

Table 1: Summary of studies on Corticosteroids

Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Protocol	Effect on seizure	Other effect	Side-effect
Chinchilla 1994	8	5	12 months	IV 400mg/m2	EPC stop 5/8, improvement 3/8.	Hemiparesis resolved 5/8	100% (Cushing, infection, hypertension, osteoporosis)
Hart 1994	10	5.5	3.5 years	IV 400mg/m2 or 2 mg/kg orally	Improvement 5/10	<i>Not detailed</i>	Frequent
Krauss 1996	1	15	14 years	50mg/d orally	Improvement	Cognitive Improvement	<i>Not detailed</i>
Granata 2003	14	4.9	24.3 months	Methylprednisolone (20mg/kg/d) or prednisone (1mg/kg/d) ACTH	Improvement 11/14	Neurological Improvement 2/14	<i>Not detailed</i>
Bahi-Buisson 2007	11	6	10.6 months	IV 400mg/m2 ou per os 2 mg/kg	<u>At 3 months:</u> 9/11 efficacy <u>After 6 months:</u> 100% of long-term recurrence with 7/11 needing hemispherotomy	<u>At 3 months:</u> 5/11 partial improvement; 2/11 complete improvement <u>After 6 months:</u> 2/11 partial improvement	100% if IV
Takahashi 2013	21	8.2	5.7 years	30 mg/kg/d (children) to 1 g/d (adults) for 3 days	5% seizure-free 81% responders	76% cognitive stabilisation 10% motor improvement / 10% motor	62% stop CTC

						worsening	
Pellegrin 2020	53	6.5	1.7 years	2 mg/kg/d to a maximum of 60 mg/d orally	33/40(70%) responder	<i>Not detailed</i>	<i>Not detailed</i>

Table 2: Summary of studies on Intravenous Immunoglobulins (IVIG)

Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Protocol	Effect on seizure	Other effect	Side-effect
Walsh 1991	2	9	2 years	0.2mg/kg	Improvement	Neurological Improvement	No major
Wise 1996	1	14	6 months	0.4mg/kg/d	Improvement	Motor & cognitive stabilisation	No major
Leach 1999*	2	36	6.5 years	0.4mg/kg/d	Improvement	Motor & cognitive Improvement	No major
Villani 2001*	1	18	23 years	0.4mg/kg/d	Decrease > 75%	Slight Motor & cognitive improvement	No major
Krauss 1996	1	15	14 years	0.4mg/kg/d	No effect	No effect	No major
Granata 2003	11	5.8	17.8 months	2g/kg	3/11 improvement	1/11 major improvement 2/11 minor improvement	No major
Takahashi 2013	13	13.6	4 years	0.4mg/kg/d	0% seizure-free 23% responders	45% cognitive stabilisation 15% motor improvement / 62% motor worsening	No major
Castellano 2017	3	47	4 years	<i>Not detailed</i>	1/3 improvement	1/3 cognitive improvement	No major
Pellegrin	35	<i>Not</i>	<i>Not detailed</i>	2 g/kg over 2 to 5	14/35 (40%)	<i>Not detailed</i>	<i>Not detailed</i>

2020		<i>detailed</i>		days monthly	responder		
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Table 3: Summary of studies on Plasmapheresis / Immunoabsorption

Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Clinical particularities	Effect on seizure	Other effect	Side-effect
Rogers 1994	1	9	<i>Not detailed</i>	AntiGluR3+	Improvement with short-term recurrence	Improvement with short-term recurrence	No
Andrews 1996	4	7	4 years	¾ antiGluR3+	¾ improvement with rapid recurrence between sessions	2/4 improvement with rapid recurrence between sessions	1 infection + thrombosis
Palcoux 1997	1	4	3 months	Anti-GluR3 +	Transitory Improvement	Transitory Improvement	Infection
Antozzi 1998	1	11	5 years	Anti-GluR3 +	Improvement	Cognitive and motor Improvement	No
Granata 2003	8 (5 plasma)	6.3	15 months (plasma) / 65.3 months (adsorption)	2 antiGluR3+	1/5 plasma (stop EPC) 1/3 adsorption (All with antiGluR3+)	0/5 plasma 1/3 adsorption	<i>Not detailed</i>
Thilo 2009	1	13	5 years	AntiGluR3 -	Improvement with short-term recurrence	<i>Not detailed</i>	<i>Not detailed</i>
Amrom 2014	1	8	2 years	Lupus associated	No effect	No effect	No

Sanfilippo 2016	1	30	2 years	AntiGluR3 -	Disappearance of seizure after 1 session	Stop of atrophy and improvement of hypersignal after 1 session	No
Timarova 2016	1	17	<i>Not detailed</i>	Anti- gGQ1b + GAD +	No effect	<i>Not detailed</i>	No
Castellano 2017	1	53	11 years	Adult onset	No effect	No effect	<i>Not detailed</i>
Stabile 2018	2	16 23	15 years 15 years	Adult onset	No effect	No effect	No

Soh 2017	1	36	<i>Not detailed</i>	Adult onset	No effect	No effect	No
Sansevere 2020	1	6	5 years	Psoriasis + uveitis	No effect (hemispherotomy)	No effect	<i>Not detailed</i>
Cantarín-Extremera 2020	1	17	7 years	AntiGluR3 -	Transitory effect (recurrence at 1 month)	<i>Not detailed</i>	No
Pellegrin 2020	2	<i>Not detailed</i>	<i>Not detailed</i>	<i>Not detailed</i>	No effect	No effect	<i>Not detailed</i>

Table 4: Summary of studies on immunotherapies targeting lymphocytes

Tacrolimus							
Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Protocol	Effect on seizure	Other effect	Side-effect

Bien 2004	7 (comparison with historical cohort)	11.6	6.6 months	0.2-0.8 mg/kg (Serum level 5-15 ng/l)	No significant change	5 stabilisation and 1 motor improvement Slowing of MRI atrophy	No significant SE	
Thilo 2009	1	13	5 years	Up to 16 mg/day	No effect	<i>Not detailed</i>	<i>Not detailed</i>	
Terra bustamante 2009	1	<i>Not detailed</i>	<i>Not detailed</i>	<i>Not detailed</i>	No effect	No effect	<i>Not detailed</i>	
Takahashi 2013	12	8.8	6.4 years	Starting dose 0.1 mg/kg/day (children) or 3 mg/ day (adults) with dose escalation based on blood levels	8% seizure-free 42% responders	75% cognitive stabilisation 8% motor improvement	No significant SE	
Bien 2013	9	5.7	11.1 months	Dose to achieve serum level = 12-15 ng/l	No effect	Motor worsening and MRI atrophy less marked than historical cohort	2 severe infections	
Liba 2017	1	7	2 years	<i>"Dose adapted to serum level"</i>	No effect	No effect	<i>Not detailed</i>	
Mycophenolate Mofetil								
Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Clinical particularities	Protocol	Effect on seizure	Other effect	Side-effect
Liba 2015	1	8	1 months	AAN 1/640	+ CTC + cyclophosphamide	Seizure-free	No neurological	<i>Not detailed</i>

							decline	
Garg 2019	1	29	1.5 years	Neurological deficit without seizure	3 g per day + CTC	No seizure	Stop neurological deterioration	<i>Not detailed</i>
Orsini 2020	1	6.5	1 year	Typical form	750 mg/m2	Seizure frequency decrease	Neurological improvement	No
Thilo 2009	1	13	5 years	EPC AntiGluR3 -	2g/d	No effect	No effect	<i>Not detailed</i>
Liba 2017	1	7	2 years	Classical form	<i>Not detailed</i>	No effect	No effect	<i>Not detailed</i>
Azathioprine								
Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Clinical particularities	Protocol	Effect on seizure	Other effect	Side-effect
Muto 2010	1	13	7.25 years	Associated uveitis	<i>Not detailed</i>	No effect	No effect	<i>Not detailed</i>
Bittner 2013 + Schneider 2016 (same patient)	1	8	16 years	Typical form	<i>Not detailed</i>	No effect	No effect	<i>Not detailed</i>
Lagarde 2016	1	37	6 years	Associated uveitis	<i>Not detailed</i>	No effect	No effect	No
Klaa 2020	1	11	3 years	Typical form	100 mg	Partial efficacy	Mild improvement of motor function	<i>Not detailed</i>
Pellegrin	30/53	6.8	2.8 years	Only Children	Relay after	Efficacy 25/30	No clear	3

2020					corticosteroids, 1.5 mg/kg/day orally		effect	leukopenia (1 stop)
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Table 5: Summary of studies on Rituximab

Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Clinical particularities	Effect on seizure	Other effect	Side-effect
Laxer 2008 <i>(AES poster / not published)</i>	9	6-22	<i>Not detailed</i>		8/9 improvement 3 seizure-free	8/9 motor or cognitive improvement / stop of	Follow-up mean 10 months

						progression	
Thilo 2009	1	13	5 years	EPC AntiGluR3 -	Seizure-free 6 months then seizure recurrence (less severe)	No effect	No
Bittner 2013 + Schneider 2016 (<i>same patient</i>)	1	8	16 years		No effect	No effect	<i>Not detailed</i>
Timarova 2016	1	17	<i>Not detailed</i>	Anti- gGQ1b + GAD +	Disappearance of status epilepticus (2/months before)	<i>Not detailed</i>	No
El Tawil 2016	1	43	18 years	Adult onset	Improvement of frequency and severity (no more precision)	Walking and language Improvement	<i>Not detailed</i>
Scheider 2016	1	12	<i>Not detailed</i>		No effect	No effect	<i>Not detailed</i>
Liba 2017	1	7	2 years		No effect	No effect	<i>Not detailed</i>
Castellano 2017	2	44 & 53	3 & 11 years	Adult onset	No effect	No effect	<i>Not detailed</i>
Sansevere 2020	1	6	5 years	Psoriasis + uveitis	No effect (hemispherotomy)	No effect	<i>Not detailed</i>
<u>Cantarín-Extremera</u> 2020	1	17	7 years	AntiGluR3 -	No effect	No effect	<i>Not detailed</i>

Table 6: Summary of studies on immunotherapies targeting pro-inflammatory cytokines

Adalimumab							
Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Protocol	Effect on seizure	Other effect	Side-effect

Lagarde 2016	11	6.5	31 months	24 mg/ m2 with a maximum of 40 mg via subcutaneous injection every 14 days	5/11 responder (no seizure free)	3/5 of the responders with motor improvement / stability 3/5 with cognitive stability	1 superficial skin infection	
Anakinra								
Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Clinical particularities	Protocol	Effect on seizure	Other effect	Side-effect
Mochol 2021	1	17	28 years	Status epilepticus	100 mg subcutaneously	Seizure-free	<i>Not detailed</i>	Pneumonia / urinary infections

Table 7: Summary of studies on other Immunotherapies

Cyclophosphamide								
Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Clinical particularities	Protocol	Effect on seizure	Other effect	Side-effect

Krauss 1996	1	15	14 years		750 mg/m2	Transitory effect for 6 months then worsening	Transitory effect for 8-9 months then worsening	No
Granata 2003	4	5.5	46.7 months		500 mg/m2	No effect	No effect	1 severe leukopenia
Liba 2015	1	6	1 months	AAN 1/640	In combination with CTC + MMF	Seizure-free (15 months)	<i>Not detailed</i>	<i>Not detailed</i>
Amrom 2014	1	8	2 years	Lupus associated	<i>Not detailed</i>	No effect	No effect	No
Timarova 2016	1	17	<i>Not detailed</i>	Anti-GQ1b + GAD +	<i>Not detailed</i>	No effect	<i>Not detailed</i>	No
Stabile 2018	2	16 23	15 years 15 years	Adult onset	<i>Not detailed</i>	No effect	No effect	No
Soh 2017	1	36	<i>Not detailed</i>	Adult onset	<i>Not detailed</i>	No effect	No effect	No
Mitoxantrone								
Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Clinical particularities	Protocol	Effect on seizure	Other effect	Side-effect
Stabile 2018	2	16 23	15 years 15 years	Adult onset	<i>Not detailed</i>	Stop EPC + seizure frequency decrease (n=2)	Stabilisation ?	leukopenia No
Natalizumab								
Studies	Nb of patients	Age of onset (year)	Delay before immunotherapy	Clinical particularities	Protocol	Effect on seizure	Other effect	Side-effect
Bittner 2013 + Schneider	1	8	16 years		monthly cycles of natalizumab (300 mg)	Stop EPC, from 5-10 to 1 seizure daily	Not reported	No

2016 (<i>same patient</i>)								
Soh 2017	1	36	<i>Not detailed</i>	Adult onset	<i>Not detailed</i>	No effect	No effect	No