

The treatment of antibody-mediated encephalitis: current, future therapies, unmet need and patient management

Advances in Therapy

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43 **Table 1.** Treatment options for movement disorders in autoimmune encephalitis (AE)

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Symptom, common	Drug(s)	Key points and side effects antibodies, Refs.
Dystonia and dyskinesia (NMDAR, LGI1, CASPR2) 1-6	Anticholinergic (Trihexyphenidyl)	Among the most effective agents for treating dystonia; risk of confusion, especially in older adults
	Dopaminergic drugs (Levodopa)	Evidence of benefits in children with NMDARE
	Benzodiazepines (Diazepam, clonazepam, lorazepam)	Second- or third-line therapy
	Muscle relaxants (Baclofen)	Intrathecal administration in cases of refractory dystonia; risk of CNS inhibition, seizures, delirium
	Botulinum neurotoxin	Evidence of benefits in refractory orofacial dyskinesia in NMDARE
Chorea (NMDAR, LGI1, CASPR2) 1,4,6,7	Dopamine-depleting agents (Tetrabenazine, Valbenazine, Deutetrabenazine)	Parkinsonism, depression.
	Dopamine receptor blockers (Chlorpromazine, Clozapine, Olanzapine, Risperidone)	- Parkinsonism, depression, neuroleptic malignant syndrome-like presentations (haloperidol, chlorpromazine) - Dystonic reaction to haloperidol reported in 3/7 of children NMDARE. - Clozapine and olanzapine can lower seizure threshold.
	ASM (Levetiracetam, Carbamazepine)	
Tremor (NMDAR, CASPR2, DPPX) 1,3,8,9	Beta adrenergic blockers (Propranolol)	Bradycardia, hypotension, bronchospasm
	ASM (Primidone, Topiramate, Gabapentin)	
Myoclonus (GABA _B R, NMDAR, LGI1, CASPR2, DPPX) 1,3,6,9,10	ASM (Valproic acid, levetiracetam, brivaracetam)	Predominantly cortical myoclonus in AE
	Benzodiazepines (Clonazepam)	Patients with severe action myoclonus
Stereotype (NMDAR) 1,4	Midazolam	Evidence in children with NMDAR-Ab-E

Parkinsonism (IgLON5, GAD65) ^{3,6}	Dopaminergic drugs (Levodopa, ropinirole, pramipexole, bromocriptine)	More common in older patients; less frequent than hyperkinetic disorders
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