

Medications for Dysautonomia/Dystonia/Spasticity

Common symptoms: agitation, diaphoresis, hyperthermia, hypertension, tachycardia, tachypnea, hypertonia & extensor posturing, papillary dilation

Medication	MOA	Symptoms treated	Dosing	Adverse effects
Morphine	Opioid agonist	Agitation (causes sedation & analgesia) Hypertension (causes hypotension) Tachycardia (causes sedation & bradycardia) Tachypnea (causes sedation & respiratory depression)	Children: 0.2-0.5mg/kg/dose po every 4-6hrs or 0.01-0.2mg/kg/dose IV; Adults: 10-30mg po or 2.5-10mg IV given up to every 4-6hrs	Constipation, hypotension, respiratory depression, pruritis, drowsiness, nausea/vomiting, euphoria, histamine release, ileus
Bromocriptine	Dopamine (D2) agonist	Hyperthermia (lowers temperature threshold) Diaphoresis Hypertension	Children: 0.025mg/kg BID, increase to 0.05mg/kg TID Adolescents & adults: 1.25mg po BID titrated to 10-40mg/day (max 100mg/day)	Mental status changes, dyskinesia
Propranolol	Non-selective beta-blocker	Hypertension Tachycardia Agitation Hyperthermia	Children: 0.5-1mg/kg/day po divided QID; Adults: 10-20mg po given every 6-12hrs (max 640mg/day)	Bradycardia, lightheadedness, lassitude, weakness, bronchospasm *caution in asthmatics & diabetics*
Clonidine	Alpha-2 agonist; decrease sympathetic flow from CNS; decreased BP	Agitation (causes sedation & behavior stabilization) Hypertension	Children: 5-10mcg/kg/day po divided; Adult: 0.2-1.2mg/day po divided	Sedation, hypotension, rebound hypertension with abrupt withdrawal
Lorazepam	Benzodiazepine	Agitation (anxiolytic & sedative) Hypertonia (muscle relaxant)	Children: 0.05mg/kg/dose IV or PO up to 2mg every 4-8hrs; Adults: 2-4mg IV or po every 4-8hrs	Lightheadedness, lassitude, motor incoordination, confusion
Baclofen	Gamma Aminobutyric Acid	Hypertonia (muscle relaxant) Hyperthermia (secondary to muscle relaxation) Contractures	Infants 30 days to 2 yrs: 1 mg PO Q6 hr. Give 1 st dose to eval effect in real time. <u>Children 2-7yrs</u> : 10-15mg/day PO; may increase x 5-15 mg/day every 3 days Children 8-12yrs: 10 to 15 mg/day PO (divided BID-TID); may increase x 5-15 mg/day every 3 days <u>Adults (>12yrs)</u> : 5mg PO TID; may increase x 15 mg/day every 3 days; may go to QID . Max 25 mg Q6 hr (no benefit with more)	Sedation, nausea/vomiting, poor muscle tone, dizziness, headache, asthenia, avoid abrupt withdrawal

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Dantrolene	Dissociates excitation contraction by interfering with Ca++ release from sarcoplasmic reticulum	Hypertonia (muscle relaxant) Hyperthermia (secondary to muscle relaxation) Contractures	Children: 0.5mg/kg/day divided BID, increase to 0.5mg/kg/dose BID-QID, then increase by increments of 0.5mg/kg to 3mg/kg/dose BID-QID Adult: 25mg po QD, increase to 25mg BID, then increase by 25mg to max 100mg QID	Hepatotoxicity, drowsiness, generalized weakness
Gabapentin	Gamma Aminobutyric Acid	Dystonia Diaphoresis Agitation	Children 3-12yrs: 10 to 15 mg/kg/day PO TID, increase over 3 days to 40mg/kg/day (3-4yrs) or 25-35mg/kg/day (5-12yrs) Adults (>12yrs): 300 mg PO TID; may increase up to 1800 mg/day given TID; max 2400-3600mg/day	Renal adjust, neuropsychiatric effects (emotional lability, hostility, thought disorder, hyperkinesia), nausea/vomiting, dizziness, nystagmus, sedation, ataxia
Drugs also mentioned (symptoms treated): fentanyl, oxycodone & naltrexone (same as morphine); carbidopa/levodopa ("locked-in" syndrome); midazolam, diazepam, clonazepam (same as lorazepam); chlorpromazine (hyperthermia); acetaminophen (hyperthermia); hydralazine (hypertension)				

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