



## Questions to Ask Yourself

#### Diagnosis

- What do I think is wrong with my patient?
- Is this degree of pain consistent with my experience and understanding of this particular illness or injury?
- What is the normal progression of this type of pain?
  Treatment
  - Are opioids evidence-based for this type of pain?
  - What are non-opioid alternatives that I can use prior to or concurrently with opioids?

### Acute Pain is Normal

- Adaptive pain contributes to survival by protecting people from injury and/or promoting healing when injury has occurred
   Common in all patients
  - 75-80% of patients experience pain after surgery
  - Timing
     Up to 3 months post-operatively usually considered appropriate time for tissue healing
  - Examples nociceptive and inflammatory pain
  - Abnormal Progression
    - Maladaptive or chronic pain characterizes pain as disease, which represents pathologic functioning of the nervous system
    - Timing
    - 3-6 months post-operatively subacute pain
      Greater than 6 months chronic pain
    - Examples neuropathic and dysfunctional pain

Apfelbaum JL et al, 2003











## **Psychiatric Theory**

- San Francisco Spine Study reinforces theory that large component of chronic pain is due to abnormality in reward pathway
- Childhood abuse/neglect keeps child from normal limbic system development
- As adult, he/she seeks to receive reward pathway stimulation that was not received in childhood
- Pain promotes caregiver and physician attention and sympathy, i.e., reward pathway stimulation
- Without pain, these are absent, as before
- Abnormal and primal coping mechanism by the psyche is to perpetuate the pain
- Hence, the adult develops chronic and incurable pain

## Prior to Treatment

- 1. Review the medical history
  - Rule out ominous causes of pain (surgical complication, infection, re-injury, fracture dislocation, wound dehiscence)
  - Review records from previous providers
  - Screen for substance abuse (ORT screen)
  - Identify patients in active recovery (high risk of being "triggered" by even small amounts of opioids)
- Identify other prescribed medications or conditions that contraindicate co-prescribing opioids
  - Benzodiazepines synergistic effect (CDC Guidelines recommend against coprescribing due to elevated risk of sedation and overdose)
- Check the Texas Prescription Monitoring Program (<u>https://texas.pmpaware.net/login</u>).
- 4. Risk stratify
  - Consider report of pain, degree of functional limitation, other psychiatric risk factors
  - Determine if new or exacerbation of baseline chronic pain
     Confirm non-opioid adjuncts are optimized



## Addiction/Overdose Potential

- Risk factors for overdose
  - Patient non-adherence to regimen
  - Unrecognized mental health comorbidities - Co-administration of other CNS depressants/alcohol
  - Sleep apnea
  - Obesity (>30 BMI)
- · Overdose risk in perspective
  - 33,000 annual opioid deaths
  - Percentage opioid overdoses mirrors increased prescribing over the past 10 years
  - 75% of overdoses did not have valid prescription at the time of overdose
  - Heroin is the most common opioid for overdose
  - 79% test positive for alcohol/other drugs

Kenen et al, 2012, CDC 2017







## Principles of Pharmacotherapy in Acute Pain

- · Administer analgesics regularly (not PRN) if pain is present most of day
- Give weak oral opioids and all adjuncts prior to (or concurrently with) administering IV strong opioids
- · Become familiar with dose and time course of several strong opioids Peak 30-60 min: DOA 3-4 hours Morphine
  - Hydromorphone Peak 15-30 min; DOA 2-3 hours
  - Peak 3-5 min; DOA 0.5-1 hour
- Fentanyl Give the lowest effective dose to avoid side effects
- Follow patients closely, particularly when beginning or changing analgesic regimens
- Recognize and treat side effects
- · Avoid long-acting or sustained release formulations for opioid naïve patients
- DE-ESCALATE when acute pain has had adequate time for resolution

## Target Specific Types of Pain

- Nociceptive pain normal response to noxious stimuli (post-op, acute injury, acute illness)
- APAP
- NSAIDs - Opioids
- Inflammatory pain normal response to tissue injury or infection (post-op, cellulitis) NSAIDs Cold therapy
- Neuropathic pain abnormal maladaptation to nervous system when pain is prolonged (chronic back pain, sciatic nerve injury)
- Antineuropathics - Antidepressants
- Dysfunctional pain result of hightened nociceptive sensitivity without detectable stimulus (fibromyalgia, IBS, functional abdominal pain)
  - Antineuropathics
  - Antidepressants

## **Opioid Tolerant Patients**

Table 7. Guidelines for Effective Treatment of the **Opioid-Tolerant Patient** 

Recognize the opioid-tolerant patient Maintain baseline opioid therapy Upward compensation in perioperative opioid dosing Use of peripheral and central neural block Administration of nonopioid analgesics

- If not NPO postoperatively, start home regimen immediately
- If NPO postoperatively, start PCA with a basal rate to cover home regimen
- Basal rate should be the IV equivalent to approximately 1/3 to 1/2 of their daily PO dose; breakthrough demand dose should exceed the 24 hour equivalent to home PO dose to effectively cover postoperative pain in addition to chronic pain
- · Convert the PCA back to PO as soon as patient is taking PO dependably

Rathmell et al, 2006

## Create Preference Order Sets HYDROcodone-acetaminophen (NORCO 10-325) 10-325 mg per tablet 1 tablet. 1 tablet, Oral, Every 4 hours, First Dose Today at 1430 Max dose of acetaminophen is 4000 mg per day. d Accept X ⊆ancel Memoralize for the game day Medical and Control and Control and Control 1. Let Comp 2. Prol Let Comp 2. Prol Let Comp 4. Service To Control Prove 1. Nove Prove 1. Nove 4. Desires F. Hauset Prove 1. Nove 4. Desires F. Hauset Prove 1. Nove 4. Desires F. Hauset 1. Sectored The Sectored Sectored Sectored The Sectored Sectored Sectored The Sectored Sectored Sectored Sectored Sectored The Sectored Sectored Sectored Sectored Sectored Sectored The Sectored S Order Inst.: Reference Links: Dose: Admin. Inst: Admin. Inst: Max dose of acetaminophen is 4000 mg per day. 2 Comments (F6) Click to add lead (300 char max) Priority: Routine 🔎 Link Order S\$ Accept X Cancel

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	Max dose of acetaminophen is 4000 mg per day.	
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	HYDROcodone-acetaminophen (NORCO 10-325) 10-325 mg per tablet 1 tablet	
	<ol> <li>tablet, Ural, Every 4 hours HKN, Uther, Give 1st for moderate (pain 4-6) and with IV opioid to 10). Starting Today at 1400.</li> </ol>	or severe pain (7-
	Max dose of acetaminophen is 4000 mg per day.	

## **Effective Care Model**

- Encourage proactive intervention
- Promote wellness and health maintenance, rather than being reactive
- Smoking cessation persistent pro-inflammatory state
- Educate regarding modifiable chronic diseases
- Obesity-related pain in loadbearing joints
  - Discuss weight reduction as strategy for pain reduction
  - · Pain often directly proportional to load
  - Analogy Would you consider squatting \*\*\* pounds in the shape your knees/hips/back is in?
- Pre- or post-joint replacement surgery discuss maintenance of physical activity as strategy to limit joint immobility
- Diabetic peripheral neuropathy or diabetic poor wound healing discuss glucose management to reduce chronic pro-inflammatory state caused by elevated glucose
- Some damage is irreversible, but pain improved health may prevent further damage from occurring

## Introducing CBT to Patients

- Outline expectations in the initial consultation
- Explain that chronic pain is like any other chronic disease (ex: diabetes)
  - It will likely always be there to some degree
  - Lifestyle modification will help manage
  - Denying it will only make suffering worse
  - Taking ownership of pain will empower you to more effectively manage it
  - You are not to blame for your pain and it is normal to feel sad, angry, or anxious about the disruption the pain has caused in your life
- Define roles
  - You must play an active role in your own recovery
  - If you commit 30-60 minutes per day to purposeful pain appraisal, it will improve (not resolve, but improve)
  - We are in this together and I will do what I can to help you

## Purposeful Thinking

#### Explain to give insight

- Pain is not "all in your mind", but you can use your mind to improve your perception of pain
- Thoughts, attitudes, ideas, expectations, memories, beliefs, images: these are all related and cascade into others very rapidly
- Thoughts and feelings dictate behavior
- Teach new approach to cognitive processing
  - View thoughts as "guesses" to be tested against reality rather than fact
     Distinguish thoughts from feelings
  - Example thought reprocessing I can't move today (thought) and my life is hopeless (feeling)  $\rightarrow$  I can sit up on the side of the bed and stand for 15 seconds without assistance (thought). My limitations today are surmountable with hard work (thought overriding feeling). No one is guaranteed tomorrow, but I will do what I can to make the most of the part of life I can control (thought overriding feeling).
- Distinguish helpful thinking from positive thinking, which can be just as unhelpful as negative thinking; the goal is realistic thinking

\*David 2013

## **Purposeful Behavior**

- Mindful relaxation alternate tense/relax directed muscle groups
- Set plan for paced activity simple, realistic, achievable
  - Realistic starting point ightarrow build gradually
  - Start at baseline → escalate → return to baseline during flairs (do not discontinue activity
     Examples hobby activity, household activity/chores
- Set plan for graded exercise schedule specific times
- Same concept
- Examples
  - Extremely debilitated 10 bedside squats and 10 reps 2 lb weights push ups, rest, 2-3 minutes continuous walking
  - Demotivated but not debilitated 3 sets 8 reps squats and push ups, rest, 5-6
  - minutes of continuous walking → build up
- · Follow plan for activity regardless of whether you feel like it

\*David 2013

#### **Tips for Success**

- Pain diary
  - Describe starting point, ideal ending point, and acceptable or realistic ending point
  - Use as a roadmap for activity/exercise planning
  - Journal at least 3 times daily regarding pain
    - Location, quality, severity, radiation, modifying/relieving factors
      Include activity, environmental factors, and emotional response to pain
    - Include all medications taken and response
  - Behavioral experiments test unhelpful beliefs about risk of activity
- Sleep hygiene (everything is worse when you are tired!)
  - Set a routine by an alarm clock
  - Limit naps to 1 for <30-45 minutes
  - If you can't sleep, get up and do something relaxing for 30-45 minutes and retry; worrying about not sleeping can keep you awake

\*David 2013

## Case 1

- You are called on a 28 year-old, 120 kg muscular male, with polytrauma, now 1 hour
  post-operative from tib/fib fracture repair. He has received 6 mg hydromorphone in
  PACU for pain. He complains of severe (8/10) pain when awake and his Spo. is 97%,
  but falls asleep when additional medication is administered (1 mg increments). When
  he is asleep, his loud snoring can be heard throughout PACU and his SpO<sub>2</sub> falls to 85%
  despite 51 NC.
  - What are your concerns?
  - What should his post-operative pain regimen include?
  - Does he require any additional therapy or monitoring during his post-operative course?

## Case 1 Discussion

#### Concerns

- Poor pain control despite excessive opioid
- Evidence of upper airway obstruction when sedated with desaturation
- Inappropriate application of NC oxygen
- Suggested post-operative pain regimen
  - Regional block/catheter
  - Ketorolac IV, acetaminophen IV, ketamine, adjuncts, ice, compression, elevation,
  - guided imagery, relaxation, mindfulness
- Oral weak opioid should be added as soon as patient can stay awake and tolerate PO
   Additional therapy or monitoring
- Appropriate application of supplemental oxygen
- CPAP or BiPAP initiated immediately with instructions not to transfer from PACU until available on the floor
- Continuous SpO2 monitoring for at least the first 24 hours and continue as long as the patient requires large doses of IV opioids

## Case 2

- You are called to evaluate a 58 year-old female with widely metastatic ovarian cancer who is in PACU after a palliative diverting ostomy. She is chronically opioid dependent for her cancer pain and is currently well-controlled on morphine SR 150 mg PO BID and morphine IR 30 mg PO Q4H. She usually only takes 2 breakthrough doses per day. She will likely be NPO for at least 3 days post-operatively.
  - What are your concerns?
  - What should her post-operative pain regimen include?
  - Does she require any additional therapy or monitoring during her post-operative course?

## Case 2 Discussion

#### Concerns

- Oral opioid equivalent will have to be delivered via PCA basal rate
- Additional PCA dose will have to be added for breakthrough
- IV PCA dose will have to be reconverted to PO equivalent when patient is reliably tolerating PO
- Suggested post-operative pain regimen
  - TAP block, ketorolac, IV acetaminophen, ketamine, ice, abdominal binder, mindfulness, physical therapy

#### - Opioids

- PO morphine equivalent → 150+150+60 = 360 mg/day (conservative)
- Reduction by ½ for cross-tolerance → 360/2 = 180 mg/day
- IV equivalent morphine dose  $\rightarrow$  180/3 = 60 mg/day
- + IV equivalent hydromorphone dose  $\rightarrow$  60/5 = 12 mg/day
- Hourly basal hydromorphone dose  $\rightarrow$  12/24 = 0.5 mg/hour
- Breakthrough dose should be 10-15% of daily dose  $\rightarrow$  1-1.5 mg Q20 minutes and titrate according to daily usage
- Additional therapy or monitoring as indicated
- · Recommend palliative care consult to get patient plugged in

## Case 3

- You have a 28 year-old female with a past medical history of anxiety/depression and multiple abdominal surgeries, who was admitted for abdominal pain. She has been ruled out for organic causes for her pain. She here ported good pain control in the hospital with Norco 10/325 mg every 6 hours and was started on duloxetine and gabapentin. She was very receptive to starting non-opioid adjuncts for her pain control.
  - What are your concerns?
  - What should her discharge pain regimen include?
  - Does she require any additional therapy or monitoring after discharge?

## Case 3 Discussion

#### Concerns

- High risk for opioid misuse (young, high levels of pain exacerbation, psychological disorder)
  - Recurrent surgeries for functional abdominal pain
- Suggested discharge pain regimen
  - Oral weak opioid with APAP for 1 week with explicit instructions for wean
  - NSAIDs if effective (weak evidence for use in FAP)
  - Continue duloxetine and gabapentin
  - Add nortriptyline if suboptimal results or sleep disturbances
     Recommend psych follow-up to initiate psychotherapy/cognitive behavioral therapy, which is highly effective for functional addominal ada in
- Additional therapy or monitoring
- Short term opioid contract
- Clear documentation in discharge instructions of intended period of use
- Close primary care follow-up

## Case 3B

multiple abdominal surgeries, who was admitted for abdominal pain. She has been ruled out for organic causes for her pain. She asks for a prescription on discharge for Oxycontin because that is what she says works the best for her pain. During the hospital stay, she refused your suggestion of starting non-opioid adjuncts because she said she has "taken all of them and none of them work". – What are your concerns?

- What should her discharge pain regimen include?
- Does she require any additional therapy or monitoring after discharge?



## Case 3B Discussion

- High risk for opioid misuse (young, high levels of pain exacerbation, aberrant
- Recurrent surgeries for functional abdominal pain

## Suggested discharge pain regimen

- Counsel on reasons opioids will not be initiated (poor effectiveness in FAP) vs. consider tramadol due to effectiveness in other dysfunctional pain syndromes (fibromyalgia)
- Recommend duloxetine and gabapentin +/- nortriptyline
- Referral to chronic pain clinic to evaluate for sympathetic blockade
- Recommend psych follow-up to initiate psychotherapy/cognitive behavioral therapy, which is highly effective for FAP

#### Additional therapy or monitoring

- If patient is on opioids, refer back to prescriber for opioid wean

Biopsychosocial Treatment Plan – DM II/Cellulitis				
Pharmacologic:	Resume all home meds			
Antibiotics	Most important medication in treatment plan.			
NSAID (if renal function ok)	Ibuprofen, naproxen, celecoxib			
Acetaminophen	Alone or combined product			
Antineuropathic	Gabapentin, pregabalin			
Antidepressant	Amitriptyline (sleep/pain), duloxetine			
PO Opioid	Norco 10/325 Q4H scheduled and PRN (give first); never SR for opioid naïve			
IV Opioid	$PCA \rightarrow convert$ to intermittent $\rightarrow convert$ to oral			
Side effects	Ondansetron, diphenhydramine, laxative, CPAP			
Non-pharmacologic:				
Ice, compression, elevation	Ice, elevation			
Physical therapy/ambulation	Out of bed to chair TID and encourage ambulation			
Relaxation/sleep hygiene	Avoid overnight interruptions			
Weaning plan	Discuss with outpatient PCP			
Educate	Bad infection. Pain normal. Healing takes time. Tolerance. Habit-forming. Tight glucose control!			

# APMS Algorithm for Acute on Chronic Pain

#### APMS Chart review

- Is the patient is taking all home meds?
- Does the regimen include all optimal adjuncts?
- Is the patient complaining of acute pain that is in proportion to situation?
- If no:
  - Call the primary team and make verbal recommendations
  - Can use primary team and make reconstruction reconstructions
     Make written recommendations in the chart with reference to the name of the primary team contact: "After thorough chart review, the patient is not optimized on home meds and adjuncts. After starting x, y, and z, if the patient's pain is still not well controlled, APMS will see the patient and make further recommendations. Otherwise, the PMT nursing team will follow and make further recommendations."
- Call the PMT nursing team and add the patient to their list of extra patients to see If yes, or the pain remains poorly controlled after recommendations implemented, proceed with APMS in-person evaluation and make further recommendations as indicated



## Change Yourself (Not Your Patient) to Manage Heartsink

- Introspection to get insight into thoughts and behaviors - What goes through my mind? Is it an accurate reflection of reality? - Why do I act this way? How could I handle this better?
- Ways to reduce stress and anxiety during visit
  - You can't control anyone else but yourself (you are not perfect)
  - Try to be more tolerant and flexible (your patients aren't perfect either) - Think rationally and empathize (they are suffering)
  - Focus your patient on long-term goals (they may have setbacks)
  - Accept that you will not always be liked by everyone
- Be sure "your own house is in order"
  - Cultivate home life, faith, hobby

  - Weight reduction (desire, discipline, dietary compliance)
  - Don't let your identity be your work