# CHRONIC PAIN MANAGEMENT

Family & Community Medicine
UNIVERSITY OF TORONTO

Resident Author: Natasha Gulavita, MD
Faculty Advisor: Kevin Workentin, MD, CCFP
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## Overview

Approximately 20% of individuals worldwide have some degree of chronic pain.[1] Many primary care patients report chronic pain, most commonly musculoskeletal type pain.[2] It is associated with physical and psychological impairment, distress, co-morbid depression and increased health care use and costs.[3]

## Definitions/Classifications

- Chronic non-cancer pain: Pain lasting > 3 months or beyond the expected period of healing of tissue pathology[4]
- Neuropathic pain: Pain caused by a lesion or dysfunction in the nervous system[5] (ie. amputation, disc hernation, cancer, chemotherapy, diabetes, stroke, neurodegenerative diseases, herpes zoster, trigeminal neuralgia)
- Nociceptive pain: Pain due to activation of nociceptors, caused by actual or threatened damage to non-neural tissue[5]
- Opioid-induced hyperalgesia (OIH): Patient becomes more sensitive to certain painful stimuli due to nociceptive sensitization caused by opioids[6]
- Chronic pain disorders are often classified by anatomy (location), cause (nociceptive, neuropathic), neurophysiology, or body system involvement based on prevalence in clinical practice, most are musculoskeletal (ie. osteoarthritis), neuropathic (ie. postherpetic neuralgia and diabetic neuropathy), chronic wide spread (ie. fibromyalgia), and non-specific low back pain → Management options overlap substantially[3]

## Diagnostic Approach

- Assessing pain: Location, radiation, quality, temporal profile, severity, associated symptoms, impact, psychological factors[7]
- Appropriate investigations to find the source (history, physical exam, blood work, imaging and psychiatric evaluation as indicated)[7]

## Management

- Present treatment options are of limited efficacy → treatment approach needs to focus on realistic expectations for pain relief and improved functioning[3]
- Pharmacological management should follow a stepwise approach: WHO 3-Step Ladder (modified)[8]

| 1 | 2 | 3 |
|---|---|---|
| Non-opioid (ASA/ acetaminophen/ NSAIDs) ±Adjuvants | Mild-moderate pain opioid (codeine) ±Non-opioid (ASA/ acetaminophen/ ibuprofen) ±Adjuvants | Moderate to severe pain opioid (oral morphine) ±Non-opioid ±Adjuvants |

- Choice of initial therapy should be guided by type of pain (see below chart)
- Before using an opioid, consider:[9, 10, 6, 11, 14]
  - o Risk of misuse [Opioid Risk Tool: http://nationalpaincentre.mcmaster.ca/opioid/cgop_b_app_b02.html]
  - o Broad spectrum urine toxin screening can be used to assess baseline risk for addiction, as well as ongoing monitoring of compliance with prescribed opioids
  - o Opioid efficacy for diagnosis
  - o Patient contract may be useful for patients not well known or at a higher risk for misuse [http://nationalpaincentre.mcmaster.ca/opioid/cgop_b_app_b05.html]
  - o Tools to assess response and for documentation: Brief Pain Inventory [http://nationalpaincentre.mcmaster.ca/opioid/cgop_b_app_b09.html] and "The 6 A's" (Analgesia, Activities of daily living, Adverse effects, Ambiguous drug-taking behaviour, Affect, Accurate medication record)
  - o When pain is increasing despite increasing opioid dose, consider OIH (especially if diffuse, less defined pain, decreased pain threshold and tolerability) and scale back the dose, rotate opioids, or use NMDA receptor antagonists (ex. Methadone)
  - o Consider the "watchful dose" of morphine or equivalent >200mg/day; if there is a need to exceed this dose, need to reassess the pain to ensure that opioids are the appropriate treatment
  - o Initiation should be with immediate release (IR) preparations and then switched to controlled release (CR) preparations once stable
  - o Adequate breakthrough pain medication should be provided for patients on CR opioids using the corresponding IR formulation, which is usually 10% of the total daily dose
- Consider multidisciplinary pain programs if accessible, for refractory pain and pain-related disability[9]
- Non-pharmacological therapies include[12]:
  - o Physical interventions (physiotherapy, exercise, acupuncture, chiropractic manipulation, massage)
  - o Psychoeducational interventions (CBT, biofeedback, psychotherapy, family therapy)
  - o Electric neuromodulation (TENS, spinal cord stimulation)
  - o Interventional approaches (percutaneous glucocorticoid/ local anesthetic injections, neural ablation, epidural steroid injections)

| Drug | Evidence/efficacy | Side effects/risks | Dosing Considerations |
|---|---|---|---|
| Acetaminophen[12] | - Not anti-inflammatory<br>- Somewhat superior to placebo for improving OA pain | - Hepatotoxic (even at therapeutic doses)<br>- Higher risk in chronic alcoholics | - Recent considerations to reduce the maximum dose to 3250mg/day (in elderly and chronic EtOH use) |
| NSAIDs[12] | - Indicated for mild, moderate and severe pain<br>- Synergistic, dose-sparing effect when added to opioids | - Avoid in the elderly (consider topicals)<br>- GI gastropathy, nephrotoxicity and cardiovascular risks<br>- Avoid in renal dysfunction<br>- Monitor BP and signs of heart failure (ie. Edema) | - Cardiovascular risk is a concern with all NSAIDS and Cox-2, select patients carefully and use lowest effective dose |
| Opioids[9, 11] | - More effective than placebo at improving pain, and better at improving pain than function<br>- Can be effective for neuropathic pain[13]<br>-Tramadol is effective for fibromyalgia for both pain and function | - Nausea, constipation (use laxatives to avoid opioid constipation), sedation, pruritis, hallucination, respiratory depression, death<br>- OIH<br>- Aberrant drug-taking behaviours<br>- Accidental overdose and mortality<br>- Diversion/trafficking | **Initiation in opioid-naïve adult patients:**<br>- Percocet (oxycodone 5mg/acetaminophen 325mg) po q4h prn<br>- Codeine 15-30mg po q4h prn<br>- Tramacet (37.5/325mg) (tramadol/acetaminophen) 1 tab po q4-6h prn (max 8 tabs/day – due to acetaminophen component); also short acting tramadol available (Ultram)<br>- IR morphine 5-10mg po q4h prn<br>- IR hydromorphone 1-2mg po q4-6h prn<br>**Starting doses in chronic users:**<br>- CR codeine 50mg po q12h<br>- CR morphine 10-30mg po q12h<br>- CR hydromorphone 3mg po q12h<br>- CR oxycodone (OxyNeo) 10mg q12h<br>- Transdermal fentanyl (25ug/hr approx. 90mg oral morphine) → not for opioid naïve or acute pain<br>**Consider new opioids, such as:**<br>- Tapentadol (Nucynta CR/IR)<br>- Long acting tramadols (Zytram, Ralivia, Tridural)<br>- Buprenorphine (BuTrans patch) |
| Tricyclic Antidepressants[12] (ie. amitriptyline, nortriptyline) | -Effective for neuropathic pain and relieving the depressive symptoms associated with chronic pain | -Sedation, dry mouth, constipation, confusion, urinary retention, prolonged QT, caution in elderly (nortriptyline preferred) | - Nortriptyline 10mg po qhs (max. 150mg/d)<br>- Amitriptyline 25mg po qhs (max. 300mg/day)<br>- Titrate up q1-2 weeks to effect or side effect |
| SNRI (ie. venlafaxine, desvenlafaxine, duloxetine)[12] | - Some benefit for neuropathic pain<br>- Duloxetine is effective for fibromyalgia and chronic low back pain<br>- Venlafaxine effective for painful diabetic neuropathy | -Headache, GI upset, insomnia, drowsiness, constipation, fatigue, dizziness | - Duloxetine 30-60mg/d (max -120mg po daily); titrate weekly |
| Anticonvulsants[12] (ie. gabapentin, pregabalin, carbamazepine) | - Some benefit for neuropathic pain, diabetic neuropathy<br>- Carbamazepine first-line therapy for trigeminal neuralgia<br>- Pregabalin indicated for fibromyalgia | -Sedation, dizziness (blood dyscrasias and liver toxicity with carbamazepine) | - Gabapentin should be initiated at low dose (ie. 100mg po tid) and titrated to pain relief and side effects, or 3600mg/day (divided tid)<br>- Pregabalin 75mg po bid (max. 600mg daily) |
| Muscle relaxants[12] | - For painful muscle spasms that accompany pain conditions | - CNS depression, dizziness, fatigue, hypotension | - Cyclobenzaprine 5mg po tid prn (max. 10mg po tid)<br>- Baclofen 5mg po tid (max. 80mg/day)<br>- For short term use only (< 2 weeks) |
| Topical agents[12] (Ie. lidocaine, capsaicin, diclofenac) | - 5% lidocaine (Note patch not avail in Canada) effective for postherpetic neuralgia and allodynia<br>- Capsaicin products have moderate to poor efficacy for neuropathic or MSK pain<br>- Topical diclofenac effective for knee OA | -Burning, stinging or erythema at site (capsaicin) | - 5% lidocaine cream/ointment<br>- Capsaicin 0.025% cream (Zostrix), capsaicin 0.075% cream (Zuacta)<br>- Diclofenac 1.5% (Pennsaid), diclofenac 1.16% (Voltaren Emulgel) |

## Bottom Line

Chronic pain is a common challenge in primary care practices. Care is needed in identifying the etiology of the pain, as evidence may guide towards specific therapies. Patient characteristics, including risk of opioid misuse, concurrent liver or kidney disease, and age should also guide therapeutic choices.

References can be found online at http://www.dfcm.utoronto.ca/programs/postgraduateprograme/One_Pager_Project_References.htm