

Algorithm for Chronic Pain (by Mode of Action)

Proposed Mode of Action	Therapeutic Category	Medication	Dose	Route	Regimen
Alpha II-Agonist	Hypotensive	Clonidine	0.2%	Lipoderm	tid up to q2h prn
Alpha II-Agonist	Hypotensive	Phenoxybenzamine	1.5-5mg/d	Lipoderm	qd
AMPA-Na Channel Blocker	Anticonvulsant	Carbamazepine	10%	Lipoderm	tid up to q2h prn
AMPA-Na Channel Blocker	Anticonvulsant	Gabapentin	6-10%	Lipoderm	tid up to q2h prn
AMPA-Na Channel Blocker	Anticonvulsant	Gabapentin	100-200	po	b-tid max 800mg/d
AMPA-Na Channel Blocker	Anticonvulsant	Gabapentin	300mg tid	po	2-3gm/d
AMPA-Na Channel Blocker	Anesthetic	Lidocaine Hcl	5-10%	Lipoderm	tid up to q2h prn
AMPA-Na Channel Blocker	Anesthetic	Mexilitine Hcl	2%	Lipoderm	tid up to q2h prn
Anti-inflammatory	Corticosteroid	Dex Sod Phos	2-40mg	Lipoderm	qd prn
Anti-inflammatory	Nsaids	Diclofenac	2-10%	Lipoderm	qid prn
Anti-inflammatory	Nsaids	Ibuprofen	20%	Lipoderm	qid prn
Anti-inflammatory	Nsaids	Ketoprofen	10%	Lipoderm	tid prn
Anti-inflammatory	Nsaids	Piroxicam	2%	Lipoderm	qd prn
Calcium Channel Blocker	Hypotensive	Nifedipine	2-16%	Lipoderm	tid max 160mg/d
Gaba Agonist	Muscle Relaxant	Baclofen	2%	Lipoderm	tid up to q2h prn
Gaba Agonist	Benzodiazepine	Clonazepam	0.5-1mg	S.L.	qhs
Increase Blood Flow	Hemorheologic	Pentoxifylline	2-5%	Lipoderm	tid prn
Mu Agonist	Antidiarrheal	Loperamide	5-7%	Lipoderm	t-qid prn
Mu Agonist	Opiate	Morphine Sulphate	10-30mg	Lipoderm	t-qid prn
Mu Agonist	Opiate	Oxycodone	10-30mg	Lipoderm	t-qid prn
NMDA-Ca Channel Blocker	Antitussive	Dextromethorphan	30-45mg SR	po	bid <400mg/d
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	50mg max 450/d	Lipoderm	tid may titrate
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	10-50mg/ml	nasal	1-2 sprays prn
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	10%	Lipoderm	t-qid
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	10-30mg	po or pr	tid up to q2h prn
NMDA-Ca Channel Blocker	Muscle Relaxant	Mg Cl	10-15%	Lipoderm	tid
Substance P	Analgesic	Capsciacin	0.025%-2%	Lipoderm	t-qid prn
Supplements	Antiarthritic	Glucosamine	10%	Lipoderm	q-tid
Supplements	Antiarthritic	Glucosamine	500-750mg	po	q-tid
Supplements	Antioxidant	Lipoic Acid	100-300mg	po	tid
Supplements	Analgesic	Melatonin	1-10mg	po	qd
Supplements	Analgesic	Methylcobolamin	1000mcg	S.L.	q-tid
Supplements	Muscle Relaxant	Mg Glycinate	500mg	po	qd-tid
Supplements	Muscle Relaxant	Mg Glycinate	500mg	po	q-tid
Supplements	Anti-inflammatory	Omega-3	360mgEPA:240mgD HA	po	qd
Supplements	Analgesic	Riboflavin	200-400mg	po	qd
Supplements	Analgesic Synergy	Vitamin C	2.5-6gm	po	qd
Tricyclic Antidepressant	Antidepressant	Amitriptyline	2-10%	Lipoderm	tid up to q2h prn
Tricyclic Antidepressant	Antidepressant	Desipramine	2-10%	Lipoderm	tid up to q2h prn
Tricyclic Antidepressant	Antidepressant	Imipramine	2-10%	Lipoderm	qd-qid

Notes: Ketamine 5%, Gabapentin 10%, Clonidine 0.2%, Baclofen 2% is standard starting regimen. (Formula # 7919)

References:

1. Jones M. Chronic Neuropathic Pain: Pharmacological Interventions in the New Millenium - A Theory of Efficacy. *International Journal of Pharmaceutical Compounding*. Jan/Feb 2000; 4(1): 6-15.
2. Jones M. Clinical Nuggets and Pearls: Chronic Neuropathic Pain and Opioid Tolerance. *International Journal of Pharmaceutical Compounding*. Jan/Feb 2002; 6(1): 4-6.

Algorithm for Chronic Pain (by Medication)

Proposed Mode of Action	Therapeutic Category	Medication	Dose	Route	Regimen
Tricyclic Antidepressant	Antidepressant	Amitriptyline	2-10%	Lipoderm	tid up to q2h prn
Gaba Agonist	Muscle Relaxant	Baclofen	2%	Lipoderm	tid up to q2h prn
Substance P	Analgesic	Capsciacin	0.025%-2%	Lipoderm	t-qid prn
AMPA-Na Channel Blocker	Anticonvulsant	Carbamazepine	10%	Lipoderm	tid up to q2h prn
Gaba Agonist	Benzodiazepine	Clonazepam	0.5-1mg	S.L.	qhs
Alpha II-Agonist	Hypotensive	Clonidine	0.2%	Lipoderm	tid up to q2h prn
Tricyclic Antidepressant	Antidepressant	Desipramine	2-10%	Lipoderm	tid up to q2h prn
Anti-inflammatory	Corticosteroid	Dex Sod Phos	2-40mg	Lipoderm	qd prn
NMDA-Ca Channel Blocker	Antitussive	Dextromethorphan	30-45mg SR	po	bid <400mg/d
Anti-inflammatory	Nsaids	Diclofenac	2-10%	Lipoderm	qid prn
AMPA-Na Channel Blocker	Anticonvulsant	Gabapentin	6-10%	Lipoderm	tid up to q2h prn
AMPA-Na Channel Blocker	Anticonvulsant	Gabapentin	100-200	po	b-tid max 800mg/d
AMPA-Na Channel Blocker	Anticonvulsant	Gabapentin	300mg tid	po	2-3gm/d
Supplements	Antiarthritic	Glucosamine	10%	Lipoderm	q-tid
Supplements	Antiarthritic	Glucosamine	500-750mg	po	q-tid
Anti-inflammatory	Nsaids	Ibuprofen	20%	Lipoderm	qid prn
Tricyclic Antidepressant	Antidepressant	Imipramine	2-10%	Lipoderm	qd-qid
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	50mg max 450/d	Lipoderm	tid may titrate
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	10-50mg/ml	nasal	1-2 sprays prn
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	10%	Lipoderm	t-qid
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	10-30mg	po or pr	tid up to q2h prn
Anti-inflammatory	Nsaids	Ketoprofen	10%	Lipoderm	tid prn
AMPA-Na Channel Blocker	Anesthetic	Lidocaine Hcl	5-10%	Lipoderm	tid up to q2h prn
Supplements	Antioxidant	Lipoic Acid	100-300mg	po	tid
Mu Agonist	Antidiarrheal	Loperamide	5-7%	Lipoderm	t-qid prn
Supplements	Analgesic	Melatonin	1-10mg	po	qd
Supplements	Analgesic	Methylcobolamin	1000mcg	S.L.	q-tid
AMPA-Na Channel Blocker	Anesthetic	Mexilitine Hcl	2%	Lipoderm	tid up to q2h prn
NMDA-Ca Channel Blocker	Muscle Relaxant	Mg Cl	10-15%	Lipoderm	tid
Supplements	Muscle Relaxant	Mg Glycinate	500mg	po	qd-tid
Supplements	Muscle Relaxant	Mg Glycinate	500mg	po	q-tid
Mu Agonist	Opiate	Morphine Sulphate	10-30mg	Lipoderm	t-qid prn
Calcium Channel Blocker	Hypotensive	Nifedipine	2-16%	Lipoderm	tid max 160mg/d
Supplements	Anti-inflammatory	Omega-3	360mgEPA:240mgD HA	po	qd
Mu Agonist	Opiate	Oxycodone	10-30mg	Lipoderm	t-qid prn
Increase Blood Flow	Hemorheologic	Pentoxifylline	2-5%	Lipoderm	tid prn
Alpha II-Agonist	Hypotensive	Phenoxybenzamine	1.5-5mg/d	Lipoderm	qd
Anti-inflammatory	Nsaids	Piroxicam	2%	Lipoderm	qd prn
Supplements	Analgesic	Riboflavin	200-400mg	po	qd
Supplements	Analgesic Synergy	Vitamin C	2.5-6gm	po	qd

Notes: Ketamine 5%, Gabapentin 10%, Clonidine 0.2%, Baclofen 2% is standard starting regimen. (Formula # 7919)

References:

1. Jones M. Chronic Neuropathic Pain: Pharmacological Interventions in the New Millenium - A Theory of Efficacy. *International Journal of Pharmaceutical Compounding*. Jan/Feb 2000; 4(1): 6-15.
2. Jones M. Clinical Nuggets and Pearls: Chronic Neuropathic Pain and Opioid Tolerance. *International Journal of Pharmaceutical Compounding*. Jan/Feb 2002; 6(1): 4-6.

Algorithm for Chronic Pain (by Therapeutic Category)

Proposed Mode of Action	Therapeutic Category	Medication	Dose	Route	Regimen
Substance P	Analgesic	Capsciacin	0.025%-2%	Lipoderm	t-qid prn
Supplements	Analgesic	Melatonin	1-10mg	po	qd
Supplements	Analgesic	Methylcobolamin	1000mcg	S.L.	q-tid
Supplements	Analgesic	Riboflavin	200-400mg	po	qd
Supplements	Analgesic Synergy	Vitamin C	2.5-6gm	po	qd
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	50mg max 450/d	Lipoderm	tid may titrate
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	10-50mg/ml	nasal	1-2 sprays prn
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	10-30mg	po or pr	tid up to q2h prn
NMDA-Ca Channel Blocker	Anesthetic	Ketamine	10%	Lipoderm	t-qid
AMPA-Na Channel Blocker	Anesthetic	Lidocaine Hcl	5-10%	Lipoderm	tid up to q2h prn
AMPA-Na Channel Blocker	Anesthetic	Mexilitine Hcl	2%	Lipoderm	tid up to q2h prn
Supplements	Antiarthritic	Glucosamine	10%	Lipoderm	q-tid
Supplements	Antiarthritic	Glucosamine	500-750mg	po	q-tid
AMPA-Na Channel Blocker	Anticonvulsant	Carbamazepine	10%	Lipoderm	tid up to q2h prn
AMPA-Na Channel Blocker	Anticonvulsant	Gabapentin	6-10%	Lipoderm	tid up to q2h prn
AMPA-Na Channel Blocker	Anticonvulsant	Gabapentin	100-200	po	b-tid max 800mg/d
AMPA-Na Channel Blocker	Anticonvulsant	Gabapentin	300mg tid	po	2-3gm/d
Tricyclic Antidepressant	Antidepressant	Amitriptyline	2-10%	Lipoderm	tid up to q2h prn
Tricyclic Antidepressant	Antidepressant	Desipramine	2-10%	Lipoderm	tid up to q2h prn
Tricyclic Antidepressant	Antidepressant	Imipramine	2-10%	Lipoderm	qd-qid
Mu Agonist	Antidiarrheal	Loperamide	5-7%	Lipoderm	t-qid prn
Supplements	Anti-inflammatory	Omega-3	360mgEPA:240mgD HA	po	qd
NMDA-Ca Channel Blocker	Antitussive	Dextromethorphan	30-45mg SR	po	bid <400mg/d
Supplements	Antioxidant	Lipoic Acid	100-300mg	po	tid
Gaba Agonist	Benzodiazepine	Clonazepam	0.5-1mg	S.L.	qhs
Anti-inflammatory	Corticosteroid	Dex Sod Phos	2-40mg	Lipoderm	qd prn
Increase Blood Flow	Hemorheologic	Pentoxifylline	2-5%	Lipoderm	tid prn
Alpha II-Agonist	Hypotensive	Clonidine	0.2%	Lipoderm	tid up to q2h prn
Calcium Channel Blocker	Hypotensive	Nifedipine	2-16%	Lipoderm	tid max 160mg/d
Alpha II-Agonist	Hypotensive	Phenoxybenzamine	1.5-5mg/d	Lipoderm	qd
Gaba Agonist	Muscle Relaxant	Baclofen	2%	Lipoderm	tid up to q2h prn
NMDA-Ca Channel Blocker	Muscle Relaxant	Mg Cl	10-15%	Lipoderm	tid
Supplements	Muscle Relaxant	Mg Glycinate	500mg	po	qd-tid
Supplements	Muscle Relaxant	Mg Glycinate	500mg	po	q-tid
Anti-inflammatory	Nsaids	Diclofenac	2-10%	Lipoderm	qid prn
Anti-inflammatory	Nsaids	Ibuprofen	20%	Lipoderm	qid prn
Anti-inflammatory	Nsaids	Ketoprofen	10%	Lipoderm	tid prn
Anti-inflammatory	Nsaids	Piroxicam	2%	Lipoderm	qd prn
Mu Agonist	Opiate	Morphine Sulphate	10-30mg	Lipoderm	t-qid prn
Mu Agonist	Opiate	Oxycodone	10-30mg	Lipoderm	t-qid prn

Notes: Ketamine 5%, Gabapentin 10%, Clonidine 0.2%, Baclofen 2% is standard starting regimen. (Formula # 7919)

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Algorithm for Chronic Neuropathy

September 1999

Modified March 2000

Mode of Action and members of the class (not exhaustive)

1) NMDA-Ca Channel Blocker

Ketamine 5-10% in PLO, 10-30mg PO or PR tid regularly + up to q2h prn

Nasal soln 10-50mg/ml-1-2 sprays prn

Orphenadrine 10% in PLO or 100mg PO tid

Dextromethorphan 10% in PLO or <400mg/day PO

Amantadine 200mg/250-500cc IV over 3 hours once (repeat x1 prn).

PLO 10 to 20% tid

2) AMPA-Na Channel Blocker

Anticonvulsant - * Gabapentin 6-10% in PLO tid + up to q2h prn

or up to 2-3Gm/day PO

*Probably blocks glutamate at the NMDA also

Carbamazepine 10% in PLO tid + up to q2h prn

or 100mg-200mg PO bid/tid (Max 800mg/day)

Antiarrhythmic - Lidocaine 5-10% in PLO tid + up to q2h prn

Mexilitine 2% in PLO tid + up to q2h prn

3) Alpha II-agonist

Clonidine 0.2% in PLO tid + up to q2h prn

4) Substance P blocker

MU agonists (MS, Hydrocodone, Oxycodone, etc) (low dose) PO or PLO

Mu Agonist also: Loperamide 7% and up PLO

5) GABA_b Agonist

Baclofen 2% PLO tid + up to q2h prn

Non specific GABA agonist - Klonopin 0.5mg-1mg SubL. qhs

6) Tricyclic Antidepressant

Desipramine 2-10% in PLO tid + up to q2h prn

or 25-100mg PO qHS

Amitriptyline 2-10% in PLO tid + up to q2h prn

or 25-150mg PO qHS

Magnesium: Intracellular Resident NMDA Ca Channel Blocker

For Fibromyalgia - Mg/Malic Acid 25/250 mg PO tid
Or 500mg PLO tid

For Diabetic Neuropathy - Lipoic Acid 100mg-300mg PO tid
Bioflavonoids/citrus 500 to 2000 mg PO tid
Gotu Kola 30 to 60 mg PO tid
Nifedipine 2 to 5% PLO tid
Or up to 16% for small areas, i.e., toes

Alpha-antagonist (I & II)

Phentolamine 80mg over 24 hours slow IV one time only!
(for organic neuropathy, i.e., pancreatic cancer).

Notes:

1. Ketamine 10%, Gabapentin 6%, Clonidine 0.2% is standard starting regimen.
2. Add Baclofen 2%, Amitriptyline 2%, Nifedipine, Opioid, Mg as needed. (I.e., use Baclofen specifically in FM patients but also in others and use Amitriptyline in CRPS Type I patients but also in others.)
3. In allodynic Post Herpetic Neuralgia use Ketamine 10% + Bupivacaine 0.5% in a Normal Saline spray to the area, wait 5 to 10 minutes and apply the PLO gel chosen. This spray also has been reported to ease burn pain.
4. Evidence exists for presence of NMDA receptors in the dermal-epidermal junction. AMPA receptors always lie close to NMDA receptors.
5. Evidence exists for the presence of Gabapentin receptors in the periphery.
6. Evidence exists for the presence of adrenergic receptors in the periphery.
7. Evidence exists for the presence of opioid receptors in the periphery.

References:

1. Jones M. Chronic Neuropathic Pain: Pharmacological Interventions in the New Millennium – A Theory of Efficacy. *International Journal of Pharmaceutical Compounding*. Jan/Feb 2000; 4(1): 6-15.
2. Jones M. Clinical Nuggets and Pearls: Chronic Neuropathic Pain and Opioid Tolerance. *International Journal of Pharmaceutical Compounding*. Jan/Feb 2002; 6(1): 4-6.