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INSTRUCTIONS

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Pain therapy: the role of the pharmacy technician

by Laura Murphy, PharmD, ACPR, BScPhm, RPh

Learning objectives

Upon completion of this lesson, the pharmacy technician will be able to do the following:

1. Describe the prevalence and causes of chronic pain.
2. Distinguish between nociceptive and neuropathic pain.
3. Outline indications and availability of prescription and nonprescription medications to manage chronic pain.
4. Identify guidelines for use of medications for chronic pain, including the revised Canadian Pain Society consensus statement on the pharmacologic management of chronic neuropathic pain and the Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain.
5. Understand the role of the pharmacy technician in the management of chronic pain, in light of pharmacists' expanded scope.

Introduction

Chronic pain affects millions of Canadians, and has significant impact on their quality of life.[1] The Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain defines chronic pain as pain that persists for more than six months.[1] Chronic pain can result from many different

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conditions: osteoarthritis, rheumatoid arthritis, low back pain, headache, repetitive strain, diabetic neuropathy, postherpetic neuralgia, peripheral neuropathy, phantom limb pain, neck pain, spinal cord injury, pelvic pain, irritable bowel syndrome, non-cardiac chest pain, whiplash, temporomandibular joint dysfunction and fibromyalgia.[1] As the population ages, chronic pain will continue to be a growing problem.

Pain is usually classified as nociceptive or neuropathic, or a combination of these two types. Nociceptive, or sensory pain, is part of a normal, protective system that arises as a warning sign of damage to the body.[1,2] Nociceptive pain from muscle, joints, ligaments and bone is generally localized, and sharp or aching, whereas pain from organs is not localized, and patients describe squeezing, pressing, deep or dull aches.[1,2] Common causes of nociceptive pain include surgery, sports or exercise injury, arthritis, and cancer.[1] Neuropathic pain is caused by damage to the nervous system.[1-3] This damage may be the result of shingles, diabetes, crush injuries or amputations, chronic alcohol abuse, multiple sclerosis, chemotherapy or HIV.[1] Neuropathic pain is characterized by symptoms of burning, tingling, electrical shocks, shooting, numbness and weakness.[3] Patients may describe changes in sensation where the neuropathic pain occurs, including numbness, tingling, pain from things that are normally not painful (e.g., light touch, cotton swab) and a heightened pain response to something only mildly painful (e.g., a pin prick).[3]

Goals for the management of chronic pain should be identified by patients and their healthcare providers before initiation of therapy.[1] Goals should be set around function (e.g., household activities, self-care, walking, exercise), and expectations should be clear regarding the extent that pain reduction medications or therapy will reduce pain.[1] Pain scales may be helpful to monitor this reduction.[1] One pain scale is the Numerical Rating Scale (NRS), with which patients are asked to rate their pain on a scale of 0–10.[1] A rating of 0 represents no pain, and a rating of 10 is the worst pain the patient can imagine. Optimal pain management includes pharmacologic and nonpharmacologic approaches. This lesson will focus on pharmacologic management of chronic pain.

Pharmacologic management of chronic pain

General expectations for pharmacotherapy in chronic pain are to reduce pain on the NRS by two points or approximately 30%.[1] Though the term "painkillers" is often used as a descriptor for medications that manage pain, this offers an unrealistic expectation in chronic pain. Available therapeutic options produce only modest improvements because of the complexity of chronic pain and the involvement of physiological, emotional, cognitive, social and environmental factors.[2] Medication options for the management of chronic pain include traditional analgesics such as acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs) and opioids, as well as adjuvant medications with indications other than pain and different mechanisms of action such as antidepressants, anticonvulsants and cannabinoids.[2,3] Topical therapies are also indicated if pain is localized.[2,3] Optimal pain management often requires a combination of drugs with different mechanisms of action and/or duration of action.[1,3]

Medications available over the counter (OTC)

For chronic pain, acetaminophen and NSAIDs (e.g., ibuprofen, naproxen) may be helpful, particularly for arthritis and musculoskeletal pain.[2,4] Although these medications are available OTC, caution and careful education of patients are required, as high doses and long-term use of either can result in significant adverse effects.[4,5] The maximum recommended acetaminophen dose from all sources is 4 grams daily (including combination products for cold and flu, as well as acetaminophen–opioid combination products); however, the recommended maximum is only 3 grams daily for chronic use or when used by elderly patients.[5] Acute or chronic overdosing of acetaminophen can lead to liver damage.[5] NSAIDs increase risk of kidney damage, heart attack and heart failure as well as bleeding. People who are at higher risk of these adverse effects are the elderly; those who take anticoagulants, antiplatelet agents, antidepressants (selective serotonin reuptake inhibitors) and consume more than 8 alcoholic drinks per week; or people with liver or kidney disease, active bleeding or history of a bleeding disorder.[4] People may not realize they are taking multiple NSAIDs when purchasing products OTC, or they may be unaware that NSAID risks are a class effect (i.e., they may have been told by their doctor to avoid ibuprofen, without realizing that naproxen is also risky). Always ask patients what other medications they are taking before making a recommendation.

Medications available behind the counter

Combination analgesics containing 8 mg of codeine continue to be available behind the counter (i.e., as Schedule II drugs).[6,7] These include acetaminophen 300 mg (or 325 mg)/codeine 8 mg/caffeine 15 mg, and acetylsalicylic acid (ASA) 375 mg/codeine 8 mg/caffeine 15 mg.[6,7] People may choose to self-manage their pain using these products; they are, however, not indicated for moderate–severe pain.[1] Chronic use could have risks related to acetaminophen (e.g., toxicity), caffeine (e.g., sleep disturbance, tachycardia) or codeine (e.g., stomach upset, constipation, opioid misuse, risk of falls in elderly patients).[5,8] These products are not usually prescribed or dispensed in any structured way and sales are generally not documented; therefore, patients may not receive the monitoring and education required to help mitigate the risks.[9,10]

Prescription medications

Opioid medications

Opioids available by prescription include codeine, tramadol, tapentadol, morphine, oxycodone, hydromorphone, fentanyl, buprenorphine and methadone.[1] Table 1 lists available brand names of oral and transdermal opioid products available in Canada.[1,8] Codeine and oxycodone are available by prescription in combination with acetaminophen or caffeine.[1,7,8] Codeine, tramadol, morphine, oxycodone and hydromorphone are all available as oral extended-release and immediate-release formulations.[8] Fentanyl and buprenorphine are available as extended-release transdermal patches; fentanyl is applied every three days, and buprenorphine every seven days.[8] Buprenorphine is also available as a combination oral product with naloxone, but this product is indicated only for substitution treatment in opioid dependence, and use for pain is off-label.[8] Methadone is indicated for both pain and opioid dependence.[8] In order to use methadone in the management of pain, prescribers must have a special exemption through Health Canada.[8]

Adjuvant medications

Adjuvant treatment options include tricyclic antidepressants (TCAs), serotonin-norepinephrine reuptake inhibitors (SNRIs), cannabinoids and topical lidocaine, among others.[2,3] In the stepwise management of neuropathic pain, many of these are considered before opioids.[3] These medications may offer people with chronic pain benefits beyond pain reduction, such as improvements in sleep, anxiety or mood.[3] Unlike opioids, people do not experience the benefit of these medications with the first dose. They require a longer titration period to achieve an effective dose, then several weeks of monitoring at that dose to see the full effect.[3] This time delay to attain pain relief can be very frustrating for people experiencing pain. Common issues related to these medications are failed drug trials, when the patient does not try the drug for long enough to evaluate its effects, and failure to achieve optimal doses.[3] Tolerability with these medications also can be problematic, especially if intolerable side effects are experienced before patients perceive any benefits.[3]

TABLE 1 - Oral and transdermal opioid products available in Canada[1,8,13]

Drug	Brand names	
	Immediate-release products	Extended-release products
Buprenorphine transdermal		BuTrans
Codeine	Codeine, generics	Codeine Contin
Codeine/acetaminophen/ caffeine	Tylenol (No. 1, 2, 3), Atasol (No. 8, 15, 30), generics	
Fentanyl (transdermal)		Duragesic, generics
Hydromorphone	Dilaudid, generics	Hydromorph Contin, Jurnista
Methadone		Metadol
Morphine	Statex, MS-IR, generics	M-Eslon, MS Contin, Kadian
Oxycodone	Oxy-IR, (generic)	OxyNeo
Oxycodone/ acetaminophen	Endocet, Percocet, Percocet-Demi	
Oxycodone/naloxone		Targin
Oxycodone /ASA	Endodan, Percodan, Percodan-Demi	
Pentazocine	Talwin	
Meperidine	Demerol	
Tramadol	Ultram	Durela, Ralivia, Tridural, Zytram XL
Tramadol/acetaminophen	Tramacet, generics	
Tapentadol	Nucynta IR	Nucynta CR, Nucynta ER

TABLE 2 - Side effects of opioid and adjuvant medications[1,3,8,14]

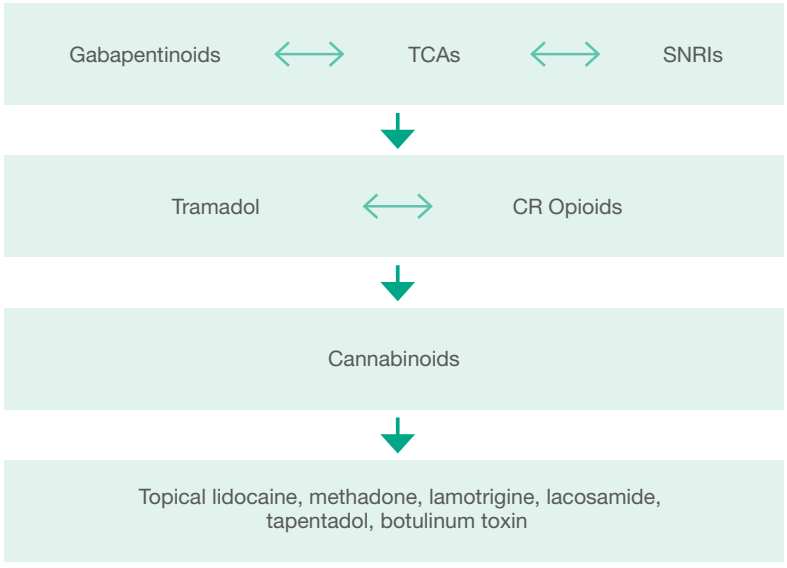
Drug class	Side effects
Opioids	Sedation, euphoria, constipation, nausea, itching Other (long-term): increased pain caused by the opioid, sleep apnea, lowered sex hormones
Gabapentinoids	Dizziness, sedation, peripheral swelling, blurred vision
Serotonin-norepinephrine reuptake inhibitors	Nausea, dizziness, sedation, hypertension
Tricyclic antidepressants	Sedation, confusion, orthostatic hypotension, blurred vision, dry mouth, constipation, urinary retention, weight gain, arrhythmia
Cannabinoids	Sedation, dizziness, dry mouth, nausea, euphoria

Common side effects of opioid and adjuvant medications are outlined in Table 2.

Clinical guidelines for use of medications for chronic pain

In 2010, the National Opioid Use Guideline Group published the Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain.[1] Its core concepts specify that patients have a right to treatment of their chronic pain, and that opioids may be effective and can be considered, but have limited indications for chronic noncancer pain conditions.[1] Opioids present risks and potential harms, including misuse, abuse, dependence and diversion.[1] The evidence-based guideline provides recommendations in five clusters: deciding to initiate therapy; conducting an opioid trial; monitoring long-term opioid

FIGURE 1 - Stepwise management of chronic neuropathic pain[11]



Source: Canadian Pain Society.
CR—controlled release, SNRI—serotonin–norepinephrine reuptake inhibitors, TCA—tricyclic antidepressants.

therapy; treating specific populations with long-term opioid therapy; and managing opioid misuse and addiction in chronic pain.[1]

Recommendations from the Guideline include a universal approach for structured opioid therapy to help minimize risk and optimize appropriate monitoring, which may include frequent dispensing intervals (e.g., weekly or daily fills).[1] With prescribed opioid therapy, there are significant risks if a patient is also taking benzodiazepines (e.g., lorazepam, clonazepam), other sedating prescription medications (e.g., zopiclone, baclofen) or sedating OTC products (e.g., dimenhydrinate, diphenhydramine).[1]

A revised consensus statement from the Canadian Pain Society on the management of chronic neuropathic pain was published in 2014.[3] It provides an updated, stepwise approach to pharmacologic management, and suggests that treatment should be individualized for each patient based on efficacy and side-effect profile, with consideration to drug accessibility and cost.[3] The statement acknowledges a lack of direct comparisons among analgesics and combinations of analgesics. Based on available evidence, suggested first-line treatments are gabapentinoids (gabapentin, pregabalin), TCAs (amitriptyline, nortriptyline) and SNRIs (venlafaxine, duloxetine).[3] Second-line treatments for moderate to severe pain are tramadol and controlled-release (CR) opioids.[3] Cannabinoids (e.g., nabilone) are recommended as a third-line treatment.[3] Fourth-line treatments include topical lidocaine, oral methadone, oral tapentadol, injectable botulinum toxin and oral non-gabapentinoid anticonvulsants with less evidence for efficacy (e.g., lamotrigine, lacosamide). Figure 1 outlines the stepwise approach to therapy for patients with chronic neuropathic pain.[11]

Role of the pharmacy technician

Pharmacy technicians have the skills and knowledge necessary to play a key role in ensuring safe dispensing of opioid and non-opioid therapy. As front-line professionals, they have opportunities for positive interactions with people who suffer from chronic pain. To avoid stigma, interactions with chronic pain patients must be free of any judgement, as patients have a right to participation in the treatment of their pain. Assumptions must also be avoided when speaking with patients. Many non-opioid therapies (e.g., pregabalin, TCAs) are not necessarily being used for their primary indication (e.g., anticonvulsant, antidepressant), and some of them are being used off-label (e.g., gabapentin) for pain treatment, so often the indication for medications should be clarified with the patient.

The expanded scope of practice for pharmacists increases opportunities for independent pharmacist management of non-opioid prescriptions. It also reinforces ongoing monitoring of patients' pain and responses to long-term opioid therapy. Pharmacy technicians can assist by gathering information including adherence (asking when last dose of medication was taken, how are they taking it throughout the day), efficacy (how well is it working for their pain), and safety (asking about side effects such as constipation, sedation, etc.). Many patients taking opioid medications also require a bowel regimen to prevent constipation.[12] Technicians can check with patients to find out if they are taking laxatives or stool softeners, and ensure they are drinking enough water or other non-alcohol, non-caffeinated fluids per day, recording the patients' responses for the pharmacist. When filling prescriptions, strong knowledge of available products and appropriate selection can prevent potential lethal medication errors, especially related to opioids and similar-sounding products (e.g., extended-release versus immediate-release medications).

When prescription-monitoring systems are in place, pharmacists and pharmacy technicians receive and interpret alerts about their patients' therapies and

SUMMARY OF KEY POINTS

- Chronic pain is defined as pain that persists for more than 6 months. Pain can be nociceptive, neuropathic or mixed.
- Goals for the management of chronic pain should be set around function (e.g. household activities, self-care, walking) as well as reduction in pain.
- Pharmacologic therapy options (opioids, adjuvant therapies) for chronic pain are expected to reduce pain by 30%. Optimal pain management often requires a combination of drugs with different mechanisms of action.
- Patients with chronic pain require ongoing assessment and monitoring to ensure safe and effective use of OTC, behind-the-counter, and prescription medications.
- As front-line pharmacy staff, pharmacy technicians are in an ideal position to support patients with chronic pain by gathering relevant information about their pain and medication experiences, as well as medication use patterns, and relaying these to the pharmacist.

prescription fills. If people come into the pharmacy for regular refills of their opioid or non-opioid prescriptions, there are excellent opportunities to encourage adherence through open and skillful communication. Patients who have just started therapy (especially adjunct medications for pain) may need encouragement around adherence, especially if they are not yet experiencing significant benefits.

When patients are self-selecting OTCs or requesting behind-the-counter analgesics, technicians should also gather relevant information related to indication, quantity and frequency of use, efficacy and side effects for pharmacists to review, especially if they regularly notice patients with chronic pain self-selecting OTC analgesics. Patients who are buying excessive amounts of analgesics (e.g. acetaminophen, NSAIDs) for headaches may be experiencing medication-overuse headaches, and require pharmacist intervention. Requests for behind-the-counter analgesics containing codeine also requires thorough assessment, as it may indicate that patients are experiencing untreated pain or are misusing opioids.

Pharmacy technicians can help support people with chronic pain by assisting them in safely managing medications. They can also support pharmacists by identifying key safety alerts and refill intervals and building trust with chronic pain patients through effective communication.

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QUESTIONS

Please select the best answer for each question and answer online at www.CanadianHealthcareNetwork.ca for instant results.

1. Chronic pain includes all of the following types of pain except:
a) Osteoarthritis b) Fibromyalgia
c) Diabetic neuropathy
d) Postoperative pain

2. Neuropathic pain is defined as:
a) Pain caused by damage to the nervous system
b) Pain as part of a normal protective system that arises as a warning sign
c) Pain as a result of ongoing injury to internal organs
d) Pain as a result of the chronic inflammatory process (e.g., osteoarthritis)

3. Pharmacologic alternatives produce only modest improvements in chronic pain. This is because:
a) Complex physiological, emotional, cognitive, social and environmental factors are involved
b) Patients with chronic pain cannot be allowed access to opioid medications owing to risks
c) Pharmacologic alternatives have not been tested for chronic pain
d) Only nonpharmacologic therapies should be considered

4. What is an expected effective response to a new opioid medication started for chronic pain?
a) Reduction in pain scores by two points on a scale from 0–10
b) Elimination of pain over 24 hours
c) "Taking the edge off" pain during the daytime
d) Reduction of pain by 80%

5. Which of the following therapies would NOT be appropriate for the management of chronic pain?
a) Opioids b) Antidepressants
c) Topical lidocaine d) Lorazepam

6. Which of the following therapies is NOT available as an extended-release oral formulation?
a) Fentanyl b) Oxycodone
c) Hydromorphone d) Codeine

7. Many combination products contain acetaminophen. Which of the following opioids is NOT an example of a brand name containing acetaminophen?
a) Percocet b) Tylenol no.3
c) Targin d) Tramacet

8. Which of the following opioid options is available as a patch formulation that should be changed once weekly?
a) Fentanyl b) Oxycodone
c) Morphine d) Buprenorphine

9. Which statement is TRUE about structured opioid therapy?
a) It is for patients who do not have the willpower to handle large quantities of opioid medications
b) It is part of universal precautions to mitigate risks associated with opioid use
c) It can be put in place to punish people who run out of opioids early
d) It should be used only for patients with a history of substance-use disorders

10. Why is there a maximum dosage for acetaminophen/caffeine/codeine combination products available behind the counter?

a) The acetaminophen component
b) The codeine component
c) The caffeine component
d) There is no maximum dosage recommended for behind-the-counter analgesic combination products

11. Based on the Canadian Pain Society consensus statement, for chronic neuropathic pain, which medications are NOT considered first-line options?
a) Cannabinoids
b) Selective serotonin-norepinephrine reuptake inhibitors (SNRIs)
c) Tricyclic antidepressants (TCAs)
d) Gabapentinoids

12. Which is a side effect of all of the first–, second– and third-line medications for chronic neuropathic pain?
a) Constipation b) Sedation
c) Dry mouth d) Hypertension

13. Which of the following statements is FALSE related to the pharmacy technician's role in ensuring safe dispensing of medications for chronic pain patients?
a) Technicians should express their skepticism when patients request early refills of their opioid medications
b) Technicians should have appropriate knowledge about available dosing formulations in order to fill the prescription correctly
c) Technicians should promote the therapeutic relationship with chronic pain patients through skillful communication
d) Technicians should flag pharmacists when patients report issues with tolerability or concerns about therapeutic or adverse effects

14. A patient presents to the dispensary with a request to buy Tylenol no. 1 tablets behind the counter. Which of the following scenarios is NOT appropriate?
a) The pharmacy technician asks him if he can answer a few questions to ensure he is using the product correctly and safely
b) The pharmacy technician recognizes the patient, as he is a regular customer who has bought the same product recently, and proceeds with the sale
c) The pharmacy technician recognizes the patient, as he is a regular customer who has bought the same product recently, and asks him about the indication—how many tablets does he need, how often he is using them, how well are they working—then tells him to wait to speak with the pharmacist
d) The pharmacy technician does not know the patient, and starts by asking him about allergies and other medications he might be taking

15. A patient comes to the pharmacy to pick up the remaining partial fill of her controlled-release oxycodone tablets. The pharmacy technician reviews the patient's profile and sees that she has been using this prescription for more than six months. What questions can the pharmacy technician ask to ensure her pain therapy is being monitored appropriately?
a) How well is this medication helping with your pain?
b) Are you experiencing any constipation?
c) What, if any, therapies are you using to manage your constipation?
d) When did you take your last dose of medication?
e) All of the above

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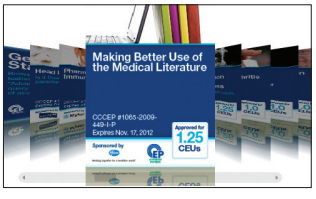

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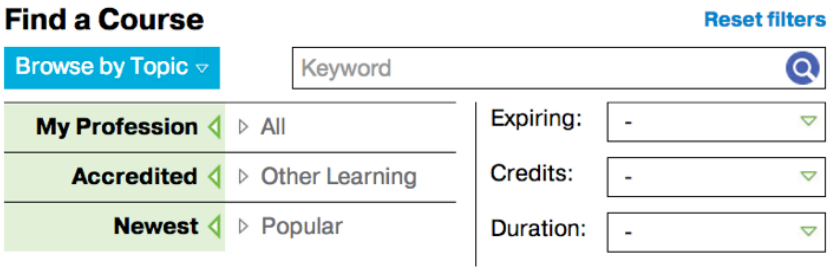

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