F2x	F20.0	261630	m	35	hallucinations, delusions	yes	0	0	32	1	arterial hypertension	no	no
F2x	F20.0	329163	m	23	paranoid delusions, hallucinations	yes	0	1	28	1	conjunctivitis	no	no
F2x	F20.0	337421	m	22	visual hallucinations, paranoid delusions, social withdrawal	yes	4	4	45	1	none	no	no
F2x	F20.0	493172	m	45	chronic acoustic hallucinations, poor attention	yes	8	4	40	1	hyperthyroidism	no	no
F2x	F20.0	481349	m	31	persistent acoustic hallucinations, delusions, sleep disturbance	yes	5	2	30	1	oesophagitis	no	no
F2x	F20.0	229838	f	27	paranoid delusions, delusions of grandeur	yes	4	2	10	1	conjunctivitis	no	no
F2x	F20.0	560933	f	28	paranoid delusions, cognitive deficits	yes	0	0	30	1	alcohol abuse, cannabis abuse, amphetamine abuse	no	no
F2x	F20.0	134672	m	24	desorganized behavior, delusions, obsessive- compulsive behaviour	yes	4	4	21	1	arthritis	no	no
F2x	F20.0	657447	m	23	chronic acoustic hallucinations, mood disturbances, impulse control deficits	yes	2	0	21	1	none	no	no
F2x	F20.0	257239	f	20	acute psychotic exacerbation with paranoid delusions, anxiety, aggressive behavior	yes	0	0	15	1	none	no	no
F2x	F20.0	628721	m	31	paranoid delusions, anxiety, disorganized behavior	yes	0	0	35	1	none	no	no
F2x	F20.0	162186	f	55	paranoid delusions, social withdrawal, blunted affect	yes	3	0	24	1	arterial hypertension	no	no
F2x	F20.0	394476	m	26	acoustic hallucinations, delusions, mood changes, anxiety	yes	3	2	40	1	none	no	no
F2x	F20.0	645563	m	22	delusions, depressive symptoms	yes	0	1	25	1	none	no	no
F2x	F20.0	727870	m	24	conversion disorder with motor symptoms	no	3	5	45	1	conversion disorder with motor symptom	no	no
F2x	F20.0	824899	m	28	paranoid delusions, social withdrawal, blunted affect	yes	0	0	21	1	cannabis abuse, Crohn's Disease	no	no
F2x	F20.0	831603	m	49	suicidal ideation, chronic acoustic hallucinations	yes	30	>10	31	1	none	no	no
F2x	F20.0	970549	f	22	depersonalization, derealization, attention deficit	no	1	1	25	0	cannabis abuse, borderline personality disorder	no	no
F2x	F20.0	567584	m	25	delusions, formal thought disorder, attention deficit, obsessions	yes	7	3	38	1	OCD, arterial hypertension	no	no
F2x	F20.0	320776	f	46	altered perceptions	no	8	1	42	1	conversion disorder, migraine	no	no
F2x	F20.0	224222	m	32	suicidal ideation, acoustic and visual hallucinations, delusions	yes	na	0	18	1	cannabis abuse	no	no
F2x	F20.0	349460	m	36	paranoid delusions, acoustic hallucinations	yes	11	5	28	1	none	no	no
F2x	F20.0	914975	m	18	paranoid delusions, illusions	yes	0	0	20	0	none	no	no
F2x	F20.0	255817	m	26	depressive symptoms and chronic acoustic hallucinations	yes	1	1	41	0	cannabis abuse	no	no
F2x	F20.1	998918	m	22	desorganized behavior, formal thought disorder	no	3	5	25	1	none	no	no
F2x	F20.1	631319	m	19	blunted affect, formal thought disorder, attention deficit	no	10	5	21	1	none	no	no
F2x	F20.2	564805	f	62	pernicious catatonia, ECT treatment, fluctuating consciousness	no	4	2	8	1	psoriasis	no	yes
F2x	F20.3	785071	m	45	paranoid delusions, desorganized behavior, tension	yes	4	3	20	1	alcohol abuse, arterial hypertension, obesity	no	no
F2x	F20.4	259990	f	54	depressive symptoms, social withdrawal	no	0	0	41	1	none	no	no
F2x	F22.0	417762	f	47	delusion, tactile hallucinations	yes	2	2	48	1	nodular goiter	no	no
F2x	F22.0	581234	m	37	delusions, anxiety, depression	yes	0	0	35	1	psoriasis	no	no
F2x	F22.0	570989	m	62	paranoid delusions, delusions of reference	yes	1	1	48	1	none	no	no
F2x	F22.0	423680	f	58	delusions, delusions of control	yes	4	0	na	1	migraine	no	no
F2x	F22.0	283220	m	60	paranoid delusions, delusions of control, acoustic hallucinations	yes	1	0	46	1	none	no	no
F2x	F22.0	170216	m	47	paranoid delusions	yes	1	0	40	1	none	no	no
F2x	F23.0	570688	m	58	paranoid delusions, agitation, anxiety	yes	0	0	28	1	stroke, myocardial infarction	no	no
F2x	F23.0	567263	m	25	paranoid delusions, formal thought disorder, suspiciousness	yes	0	0	28	1	none	no	no
F2x	F23.0	605522	f	31	delusions of control, formal thought disorder, agitation, anxiety	yes	0	0	30	0	none	no	no
F2x	F23.1	478219	f	47	paranoid delusions, derealization	yes	0	0	21	1	none	no	no
F2x	F23.1	789818	f	27	anxiety, paranoid delusions	yes	0	0	15	1	none	no	no
F2x	F23.1	446456	f	24	paranoid delusions, coenesthetic hallucinations	yes	0	0	35	1	none	no	no
F2x	F25.0	878131	m	20	manic-psychotic presentation with paranoid delusions and delusions of grandeur, agitation and impulsivity	yes	2	1	14	1	none	no	no
F2x	F25.1	705596	f	53	suicidality, severe depression	no	30	10	10	1	seizure	no	no
F2x	F25.1	479845	f	61	depressed mood, reduced energy	no	14	3	38	1	arterial hypertension	no	no
F2x	F25.1	236253	f	62	dysphoric mood, agitation, disorientation	no	12	5	26	1	type 2 diabetes, primary biliary cirrhosis	no	no
F2x	F25.1	460296	f	64	desorganized behavior, delusions, depressed mood	yes	1	2	30	1	cerebral microangiopathy	no	no
F2x	F25.1	144757	m	24	delusions of control, paranoid delusions, suicidal ideation	yes	2	1	35	1	arterial hypertension	no	no
F2x	F25.1	614608	f	44	somatic delusions, blunted affect, anhedonia	yes	5	5	42	1	seizures	no	no
F2x	F25.1	264491	m	45	delusions, high levels of anxiety, suicide attempt	yes	7	1	15	1	none	no	no
F2x	F25.1	544317	f	22	depressed mood, reduced energy, rumination, anxiety	yes	1	0	na	1	PCO, neurodermatitis	no	no
F2x	F25.2	512581	m	66	depressed mood, paranoid delusions, formal thought disorder	yes	55	2	35	1	atrial fibrillation	no	no
F2x	F23.2	122988	f	31	paranoid delusions, acoustic hallucinations	yes	0	0	25	1	none	no	no
F2x	F25.2	611704	m	23	delusions of control, somatic delusions	yes	0	0	42	1	hypothyroidism	no	no
F2x	F20.0	660254	m	25	suicidality, thought insertion, reduced energy	yes	0.5	2	22	1	none	no	no
F2x	F20.0	763828	m	22	concentration deficits, thought insertion	yes	0.5	1	45	1	none	no	no
F2x	F20.0	655091	m	29	delusions of reference, paranoid delusions, concentration deficits	yes	0.5	2	17	1	none	no	no
F2x	F20.0	953835	m	40	depressed mood, reduced energy, concentration deficits	no	17	2	40	1	amphetamine abuse, ADHD	no	no
F2x	F23.1	377589	m	22	delusions of grandeur, thought withdrawal, formal thought disorder	yes	0	0	12	1	none	no	no
F2x	F20.0	646918	f	34	paranoid delusions, visual hallucinations, delusions of control	yes	0	0	15	1	none	no	no
NMDARE	-	975938	f	37	acute psychosis	yes	-	-	-	-	teratoma	yes	no
NMDARE	-	679603	f	22	seizures	no	-	-	-	-	none	yes	no
NMDARE	-	571459	f	18	cognitive impairment, personality changes, hallucinations, avolition	yes	-	-	-	-	none	yes	no
NMDARE	-	969801	m	78	seizures, altered mental status, dysphagia	no	-	-	-	-	s/p EBV encephalitis, OSA, diabetes, arterial hypertension	yes	no
NMDARE	-	787718	f	22	cognitive impairment, speech disturbance, anxiety, hallucinations	yes	-	-	-	-	neurodermatitis, migraine, tension headache	yes	no
NMDARE	-	660736	m	42	psychomotor retardation, personality changes, speech disturbance, fever, myoclonia, altered mental status, dysphagia, seizures	no	-	-	-	-	none	yes	no
NMDARE	-	208806	f	51	disorientation, agitation, psychomotor retardation	no	-	-	-	-	atrial fibrillation, SCC, diabetes	yes	no
NMDARE	-	340667	m	25	personality changes, acute psychosis, aggressive behaviour, mutism, stupor, seizures	yes	-	-	-	-	none	yes	no
NMDARE	-	435039	f	68	hallucinations	yes	-	-	-	-	arterial hypertension, hypothyroidism	yes	no
NMDARE	-	417259	f	28	acute psychosis, seizures	yes	-	-	-	-	none	yes	no
NMDARE	-	477294	f	21	personality changes, speech disturbance, disorientation, psychomotor retardation, emotional instability, cognitive impairment, avolition	yes	-	-	-	-	hypothyroidism, migraine, tension headache	yes	no
NMDARE	-	992432	f	18	insomnia, acute psychosis, seizures, mutism, hypersexuality	yes	-	-	-	-	teratoma	yes	na
NMDARE	-	391845	f	26	fever, seizures	no	-	-	-	-	none	yes	no
NMDARE	-	411123	f	23	insomnia, cognitive impairment, psychomotor retardation	no	-	-	-	-	none	yes	no
NMDARE	-	518953	f	47	disorientation, altered mental status, cognitive impairment, avolition, fever, hallucinations	yes	-	-	-	-	s/p HSV encephalitis	yes	no
NMDARE	-	219839	m	66	acute psychosis	yes	-	-	-	-	none	yes	no

Supplementary table 1: Additional clinical characteristics of F2x and NMDARE patients

Ab: antibody; ADHD: attention deficit hyperactivity disorder; APDs: antipsychotic drugs; A.s.t.: at sample taking; Comorb: comorbidities; CSF - cerebrospinal fluid; ICU - Intensive Care Unit; f: female; Dd: differential diagnosis; Dx: diagnosis; EBV: Epstein-Barr virus; ECT - electroconvulsive therapy; F2x: patients with psychotic disorder; GAF: Global Assessment of Functioning; Hosp: hospitalizations; HSV: Herpes simplex virus; NMDARE: anti-NMDA-receptor encephalitis; m: male; OCD - obsessive-compulsive disorder; OSA - Obstructive sleep apnea; PCO - polycystic ovary syndrome; Pos: positive; Prev: previous; Pseud: pseudonym; SCC - squamous cell carcinoma; s/p: status post; sympt: symptoms

Supplementary table 2

	Outcome	Term	Estimate	Std.error	Statistic	P-value
F2x vs IIH	Blood cMono	dxF2x	2.5359	1.2786	1.9834	0.0489
	Blood iMono	dxF2x	-4.0791	0.9967	-4.0926	0.0001
	Blood monocytes	dxF2x	0.5532	0.4895	1.1301	0.2601
	Blood NK cells	dxF2x	4.0075	1.4729	2.7209	0.0072
	CSF protein	dxF2x	65.9218	29.6529	2.2231	0.0275
	CSF ncMono	dxF2x	0.7723	0.3674	2.1019	0.0370
	CSF CD4+	dxF2x	-3.4326	1.7549	-1.9560	0.0521
	CSF lymphocytes	dxF2x	-8.8637	3.3703	-2.6300	0.0093
	CSF monocytes	dxF2x	4.2888	2.0287	2.1140	0.0360
	CSF BBBD	dxF2x	0.2181	0.0785	2.7779	0.0061
F2x vs RRMS	Blood plasma cells	dxF2x	-0.0222	0.0222	-1.0016	0.3180
	CSF cells	dxF2x	-6.9370	1.2825	-5.4091	0.0000
	CSF BBBD	dxF2x	0.1889	0.0768	2.4611	0.0149
	CSF Ig synthesis	dxF2x	-0.5720	0.0617	-9.2698	0.0000
	CSF ocbs	dxF2x	-0.8528	0.0493	-17.2878	0.0000
	CSF B cells	dxF2x	-2.9297	0.5290	-5.5384	0.0000
	CSF cMono	dxF2x	-9.8327	3.7565	-2.6175	0.0097
	CSF iMono	dxF2x	9.6811	3.7150	2.6060	0.0100
	CSF HLA-DR+CD4+	dxF2x	-2.7357	1.1469	-2.3853	0.0182
	CSF granulocytes	dxF2x	4.3651	2.1996	1.9845	0.0488
	CSF lymphocytes	dxF2x	-20.5043	3.2945	-6.2237	0.0000
	CSF monocytes	dxF2x	13.8677	1.9831	6.9928	0.0000
	CSF NK cells	dxF2x	0.8192	0.3009	2.7221	0.0072
	CSF plasma cells	dxF2x	-0.6575	0.1128	-5.8275	0.0000
	CSF T cells	dxF2x	2.4631	0.9007	2.7346	0.0069
CSF HLA-DR+T cells	dxF2x	-3.8443	1.4685	-2.6179	0.0097	
F2x vs NMDARE	Blood cMono	dxF2x	4.4450	1.8010	2.4680	0.0146
	Blood iMono	dxF2x	-3.0283	1.4040	-2.1570	0.0324
	Blood granulocytes	dxF2x	-7.1205	2.4714	-2.8811	0.0045
	Blood lymphocytes	dxF2x	6.5321	2.1188	3.0829	0.0024
	Blood plasma cells	dxF2x	-0.1633	0.0320	-5.1086	0.0000
	Blood NK dim	dxF2x	10.3580	2.7551	3.7595	0.0002
	CSF cells	dxF2x	-7.9329	1.8481	-4.2926	0.0000
	CSF protein	dxF2x	37.4051	41.7697	0.8955	0.3718
	CSF BBBD	dxF2x	0.2170	0.1106	1.9618	0.0514
	CSF Ig synthesis	dxF2x	-0.3368	0.0889	-3.7875	0.0002
	CSF ocbs	dxF2x	-0.4756	0.0711	-6.6906	0.0000
	CSF B cells	dxF2x	-4.8341	0.7623	-6.3418	0.0000
	CSF cMono	dxF2x	-16.0706	5.4131	-2.9688	0.0034
	CSF iMono	dxF2x	17.7624	5.3533	3.3180	0.0011
	CSF granulocytes	dxF2x	9.0018	3.1697	2.8400	0.0051
	CSF lymphocytes	dxF2x	-23.1083	4.7474	-4.8675	0.0000
	CSF monocytes	dxF2x	12.6982	2.8577	4.4435	0.0000
	CSF plasma cells	dxF2x	-0.1463	0.1626	-0.8999	0.3694
	CSF T cells	dxF2x	3.3017	1.2980	2.5438	0.0119
	CSF NK bright	dxF2x	17.6142	5.7973	3.0384	0.0028
F2x corr. GAF	CSF ncMono	GAF	-0.0451	0.0201	-2.2456	0.0290
	Blood CD 8+	GAF	-0.1793	0.0844	-2.1227	0.0386
	Blood NK cells	GAF	0.2052	0.0990	2.0725	0.0432
	Blood T cells	GAF	-0.2249	0.1018	-2.2091	0.0316
F2x corr. hospitalizations	CSF protein	prev. hosp.	13.1021	8.5662	1.5295	0.1320
	CSF NK T cells	prev. hosp.	0.1958	0.0996	1.9667	0.0544
	Blood NK cells	prev. hosp.	-0.9537	0.4441	-2.1473	0.0363
	Blood T cells	prev. hosp.	1.3856	0.4705	2.9453	0.0048
	Blood NK bright	prev. hosp.	0.5113	0.2518	2.0303	0.0473
F2x corr. duration	CSF protein	disease duration	3.8572	2.3948	1.6107	0.1132
	Blood iMono	disease duration	0.1035	0.0525	1.9703	0.0540

Supplementary table 2: Multiple regression analysis adjusting for age and sex

BBBD: blood-brain-barrier dysfunction; cMono: classical monocytes; corr: correlation; CSF: cerebrospinal fluid; dx: diagnosis; F2x: patients with psychotic disorder; hosp: hospitalizations; Ig: immunoglobulin; IIH: intracranial hypertension; iMono: intermediate monocytes; ncMono: non-classical monocytes; NK: natural killer cells; NMDARE: anti-NMDA-receptor encephalitis; ocb: oligoclonal band; p: previous; RRMS: Relapsing-Remitting Multiple Sclerosis; Std: standard; vs: versus

Supplementary table 3

F2x vs IIH (blood)			F2x vs IIH (CSF)		
	<u>Parameter</u>	<u>AUC</u>		<u>Parameter</u>	<u>AUC</u>
	iMono	0.7807		Protein	0.7362
	NK cells	0.6741		ncMono	0.7172
	Monocytes	0.6636		Lymphocytes	0.6752
	cMono	0.6620		Monocytes	0.6403
	B cells	0.6456		CD4+	0.6346
	ncMono	0.6154		CD4+CD8+ ratio	0.6170
	T cells	0.5957		CD8+	0.6139
	NK dim	0.5792		B cells	0.5860
	HLA-DR+CD4+	0.5764		T cells	0.5597
	Granulocytes	0.5736		Nk T cells	0.5549
	CD4+	0.5713		Granulocytes	0.5499
	NK bright	0.5660		iMono	0.5441
	CD4+CD8+ ratio	0.5656		CD4+CD8+	0.5345
	HLA-DR+ T cells	0.5642		NK bright	0.5335
	CD 8+	0.5597		cMono	0.5308
	NK T cells	0.5371		HLA-DR+ T cells	0.5167
	Lymphocytes	0.5252		HLA-DR+CD4+	0.5096
	HLA-DR+CD8+	0.5184		cells	0.5010
	CD4+CD8+	0.5078		NK dim	0.4995
	Plasma cells	0.4654		HLA-DR+CD8+	0.4949
				Ig synthesis	0.4914
				Ocbs	0.4914
				Plasma cells	0.4819
				NK cells	0.4753
				BBBD	0.3326
F2x vs RRMS (blood)			F2x vs RRMS (CSF)		
	<u>Parameter</u>	<u>AUC</u>		<u>Parameter</u>	<u>AUC</u>
	B cells	0.6195		Ocbs	0.9302
	Monocytes	0.6191		Plasma cells	0.8967
	Plasma cells	0.6191		Monocytes	0.8804
	NK cells	0.6087		Lymphocytes	0.8293
	Granulocytes	0.6034		Cells	0.8024
	iMono	0.6017		Ig synthesis	0.7975
	Lymphocytes	0.5911		B cells	0.7964
	CD4 +	0.5822		NK T cells	0.7634
	CD4+CD8+ ratio	0.5767		iMono	0.6828
	cMono	0.5695		cMono	0.6793
	CD8+	0.5672		Granulocytes	0.6740
	T cells	0.5626		HLA-DR+ T cells	0.6564
	NK T cells	0.5447		HLA-DR+CD4+	0.6473
	HLA-DR+CD4+	0.5232		T cells	0.6429
	HLA-DR+ T cells	0.5048		HLA-DR+CD8+	0.6047
	ncMono	0.5023		Protein	0.5901
	CD4 + CD8 +	0.5023		CD4+CD8+	0.5827
	NK dim	0.4937		NK cells	0.5760
	NK bright	0.4898		NK dim	0.5574
	HLA-DR+CD8+	0.4761		ncMono	0.5533
				NK bright	0.5470
				CD4+	0.5271
				CD8+	0.5264
				CD4+CD8+ ratio	0.5260
				BBBD	0.3661
F2x vs NMDARE (blood)			F2x vs NMDARE (CSF)		
	<u>Parameter</u>	<u>AUC</u>		<u>Parameter</u>	<u>AUC</u>
	Plasma cells	0.7834		Lymphocytes	0.8707
	Lymphocytes	0.7505		Monocytes	0.8438
	NK dim	0.7462		B Cells	0.8206
	iMono	0.7414		Cells	0.8023
	Granulocytes	0.7360		Granulocytes	0.8006
	cMono	0.7107		iMono	0.7656
	NK cells	0.6347		cMono	0.7441
	HLA-DR+ T cells	0.6078		Ocbs	0.7414
	B cells	0.5981		Plasma cells	0.7101
	NK bright	0.5927		Protein	0.7047
	HLA-DR+CD8+	0.5916		NK bright	0.7037
	Monocytes	0.5787		T cells	0.6832
	CD4+CD8+ ratio	0.5787		Ig synthesis	0.6789
	CD8+	0.5776		NK T cells	0.6730
	ncMono	0.5749		HLA-DR+CD8+	0.5894
	CD4+	0.5636		ncMono	0.5695
	CD4+CD8+	0.5593		CD4+CD8+	0.5668
	HLA-DR+CD4+	0.5593		CD4+	0.5587
	T cells	0.5506		CD8+	0.5560
	NK T cells	0.5242		HLA-DR+ T cells	0.5560
				NK dim	0.5550
				CD4+CD8+ ratio	0.5528
				NK cells	0.5436
				HLA-DR+CD4+	0.5323
				BBBD	0.3470

Supplementary table 3: ROC AUC values of F2x vs IIH, RRMS, and NMDARE patients

AUC: area under the curve; BBBD: blood-brain-barrier dysfunction; cMono: classical monocytes; CSF: cerebrospinal fluid; F2x: patients with psychotic disorder; Ig: immunoglobulin; IIH: intracranial hypertension; iMono: intermediate monocytes; ncMono: non-classical monocytes; NK: natural killer cells; NMDARE: anti-NMDA-receptor encephalitis; ocbs: oligoclonal band; RRMS: Relapsing-Remitting Multiple Sclerosis.

Supplementary table 4

F2x vs IIH (combined)	Model	ROC	ROC SD	Sens	Sens SD	Spec	Spec SD
	Elastic net	0.87902	0.07939	0.83800	0.13653	0.74133	0.15887
	FDA	0.76098	0.12374	0.71600	0.17317	0.66400	0.17455
	Lasso	0.87351	0.08755	0.80733	0.12765	0.74067	0.17331
	LDA RFE	0.86782	0.08644	0.79200	0.14778	0.77467	0.16254
	LR RFE	0.76309	0.11626	0.71000	0.17000	0.73000	0.15002
	N. Bayes RFE	0.82456	0.10707	0.74733	0.15343	0.76667	0.16454
	Ridge	0.87442	0.08055	0.81400	0.12437	0.72067	0.17035
	SVM RFE	0.85362	0.09873	0.80133	0.15649	0.76400	0.14950

Supplementary table 4: Performance of multiparametric models to distinguish F2x from control patients

FDA: flexible discriminant analysis; F2x: patients with psychotic disorder; IIH: intracranial hypertension; Lasso: least absolute shrinkage and selection operator, LDA RFE: linear discriminant analysis with recursive feature elimination; LR RFE: logistic regression with recursive feature elimination; N. Bayes: naive bayes; RFE: recursive feature elimination; ROC: receiver operating characteristic; SD: standard deviation; Sens: sensitivity; Spec: specificity; SVM: support vector machines