Medication Management in An "Opioid Epidemic" and Patient Empowerment

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April 27, 2018

"I actually have nothing to say, so my presentation should only last an hour or two."[1]

About Me

- Chronic Pain Medication Therapy Management Pharmacist,
  Park Nicollet, St Louis Park, Minnesota
- Consultant Pharmacist, Pain Partners LLC
- Patient Advocate and Educator, Scleroderma Foundation and American Pain Foundation
- BS Molecular and Cellular Biology, University of Arizona
- Doctorate of Pharmacy, Oregon State University
- Created the pharmacist-led pain management service at Tucson Medical Center
- Developed a program for post-op pain management plan development prior to surgery, St Luke's Regional Medical Center, Boise, ID
- Participated in a medical mission with Friends of The Children of Haiti

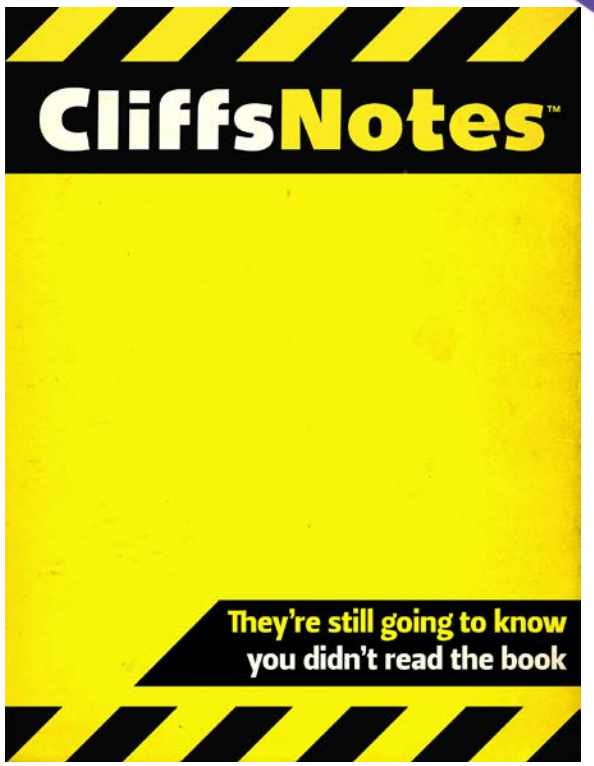
Disclosures

- Nothing to disclose
- No involvement with industry/organizations that may potentially influence this educational presentation.
- I will be discussing “off-label” uses of medications

"A career? A life? Isn't that a conflict of interest?"

Learning objectives

- Describe advantages and disadvantages of various medications and medication classes
- Learn “outside-of-the-box” options for pain management
- Determine appropriate medications for special populations and conditions
- Discuss how the “opioid epidemic” impacts our patients, and the importance of individual care
- Develop techniques to empower your patients to become active participants in their healthcare team



Government recommendations?

- Jeff Sessions
  - "I am operating on the assumption that this country prescribes too many opioids."
  - "People need to take some aspirin sometimes.“
  - “Sometimes you just need to take two Bufferin or something and go to bed.“
- Bob Twillman-Academy of Integrative Pain Medicine Executive Dir
  - "That remark reflects a failure to recognize the severity of pain of some patients."
  - "It’s an unconscionable remark…[and] further illustrates how out of touch parts of the administration are with opioids and pain management."

CDC Opioid Guidelines

- Intended for Primary Care Clinicians
- Treatment of chronic pain
- Non-opioid therapy preferred
- High doses= higher risk of OD and death
- Benefits outweigh risk
- Avoid Benzos and Opioids (+/- carisprodol)
- Risk of opioid use disorder and overdose-must offer or refer
- Discontinue when risks of harm exceed benefits
- NO PATIENT ADVOCATE REPRESENTATION
- **Clinical judgement necessary**

Case Study

- Patient, M.G., is a 36-year-old female who comes to your office for her annual exam and mentions pain in her back, that has persisted for the last year following a fall.
- Physical exam shows no apparent physical or mechanical cause for her pain. Imaging from the local hospital doesn't indicate a cause.
- Patient appears to be in no acute distress and functions normally, with her reported pain level of 8/10.
- She is requesting oxycodone 30mg tabs, for she is allergic to Vicodin and morphine.
- When you question her about other options for pain management, she states that "nothing else seems to help her pain."
- As her primary care provider, how should you help her?

Question #1

- Which of all the following are true?

A. M.G. is a patient simply seeking a prescription for opioids
B. Oxycodone 30 mg is an appropriate medication and dose for her seemingly chronic back pain
C. Further review is necessary to determine the history and/or cause of her pain
D. The patient must be lying if her pain level is 8/10.
E. All of the above are false

- What other questions do we need answered?

Role of the Pharmacist

- Detailed information on the differences between medications in the same class
- Right drug for THAT patient
- Evaluate drug-drug and drug-disease interactions
- Monitor usage of controlled substances via the PDMP
- Assist with determining barriers of care and effective available options
- Collaborative agreements possible to allow for limited prescribing
- Prescribe Naloxone when appropriate?
- Medication Therapy Management (MTM)

Medication Therapy Management (MTM)

- Comprehensive Medication Review
  - Different providers
  - OTC
  - Herbals
- Evaluate adherence
- Assess Barriers and find solutions
- Who pays for this service?
  - Medicare benefit for many patients
  - Commercially insured patients
  - Cash pay?
- Goals: Determine the lowest effective dose of the most appropriate medications to TREAT the pain, assess compliance, collaborate with providers to create an individual plan to meet each patient's needs, educate patients and providers, and encourage patient development and use of non-pharmacologic tools for pain management

Patient Comments

- “My provider doesn’t listen to me”
- “My provider has never touched me”
- “Nobody has ever addressed the reason for my pain”
- “The opioid epidemic is forcing me to buy off the street.”
- “I never knew I could feel this good taking so little medication”
- “All doctors think I am drug-seeking”
- “I never thought this would be my life”

Pain Management- Car analogy[1]

- Imagine a car with four totally flat tires
- “Successful” treatment of a person with chronic pain
  - Learn how to independently manage their condition
  - Maximize participation in everyday life activities
  - Minimize discomfort and side effects
  - Avoid other bad consequences of treatment
- 1 tire=Medications
- Other 3 tires?
- Living a full life with pain = patient taking an active role
- Each person’s needs differ.
  - Learn various tools
  - Determine when to use what tool
  - Assess who they want on their team
  - Maintain car
- Pain takes a team effort, with the patient taking an active role, to live a full life despite pain
- http://www.theacpa.org/pain-management-tools/videos/support/ <iframe width="853" height="480" src="https://www.youtube.com/embed/JDzfjERARUE" frameborder="0" allow="autoplay; encrypted-media" allowfullscreen></iframe>

Pain

- *"… an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."*
- Chemicals responsible for pain transmission and perception
  - Serotonin
  - Norepinephrine
  - Calcium/Sodium Channels
  - GABA
  - Dextromethorphan
  - Glutamate
  - NMDA
  - Opioid agonists
  - Cannabinoid

Other Causes of “Pain”

- Nausea/Vomiting/Gas
- Sleep Deprivation
- Poor Coping Skills
- Stress
- Social Concerns
  - Financial problems
  - Relationship difficulties
- Psychological Conditions
  - Anxiety
  - Depression
- Untreated persistent pain
- Chronic Pain
- Trauma

Classification of Major Complications of Persistent Pain

Deconditioning

a. “Overuse” of ancillary musculoskeletal tissue with degeneration
b. Decreased mobility
c. Obesity
d. Muscle atrophy
e. Contractures
f. Neuropathies

Hormonal

a. Excess catecholamine production with hypertension and tachycardia
b. Glucocorticoid excess or deficiency
c. Hypotestosteronemia
d. Insulin - Lipid abnormalities
e. Immune suppression

Neuropsychiatric

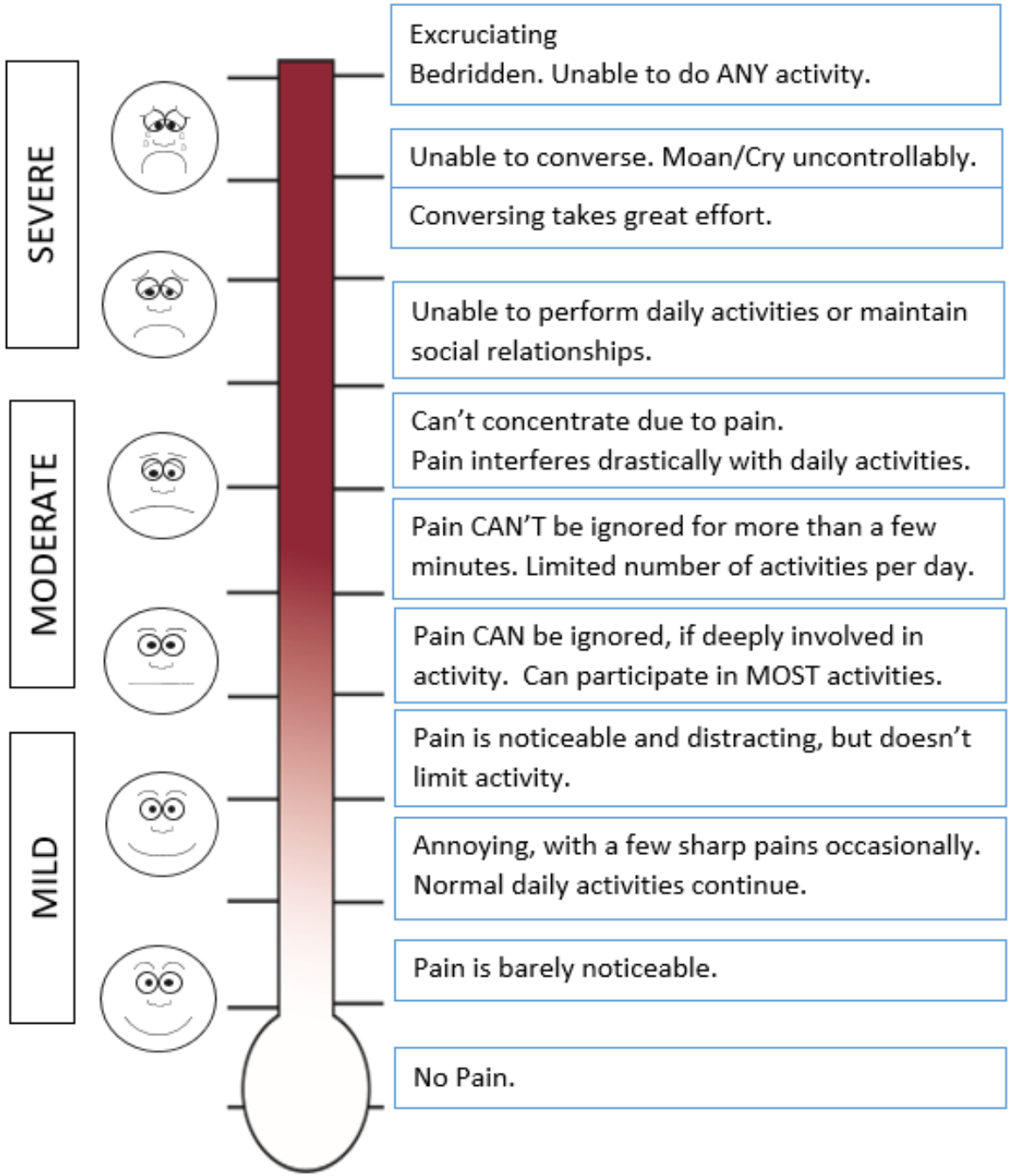
a. Nerve - Spinal cord degeneration
b. Cerebral atrophy
c. Depression/suicide
d. Insomnia
e. Attention deficit
f. Memory loss
g. Cognitive decline

Hormonal Complications

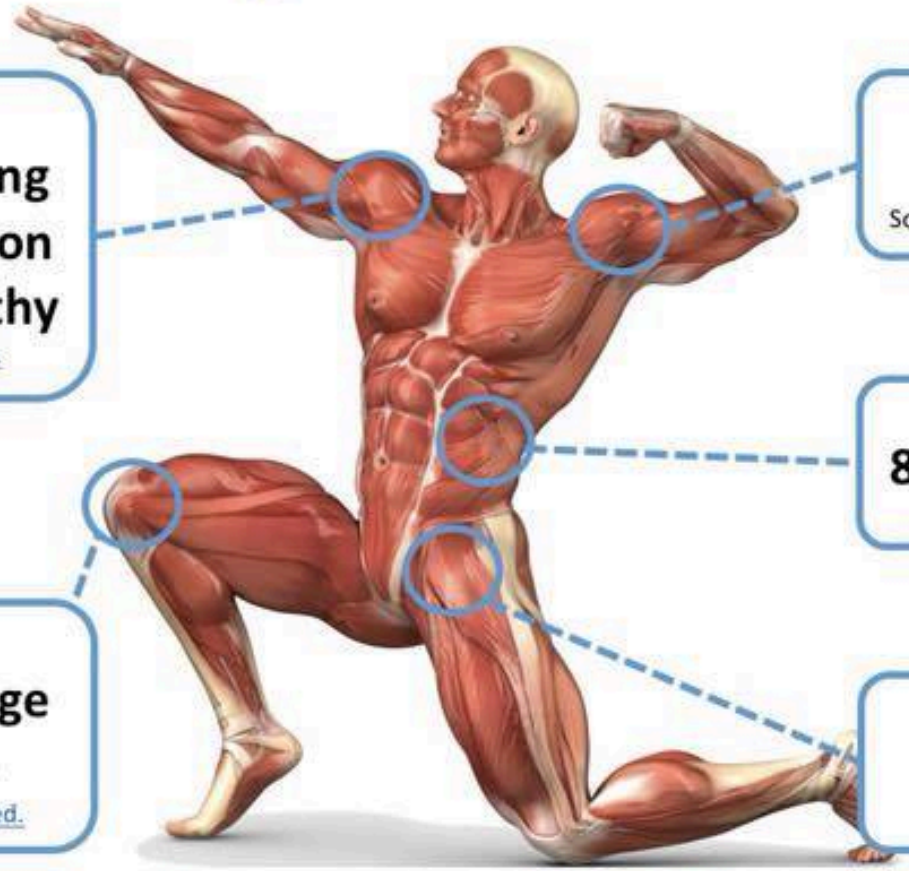
Signs and Symptoms of Glucocorticoid Abnormalities		
Glucocorticoid Excess		
Weight Gain	Menstrual Irregularity	Depression
Lethargy	Cognitive Dysfunction	Memory Loss
Osteoporosis	Paranoia/Psychosis	Back Ache
Fractures	Muscle Weakness	Hypertension
Bruising	Striae	Loss Scalp Hair
Ankle Edema	Renal Calculi	
Diabetes/Decreased Glucose Tolerance		
Glucocorticoid Deficiency		
Weakness	Fatigue/Tiredness	Salt Craving
Weight Loss	Constipation/Diarrhea	Tachycardia
Hyperpigmentation	Nausea/Vomiting/Anorexia	Anemia
Postural Dizziness	Vitiligo	Muscle/Joint Pains
Auricular Calcification	Hypokalemia	Hyponatremia
Hypotension (<110mm Hg Systolic)		

Pain Assessment

- Vitals
- Physical Assessment
- Subjective
- Pain scales
  - Numerical
  - Visual Analog Scale
  - Categorical
  - Wong-Baker Faces scale
- Pain History
  - Location
  - Quality
  - Intensity
  - Modifying Factors
  - Timing
- Reassessment
- **Patient Education Necessary**



Scans on pain free people



51 people (age 40-70)

78% bursal thickening

65% ACJ degeneration

39% cuff tendinopathy

Girish et al (2011) Am J Roentgenol.

53 people (age 40-65)

72% SLAP lesions

Schwartzberg et al (2016) Ortho J Sports Med.

3110 people (age 20-80)

80% disc degeneration

Brinjiki et al (2015) Am J Neuroradiol.

710 people (age 51-89)

68% cartilage damage

72% osteophytes

Guermazi et al (2012) Brit J Sports Med.

45 people (age 15-66)

69% labral lesions

Register et al (2012) Am J Sports Med.

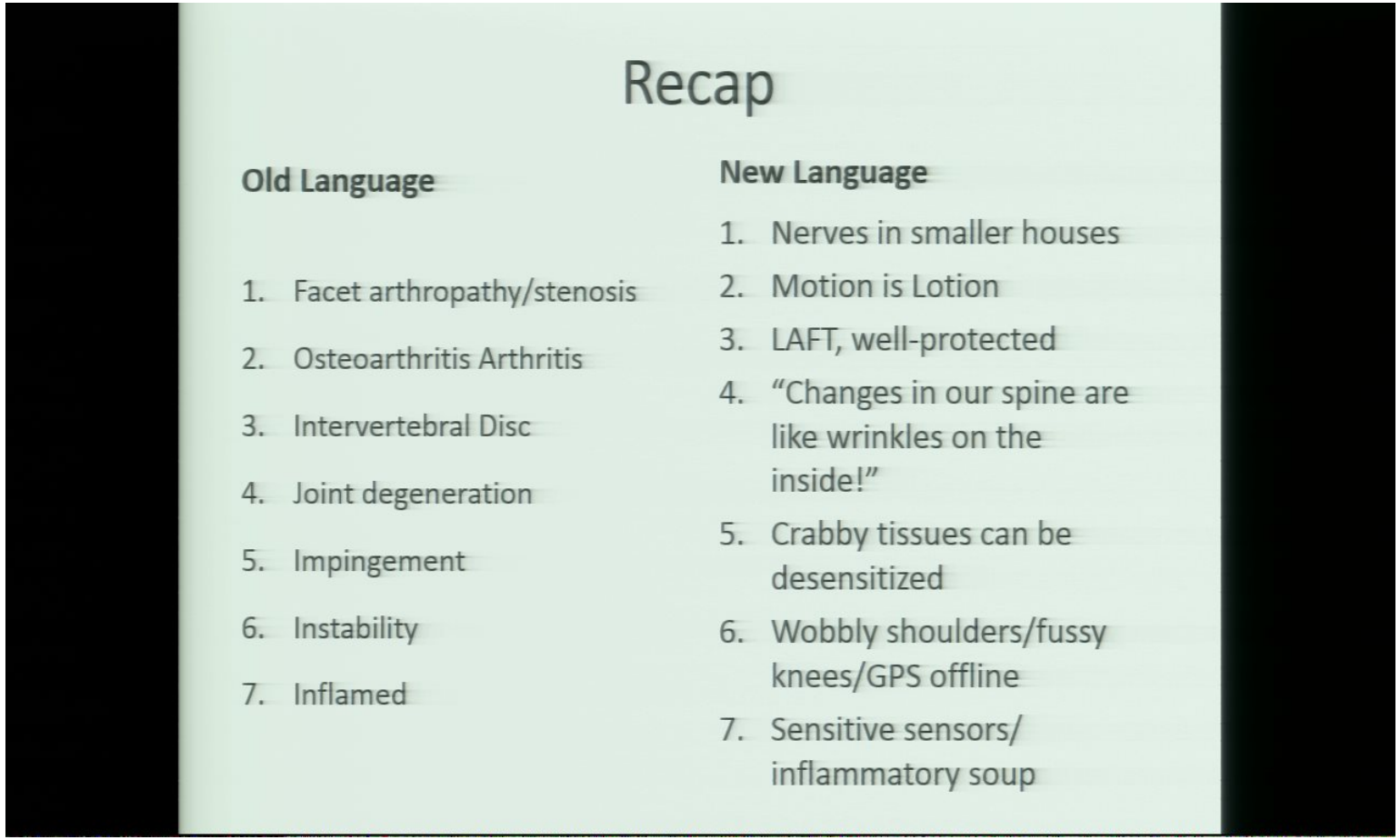
The Sports Physio @adammeakins

Unintended nocebo Effect

- Nocebo-inert therapy that creates harmful effects
- Nocebo effect-adverse reaction of patient
- Everything thing a patient does affects their pain
- Everything you do and think can affect your patient’s pain
- Change the narrative.
- Hard to undue the patient’s beliefs once negative

Avoiding the Nocebo Effect

- Words that need more clarification: chronic, instability, bulging discs, degenerative, stenosis, inflammatory peripheral joints



Medications

- Analgesics
- Anti-inflammatory Medications
- Anticonvulsants
- Antidepressants
- Muscle Relaxants
- Sodium Channel Blocker
- Alpha-2 Adrenergic Agonists
- Cannabinoids
- LDN
- Topicals
- Opioids

Question #2

- Which products have anti-inflammatory properties?
  - A. APAP 1000 mg TID
  - B. etodolac 400 mg BID
  - C. low dose naltrexone 4.5 mg QHS
  - D. B and C
  - E. All of the above

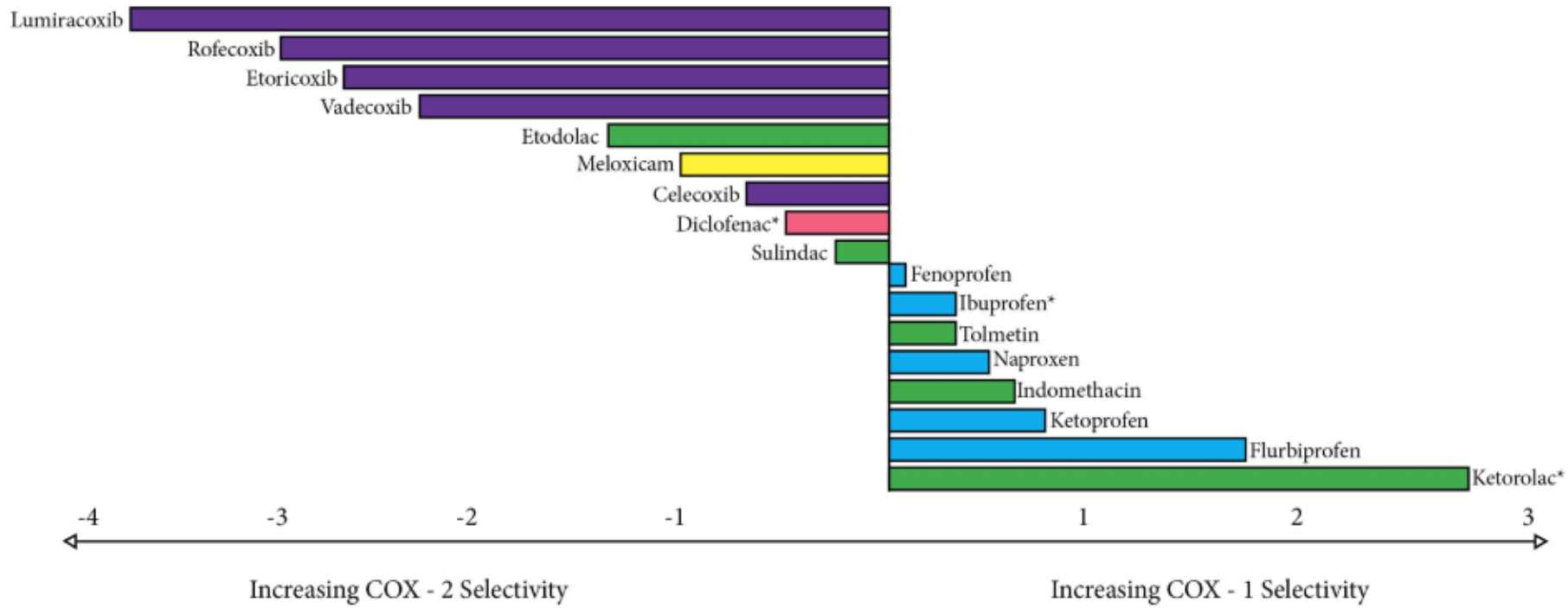
Acetaminophen

- Synergistic activity
- Max dose in 24 hours
  - 3-4g/d (limit 4 g to 2 weeks)
  - 2-3g/d elderly, liver dysfunction, history of alcohol abuse
- Xodol vs Norco vs Vicodin vs Lortab
- Arthritis formulation – 650mg
- Inflammatory action

Anti-inflammatory Medications

- COX 1 Inhibitors ± PPI- Increased risk of GI bleeds
  - OTC
    - Aspirin
    - ASA 400 mg+ Caffeine 32 mg/ tablet)- 2 tabs/dose
    - ASA 250mg, ASA 250mg, Caffeine 65 mg- 2 tabs/dose
  - Ketorolac- limit to 5 days for severe acute pain, max 40mg/day orally, usually only following IV therapy
  - Indomethacin
  - Naproxen
  - Ibuprofen
- COX 2 Inhibitors- Increased CV Risk
  - Etodolac 300-400mg BID
  - Diclofenac
- Diclofenac 1% topical gel- limited systemic absorption (Cmax 53.8±32 (topical) vs 2270 ± 778 (oral 50mg TID))
- Topical (diclofenac, ketoprofen, and naproxen, salicylate products)
- Allergies
  - Diclofenac, nabumetone, meloxicam/piroxicam, aspirin-all SEPARATE classes
  - Etodolac, indomethacin, ketorolac, sulindac- SAME CLASS
  - Ibuprofen, ketoprofen, naproxen, and oxaprozin- SAME CLASS
- Additional precautions-renal dysfunction, other renally cleared meds, elderly, signs of bleeding, abd pain, pregnancy, HTN, edema

Relative Selectivity of NSAIDs as Inhibitors of COX-1 and COX-2 by Chemical Class



- Propionic Acids
- Carbo - and Heterocyclic Acids
- Oxicams
- Phenylacetic Acids
- COX - 2 Seclective Coxibs

* Available as IV formulation in US

Fudin J. (July 2014). Chemical Classes of Non-Steroidal Anti-Inflammatories (NSAIDs) in US. (Accessed 10/6/2015, http://paindr.com/wp-content/uploads/2014/07/NSAIDS-Chemical-Classes_2014_Shahzad-Henderson-Fudin.pdf)

Herndon C, Hutchison R, Hildegarde B. et al Management of Chronic Nonmalignant pain with Nonsteroidal Anti-inflammatory Drugs Pharmacotherapy 2008; 28(6):788-805

Warner TD, Mitchell JA. Cyclooxygenases: new forms, new inhibitors, and lessons from the clinic. FASEB J. 2004; 18:790-804

Richard Wheeler Pharm D., BCPS
10-2015

Discontinue NSAIDs Prior to Surgery

Table 2. NSAID Discontinuation Recommendations Based on Half-Lives of NSAIDs in Normal Subjects

Drug (Brand)	$t_{1/2}$, h	$5t_{1/2}$, h	Discontinuation, d
Salicylic Acids and Esthers			
Choline Magnesium Trisalicylate (Generic)	9-17	45-85	4
Diflunisal (Generic)	8-12	40-60	3
Phenylacetic Acids			
Diclofenac (Cambia, Cataflam, Flector, Pennsaid, Solaraze, Voltaren, Zipsor, Zorvolex, generic)	2.3	11.5	1
Carbocyclic and Heterocyclic Acids			
Etodolac (Lodine, generic)[a]	7.3 +/- 4	36.5 +/- 20	3
Indomethacin (Indocin, generic)	4.5	22.5	1
Ketorolac (Sprix, generic)	= 5.3	26.5	2
Sulindac (Clinoril, generic)	16-18	80-90	4
Tolmetin (Tolectin, generic)	2-6	10-30	3
Propionic Acids			
Fenoprofen (Nalfon, generic)	2-3	10-15	1
Flurbiprofen (Ansaid, generic)	7.5	37.5	2
Ibuprofen (Advil, Motrin, generic)	1.8-2.0	9-10	1
Ketoprofen (Generic)	1.6-4	8-20	1
Naproxen (Aleve, Anaprox, Naprosyn, generic)	12-17	60-85	4
Meclofenamate (Generic)	3-4	15-20	1
Enoloic Acids			
Nabumetone (Generic)	26	130	6
Meloxicam (Mobic, generic)[a]	15-20	75-100	5
Piroxicam (Feldene, Therafeldamine, generic)	50	250	11
COX-2 Inhibitors			
Celecoxib (Celebrex)[a]	11	55	3

COX, cyclooxygenase, **NSAIDs**, non-steroidal anti-inflammatory drugs

[a] COX-2 selectivity: etodolac>meloxicam>celecoxib. If the clinician chooses to discontinue these medications due to presumed perioperative risk, the recommended times are listed. However, in the absence of significant bleeding risk, such as during CABG surgery or with thromboembolic disease, these medications could theoretically be continued safely to provide preemptive and perioperative analgesia.

Muscle Relaxants

Table 1. Difference Between Spasticity and Spasms

Description	Spasticity[4,10,13]	Spasms[3,5]
Definition	• Velocity-dependent increase in muscle tone caused by the increased excitability of the muscle stretch reflex	• Involuntary muscle contractions
Etiology	• Central • Disorder of upper motor neurons	• Peripheral • Muscle sprain or injury • Nerve compression (eg, spinal stenosis)
Symptoms	• Stiffness • Hypertonicity • Hyperreflexia	• Jerks • Twitches • Cramps
Causes	• Multiple sclerosis • Cerebral palsy • Spinal cord injury • Traumatic brain injury • Motor neuron disease • Post-stroke syndrome	• Musculoskeletal pain • Fibromyalgia • Sciatica • Mechanical low back pain • Herniated disk • Spinal stenosis • Myofascial pain
FDA-approved agents[a]	• Botulinum toxin[b] • Baclofen • Dantrolene[c] • Diazepam[d] • Riluzole[e] • Tizanidine	• Carisoprodol • Chlorzoxazone • Cyclobenzaprine • Metaxalone • Methocarbamol • Orphenadrine

[a] See Tables 3 and 4 for more in-depth review of agents.
[b] Indication depends on the product.
[c] Also approved for prophylaxis and treatment of malignant hyperthermia.
[d] Approved for treatment of both spasticity and muscle spasms.
[e] Mainly used in patients with amyotrophic lateral sclerosis.

Muscle Spasticity- Centrally-Acting

- Baclofen
  - SE: dry mouth, sedation, W/D
  - Cluster HA and nicotine, cocaine, alcohol dependence
- Tizanidine
  - Take with food for better tab absorption
  - Tablets DO NOT EQUAL Capsules
  - SE: dry mouth, hypotension, weakness, inc LFT, W/D
  - Taper slowly (2-4 mg/day), esp high doses (>20 mg/day) for long periods (>9 weeks
  - CYP 1A2 substrate
    - Fluvoxamine and ciprofloxacin- ⇧ Tizanidine
    - BC may ⇧ tizanidine
- Diazepam
  - Approved for both spasticity and muscle spasms
  - SE: sedation, potential for abuse/dependence, W/D
  - Active metabolites-desmethyldiazepam, temazepam, oxazepam
  - Caution with opioids- ⇧ risk of resp depression

Muscle spasticity-Peripherally-acting

- Dantrolene
  - like phenytoin
  - SE: muscle weakness, dyspnea, dysphasia, somnolence, diarrhea, hepatotoxicity (>800mg/d for 3-12 months
- Botulinum toxin
  - Onset 14 days
  - Duration 3 months
  - Body develops new nerve terminals
  - Potential autoimmune response

Muscle Spasms- Centrally-Acting

- Recommended for short-term use
- Cyclobenzaprine-similar to TCA
  - No direct skeletal muscle activity
  - SE: sedation, dry mouth, urinary retention, fatigue, tachycardia, cardiac conduction disturbances
- Methocarbamol- like guaifenesin
  - Mechanism unknown
  - Less sedation than cyclobenzaprine, brown or green urine, less muscle coordination, grand mal sz
- Carisoprodol
  - alter interneuronal activity, reduce perception of pain
  - Metabolite-meprobamate (baribiturate-like activity)- psychoactive
  - Poor CYP 2C19 metabolizers – 4 fold inc carisoprodol and 50% meprobamate
  - SE: drowsiness, headache, vertigo, insomnia, an inc risk of resp depression, more dizziness, less anticholinergic
  - Holy Trinity of Death- opioids+ carisoprodol+ BZD (or barbiturates)

Muscle Spasms- Centrally-Acting

- Recommended for short-term use
- Orphenadrine- like a stronger diphenhydramine
  - Antimuscarinic Ach and NMDA receptors in CNS
  - SE: dry mouth, sedation, constipation, ocular hypertension, palpitations, sinus tachycardia
- Metaxolone
  - Mechanism unknown
  - SE: dizziness, headache, nervousness, epigastric discomfort, muscle cramping, less drowsiness or cognitive defects, inc risk of resp depression
  - Holy Trinity of Death Take 2- opioids+ carisoprodol+ BZD (or barbiturates)
  - Avoid with renal or hepatic impairment
- Chlorzoxazone
  - Acts at the spinal cord and subcortical areas of the brain
  - SE: orange, red, or purple urine, dizziness, somnolence, possible overstimulation, hepatocellular toxicity (need LFTs)

Anticonvulsants

- Co-morbid anxiety
  - Gabapentin ****New drug of abuse**
    - First line therapy for Diabetic Peripheral Neuropathy
    - Dec painful dysthesias, hyperalgesia, centralized pain and improve sleep
    - Possible to enhance morphine efficacy
    - Smaller dose adjustments possible (Titration based on tolerability)
    - Can dose BID with bigger dose at bedtime
    - SE: somnolence, dizziness, and infection (safer than TCAs-esp elderly)
    - Treatment dose 2400-3600 mg/d (Max 4800 mg), Renal dysfunction: 1400mg/d for CrCl <60
  - Pregabalin- more predictable PK
    - FDA approved -neuropathic pain associated with DPN, PHN, and **fibromyalgia**, and as adjunctive for partial seizures
    - Improves sleep
    - SE: dizziness, somnolence, **peripheral edema**, infection, and dry mouth
    - Treatment dose 300-600 mg/d, Renal dysfunction: Max ***
  - Efficacy with spasticity (1200-3600mg gabapentin/d or 150-600 mg pregabalin/d)

Anticonvulsants

- Obese or sz history
  - topiramate (Topamax)- approved for migraines, DPN mixed reviews,
- Co-morbid bipolar or sz history
  - Carbamazepine (Tegretol)
    - most appropriate for lancrinating neuropathic pain, inc trigeminal neuralgia
    - SE: sedation, nausea, vomiting, hepatic enzyme induction, transient leukopenia and thrombocytopenia, aplastic anemia (CBC, LFTs, BUN, sCr baseline and 2,4,6 weeks and Q6mo
  - Oxcarbazepine (Trileptal)-analog of carbamazepine- no blood dyscrasias or hepatic insult
  - Phenytoin-less effective than carbamazepine for trigeminal neuralgia-
    - Slow and variable absorption and many drug interactions
    - Narrow therapeutic window, cardiac conduction abnormalities, hirsutism, GI and hematologic effects, gingival hyperplasia
  - Lamotrigine (Lamictal)
    - central pain syndromes (trigeminal neuralgia)
    - Long-term -Stevens-Johnson syndrome, toxic epidermal necrolysis, and visual blurring.
  - Valproic acid (Depakote)- migraine HE, potential birth defects

Antidepressants

- SNRI
  - Duloxetine –more NE, 5HT
    - Start 20mg daily if sensitive to medications
    - Max dose 60mg/day for pain (120mg for GAD and MDD)
    - SE: nausea, increased anxiety, dry mouth, insomnia, sedation, fatigue, sexual SE
  - Milnacipan - 3:1 NE:5HT
    - Start 12.5 mg QD x 1d, then 12.5mg BID x 2d, 25mg BID x 4d, then 50mg BID
    - Max 200mg/d
    - Baseline sCr
  - Venlafaxine (Effexor) – higher doses needed for NE effect, inc BP more with IR
  - Desvenlafaxine (Pristiq)
- TCAs –more sedating, possible hangover effect, weight gain, not recommended for elderly (more NE and histamine, less 5HT), QTc prolongation?, cardiac conduction disturbances
  - Nortriptyline – less anticholinergic and antihistamine
  - Amitriptyline- most 5HT, mod anticholinergic
  - Imipramine – middle of the pack for receptor activity
  - Desipramine - best for pain- most NE
- Atypicals
  - Bupropion – less sexual SE, wt loss, stimulating, inc risk of seizures skinny and/or elderly, avoid w/ sz or bulimia
  - Mirtazapine- ⇧⇧ Antihistamine, ⇧ Anticholinergic, less sexual SE, wt gain
  - Trazodone- sedation, “messy drug” more 5HT, minimal anticholinergic
- Serotonin Syndrome
  - Symptoms: neuromuscular hyperactivity, autonomic hyperactivity, altered mental status, and seizures

Serotonin Syndrome

- Serotonin syndrome symptoms within several hours new drug or increasing a dose of a drug
- Signs and symptoms include:
  - Agitation or restlessness
  - Confusion
  - Rapid heart rate and high blood pressure
  - Dilated pupils
  - Loss of muscle coordination or twitching muscles
  - Muscle rigidity
  - Heavy sweating
  - Diarrhea
  - Headache
  - Shivering
  - Goose bumps
- Severe serotonin syndrome can be life-threatening. Signs and symptoms include:
  - High fever
  - Seizures
  - Irregular heartbeat
  - Unconsciousness

Lidocaine

- Lidocaine 5% patch- Rx (often not covered)
- Lidocaine 4% patch- OTC
- Lidocaine cream
- FDA approved- post-herpetic neuralgia
  - Anything else-first line
- Off-label- Neuropathic pain

NMDA antagonists

- Ketamine- topical, oral
  - hypnotic, analgesic, amnesia
  - SE: hallucinations, confusion, delirium
  - Concerns for diversion, harm to patient
- Dextromethorphan
  - reduce opioid dose in surgery
  - diabetic neuropathy

Medical Cannabis/THC

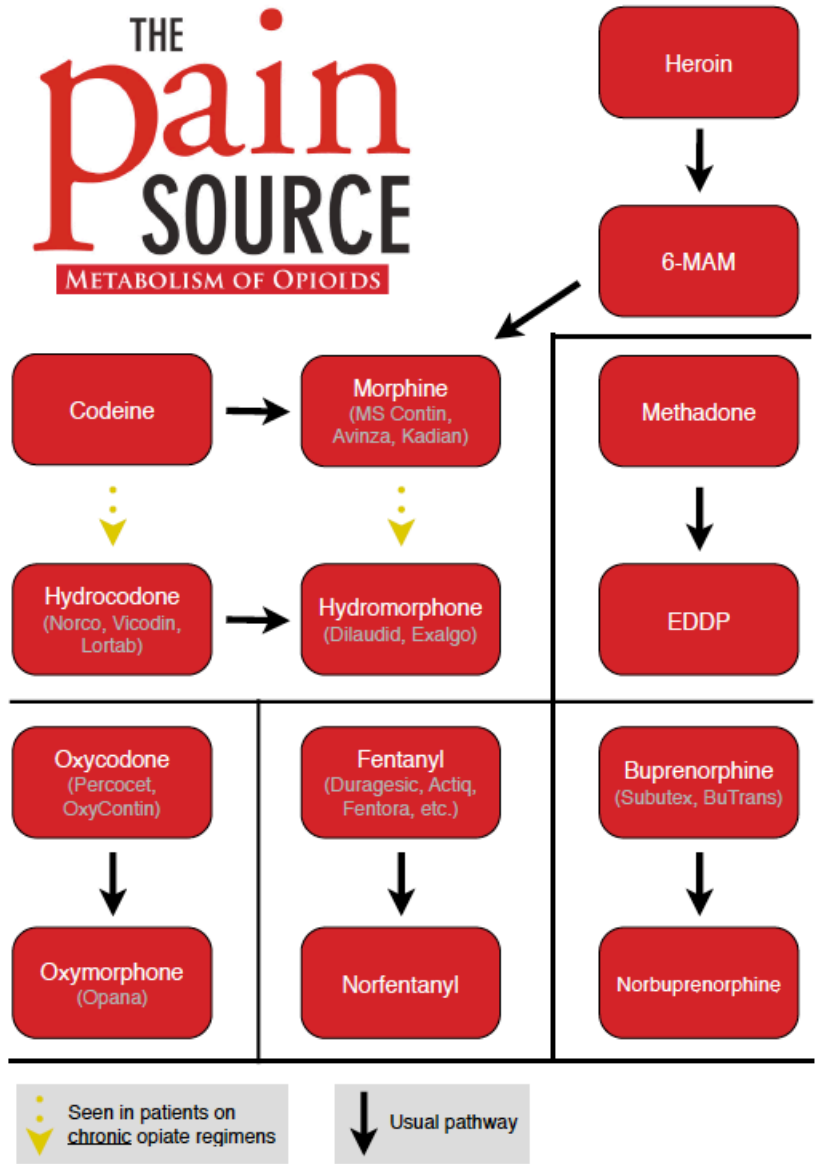
- Dr Gonzaga

Topicals

- Biofreeze- 6 times daily, avoid mucous membranes
  - Consists of Menthol 10%, Amica Montana, Calendula, chamomile, dimethyl sulfone (MSM), echinacea, ethanol, ilex paraguariensis, isopropyl myristate, Juniper Berry, white tea.
  - Classified as topical analgesics- a ‘counter irritant’ mechanism
  - Menthol may stimulate cold receptors in the skin that may help regulate pain
- Capsaicin- cream and patch
- Essential Oils

Elephant In The Room- OPIOIDs

- Mu, Delta, Kappa
- Pure Mu agonists
  - Morphine, codeine, hydrocodone, oxycodone, oxymorphone, levorphanol
- Partial Mu agonists
  - Buprenorphine, butorphanol
- Mixed agonist/antagonist
  - Nalbuphine, pentazocine
- Central (Mu+NE/5HT)
  - Tramadol, tapentadol
- Methadone
  - 5HT, NE, NMDA antagonist, Mu-opioid agonist
  - Good for neuropathic pain
  - QTc prolongation-consider baseline EKG, 30 days, and annually
    - More if >100mg/day, seizures, or QTc 450-500ms (D/C at >500ms?)
  - T1/2 7-49 hours
  - Cyp 3A4, 2B6, 2C19
  - Monitor K+
  - Wait 5-7 days between dosage changes
  - Conversion not linear (higher morphine dose=less methadone needed)
  - 2.5mg Q12H for opiate naive


THE pain SOURCE
METABOLISM OF OPIOIDS
Heroin
6-MAM
Codeine
Morphine
(MS Contin, Avinza, Kadian)
Methadone
Hydrocodone
(Norco, Vicodin, Lortab)
Hydromorphone
(Dilaudid, Exalgo)
EDDP
Oxycodone
(Percocet, OxyContin)
Fentanyl
(Duragesic, Actiq, Fentora, etc.)
Buprenorphine
(Subutex, BuTrans)
Oxymorphone
(Opana)
Norfentanyl
Norbuprenorphine
Seen in patients on chronic opiate regimens
Usual pathway

Urine Drug Screens

- Use very specific tests (mass spectrometry?)
- Many metabolites
- APAP/Codeine-morphine, hydrocodone, hydromorphone possible
- Morphine and Hydrocodone- Hydromorphone possible
- Fentanyl and buprenorphine patches often negative

Urine Drug Screening: Practical Guide for Clinicians[1]

Federal Workplace Cutoff Values		
Substance	Initial drug test level (immunoassay) (ng/mL)	Confirmatory drug test level (GC-MS) (ng/mL)
Marijuana	50	15
Cocaine metabolites	300	150
Opiate metabolites	2000	2000
Phencyclidine	25	25
Amphetamines	1000	500
Methamphetamine	Incomplete data	500

Length of Time Drugs of Abuse Can Be Detected in Urine	
Drug	Time
Alcohol	7-12 h
Amphetamine	48 h
Methamphetamine	48 h
Barbiturate	
Short-acting	24 h
Long-acting	3 wk
Benzodiazepine	
Short-acting (e.g., lorazepam)	3 d
Long-acting (e.g., diazepam)	30 d
Cocaine metabolites	2-4 d
Marijuana	
Single use	3 d
Moderate use (4 times/wk)	5-7 d
Daily use	10-15 d
Long-term heavy smoker	>30 d
Opioids	
Codeine	48 h
Heroin (morphine)	48 h
Hydromorphone	2-4 d
Methadone	3 d
Morphine	48-72 h
Oxycodone	2-4 d
Propoxyphene	6-48 h
Phencyclidine	8 d

Summary of Agents Contributing to Positive Results by Immunoassay			
Substance tested via immunoassay	Potential agents causing false-positive result	Substance tested via immunoassay	Potential agents causing false-positive result
Alcohol	Short-chain alcohols (isopropyl alcohol)	**Cannabinoids**	Dronabinol
Amphetamines	Amantadine		Efavirenz
	Benzphetamine		Hemp-containing foods
	Bupropion		NSAIDs
	Chlorpromazine		PPIs
	Clobenzorex		Tolmetin
	l-Deprenyl	**Cocaine**	Coca leaf tea
	Desipramine		Topical anesthetics containing cocaine
	Dextroamphetamine	**Opioids, opiates, and heroin**	Dextromethorphan
	Ephedrine		Diphenhydramine
	Fenproporex		Heroin
	Isometheptene		Opiates
	Isoxsuprine		Poppy seeds
	Labetalol		Quinine
	MDMA		Quinolones
	Methamphetamine		Rifampin
	l-Methamphetamine (Vick's inhaler)		Verapamil and metabolites
	Methylphenidate	**Phencyclidine**	Dextromethorphan
	Phentermine		Diphenhydramine
	Phenylephrine		Doxylamine
	Phenylpropanolamine		Ibuprofen
	Promethazine		Imipramine
	Pseudoephedrine		Ketamine
	Ranitidine		Meperidine
	Ritodrine		Mesoridazine
	Selegiline		Thioridazine
	Thioridazine		Tramadol
	Trazodone		Venlafaxine, O-desmethylvenlafaxine
	Trimethobenzamide	**TCAs**	Carbamazepine
	Trmipramine		Cyclobenzaprine
			Cyproheptadine
Benzodiazepines	Oxaprozin		Diphenhydramine
	Sertraline		Hydroxyzine
			Quetiapine

1) Moeller KE, Lee KC, Kissack JC. Urine Drug Screening: Practical Guide for Clinicians. Mayo Clin Proc. 2008;83(1)66-76.

Information compiled by Keegan Harse, PharmD Candidate. June 2008.

Opioid Conversions

- Most comprehensive calculator https://opioidcalculator.practicalpainmanagement.com/
- Morphine 15 mg = oxycodone 10mg = hydromorphone 4 mg
- Tramadol-variable conversion recommendations (partial agonist)
  - Mainly NE and 5HT
  - Mu binding affinity 6,000 times less than that of morphine
- Tapentadol
- Methadone
- Cross-tolerance and equi-analgesic doses
- Drug-Drug Interactions

Fentanyl Patch Conversions

Initiating Fentanyl Patch (mcg/hr)	Morphine PO (mg/day)	Oxycodone PO (mg/day)
25	60-134	30-67
50	135-224	68-112
75	225-314	113-157
100	315-404	158-202
125	405-494	203-247
150	495-584	248-292
175	585-674	293-337
200	675-764	338-382
225	765-854	383-427
250	855-944	428-472
275	945-1034	473-517
300	1035-1124	518-562

Fentanyl (mcg/hr) to PO opioids	Morphine PO (mg/day)	Morphine IM/IV	Oxycodone PO	Hydromorphone PO	Hydromorphone IM/IV
25	60	10	30	7.5	1.5
50	120	23	60	15	3.5
75	180	38	90	22.5	5.7
100	240	53	120	30	8

Conversions are for education purposes only and clinicians should use sound clinical judgment on an individual basis.

Buprenorphine

- Butrans patch does NOT require special addiction licensing
- Partial mu-opioid agonist, kappa antagonist
- PO morphine:burprenorphine is 100:1 or 115:1
  - 20mcg/hr patch roughly equal to morphine PO 36-55mg/day
  - BUT start at 5mcg/hr and titrate (unless pt not opiate naïve, then 10mcg/hr)
- Butrans Patch 7 day matrix patch
  - Available in 5mcg/hr, 10mcg/hr, and 20mcg/hr
- Buprenorphine+ Nalaxone- Suboxone (X waiver)
- **Increased respiratory depression with other CNS depressants
- Adding opiates to buprenorphine patient-acceptable
- Adding buprenorphine to opiates- CAUTION
- Tolerance doesn't generally develop
- CYP3A4 and CYP 2D6 metabolism to norbuprenorphine (Caution with amiodarone, ketoconazole, erythromycin, and ritonavir)
- QTc prolongation (congenital, other QTc prolongation drugs, or >20mcg/hr patch)
- **CONCERN for surgery- continue buprenorphine through surgery
  - Increased risk of OD after 2-3 days after patch removal

AZ PDMP Specifics

- Dispensing pharmacists must now look at every PDMP (back 12 mo)
- PDMP per patient initially and at least quarterly (unless hospice or cancer)
- What meds are included?
  - All CII-CIV medications filled in outpatient pharmacies.
  - ANY suppliers (mail orders, etc) who ship meds into AZ ARE included in the website.
  - BUT methadone or treatment clinics, VAs, and IHS ARE NOT included
- Things to consider:
  - There may be a time delay in data availability that can be 7-14 days!
  - **If the patient did not pick up the script, it DOESN'T take it off the record (without the pharmacy providing the data to the state voluntarily)
  - Data should be available from April 2008
  - Used as **one tool** in making clinical decisions
- Common errors:
  - Date dispensed entered in DOB field
  - Mike vs Michael (Search by "begins with" and use "M")
  - Incorrect DOB provided to pharmacy (Use "search by 2 years")
  - Hyphenated last names (try each one separately)
  - Newly married or recent name change? (Must rely on patient information)
  - Spaces entered at the start of either the first or last name
  - Same script number on the same day displayed twice-likely transmission error
- Medical marijuana card holders have "MMC" (medical marijuana card) next to their name
- Most states have passed legislation for a similar site (Missouri only one not included), but many haven't started collecting data

Opioid Concerns

- Side Effects/Concerns
  - Dependence, sedation, respiratory depression, **constipation**, nausea, pruritis
  - Urinary retention, flushing, sphincter of Oddi pressure changes, hypotension
  - Hypogonadism, reduction of endogenous endorphins
- Renal Dysfunction
  - Caution with Morphine (neurotoxic morphine-3-glucuronide), hydromorphone (moderate impairment)
  - AVOID meperidine (normeperidine)
- Hepatic Dysfunction
  - Caution with morphine, hydrocodone (APAP), buprenorphine
  - AVOID meperidine, oxymorphone (mod-severe), methadone (severe)
- CYP metabolism-increased drug interactions
  - Cyp3A4-fentanyl, buprenorphine
  - Cyp 2D6-codeine to morphine, hydrocodone to hydromorphone, tramadol, oxycodone to oxymorphone
- Allergy vs Pseudoallergy
- Addiction vs Pseudoaddiction
- Hyperalgesia
- Street Value
- Wean- decrease by no more than 30% every 3 days

Patient Buy-In On Opiods

- Opioid pain medications do not treat the pain
- They block the brains perception of pain
- Long-term use often leads to:
  - Depression
  - Weight gain
  - Changes in hormones (6 that are vital for life)
  - Decrease in sex drive
  - Fatigue
  - Decrease in function
  - Development of tolerance-meds become less effective
  - Decreased coping skills-psychologically NEED the opioids for your pain
  - Fear and isolation
  - Increased complications as you age
  - Drug-Drug interactions (you can be doing well on a set dose for along time, with something as simple as an antibiotic that can put you into withdrawal and possible death)

Opioid Patient Education

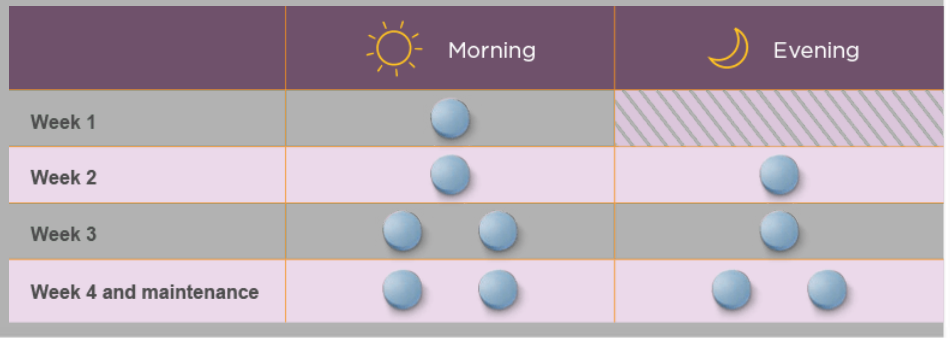
- Safe use
- Side effects (including death)
- BM every 2 days
  - consistent fiber recommended
  - powder with large glass of water
  - Polyethylene glycol 17g QD PRN if no BM the day before
  - Senna-docusate QD to BID
- What to do about missed doses
- Make a proactive plan for periods of increased pain
- Swallow whole and do not cut opioid patches
- Avoid hypnotics, anxiolytics, CNS depressants, illegal drugs, and alcohol
- Do not stop abruptly
- Selling or giving opioids away is illegal

Opioid antagonists

- Naloxone
  - > 50 MME/d
  - + BZD
- Naltrexone
  - Alcohol and opioid abuse
  - Improve mood
  - Decrease appetite

Low dose Naltrexone (LDN)

- LDN- reduce pain in inflammatory conditions
  - Fibromyalgia
  - Crohn's disease
  - multiple sclerosis
  - complex regional pain syndrome
- Anti-inflammatory properties on microglial cells- toll-like receptor-4 (TLR4) antagonism
  - found on microglia (which produce inflammatory and excitatory factors that can cause increase pain sensitivity, fatigue, cognitive disruption, sleep disorders, mood disorders, and general malaise-which can be neurotoxic).
- Potentially enhances endogenous opioid production
- LDN has antagonist activity on
  - mu, delta and kappa (lesser degree)
- Co-administered with opioid analgesics, dose is too low to compete
  - Synergistic effect on pain relief - less opioids and less adverse effects
- Additional inflammatory processes (food, environmental triggers)
- Contrave (bupropion 90 mg+ naltrexone 8mg)
- Studies indicate treatment for autoimmune conditions?



Question #3

- Patient, CS, tested positive for methamphetamine and you are prescribing oxycodone 10mg 4 times daily for failed back syndrome. There have been no other violations of her contract in the past 6 months at your clinic. Do you:
  - A. Cut her off of the oxycodone and discharge the patient
  - B. Wean her off the opioid pain medication
  - C. Have an open discussion with her
  - D. Call the lab for clarification
  - E. C and D

Pain Management- Car analogy[1]

- Imagine a car with four totally flat tires
- “Successful” treatment of a person with chronic pain
  - Learn how to independently manage their condition
  - Maximize participation in everyday life activities
  - Minimize discomfort and side effects
  - Avoid other bad consequences of treatment
- 1 tire=Medications
- Other 3 tires?
- Living a full life with pain = patient taking an active role
- Each person’s needs differ.
  - Learn various tools
  - Determine when to use what tool
  - Assess who they want on their team
  - Maintain car
- Pain takes a team effort, with the patient taking an active role, to live a full life despite pain
- http://www.theacpa.org/pain-management-tools/videos/support/

Patient-Provider Relationship

- Individualized pain management
- Communicate with your patient and providers
- Look when you communicate
- Listen to your patient and establish functional goals
- If opiates prescribed, develop long-term plan and use patient provider agreements
- Monitor for aberrant behavior – TALK IT OUT
- Is there another possible explanation
- Don’t let past experiences or patients cloud your judgement
- Prescribe the right drug for that patient’s pain
    - AVOID large quantity of IR opioids (“Dr Feelgood”)
- Explain your rational
- AVOID negative words or attitudes
- Counsel patients appropriately
- Allow enough time for these appointments
- DOCUMENT EVERYTHING

Improving Opioid Prescribing

- 77% ask for records release from prior pain provider
- 44% ask for their current pain level at each visit
- 16% routinely order serum testosterone (free and total) level early on for long-term opioid use
- 67% call the lab to clarify urine drug screen results
- 66% abnormal urine screen results in patient's chart
- 71% document opioid agreement violations and actions the provider took

Improving Opioid Prescribing

- 42% think a patient is a drug abuser if they request a certain med
  - Histamine or N/V from morphine
  - Poor metabolizers?
- 69% were only comfortable prescribing opioids to patients who can manage them
  - Another responsible caregiver?
  - Active addiction-refer
- 58% comfortable prescribing only if pain ID'd
  - Chronic back pain-only 15% cause found
  - HA, fibromyalgia- rare to find pain generator
  - No reason to avoid opioids
- Opioid dependence vs addiction (loss of control, continue despite harm)
  - 32% write "opioid dependent" for chronic opioid use
  - 40% expect addiction for patients their prescribe opioids regularly
- 50% document that they "detoxed" the patient, once opioids not needed
  - X waiver needed
  - Taper or Wean
- 43% recommend patients not drive on opioids
  - After 1-2 weeks, no difference in psychomotor and cognitive performance

Improving Opioid Prescribing

- 69% will not speak to a family member without a release
  - HIPAA-We do not provide info, but we can listen
- 23% obtain UDT at each visit
  - Unexpected more effective
- 70% provide prescription at an office visit
  - Long-term, stable patients- multiple scripts (Max 90 days)
- 61% reduce opioid amount for sedation or constipation
  - Sedation-transient (modafinil or methylphenidate?)
  - Constipation- persistent (proactive daily bowel regimen)
  - **INDIVIDUALIZED CARE
- 46% discharge a patient after violating “contract”
  - HAVE A DISCUSSION WITH THEM
  - Absolute “NO-NOs”- diversion, continuing – imminent risk, active addiction
- 38% expect to gradually increase opioid doses d/t tolerance

Standards of Practice for Opioid Prescribing

- Full history, physical regularly
- Controlled Substance Agreement or Patient Provider Agreements
- Establish analgesic and functional goals of therapy and reassess regularly
- Set firm boundaries and consequences
- Recognize, document, and address aberrant behavior
- Frequent COMPLETE panel urine drugs screen (pain management patients)
- PDMP every visit
- Scripts weekly if needed for safety
- Naloxone prescribing (pharmacists can, as well)
- Consult other providers
  - Specialists
  - Complementary Medicine-Acupuncture, Massage, Naturopath, Functional Medicine

Tips For Obtaining Patient Buy-In

- I want to treat the cause of your pain
- Ask the patient their thoughts and preferences
- This is your car, and I am only a passenger her to help you navigate
- Pain meds can only fill up one tire. What would you like to try for the other three tires?
- I want to work with your develop a plan and functional goals to determine what is working and what may need more modifications
- Follow up with previous plan
- What difficulties are you experiencing with …?
- Do not hesitate to say that … isn't your area of expertise, but you can arrange them to see those that you trust
- No two pain patients are alike and shouldn't be treated the same
- Think outside of the box

Vitamin D

- Low vitamin D levels associated with increased:
  - Muscle pain
  - Joint pain
  - Fatigue
  - Headaches
  - Difficulty sleeping
- Determine current dose (Vit D, Fish Oil, Calcium, MVI, herbals)
- Monitor initially (bone disorder)
- Need Ca and Phos (avoid if high), sCr if not last 6 months
- Supplementation
  - make sure to add what they are taking if substitution
  - Leave MVI and Calcium alone if continuing
  - Keep track of total daily values from all sources
- Recheck 3 months after dosage change
- Every 1-2 years once stable or if pain worsens with no known cause
- Goal 40-80 ng/ml blood levels (I prefer 50-60ng/ml)
- May discontinue?

Starting Vitamin D Dosing if no prior supplement		
Vit D level (ng/ml)	Cholecalciferol D3 (OTC)	Ergocalciferol D2 (RX)
0-10		50,000 units twice weekly x 2 months
10-20	5000-6000 units daily	50,000 units weekly x 2 months
20-30	3000-4000 units daily	50,000 units every 2 weeks
30-40	2000 units daily	
40-50	1000 units daily	

Pharmacogenetic testing

- PK biomarkers -CYP2D6, CYP2C9, CYP3A4, CYP3A5, and CYP2B6
- PD biomarkers included are OPRM1 and COMT
- Poor vs rapid metabolizers
- Poor CYP2D6 metabolizer-like having a CYP2D6 Inhibitors
- APAP/Codeine + Paxil= no conversion to morphine= less effective

Table 2. Common Drugs Used in Pain and Their Metabolism Pathway

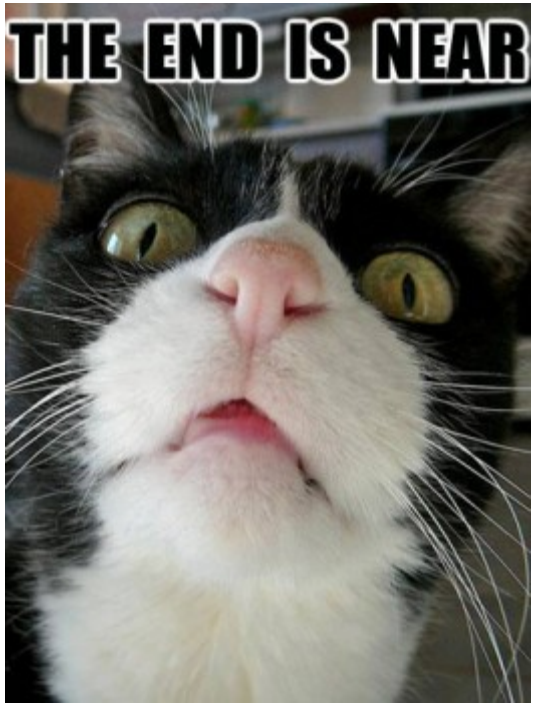
CYP2D6	CYP2C9	CYP3A4/5	CYP2B6
Amitriptyline	Celecoxib	Codeine	Methadone
Codeine	Flurbiprofen	Diazepam	
Desipramine	Ibuprofen	Fentanyl	
Diazepam	Meloxicam	Hydrocodone	
Hydrocodone	Piroxicam	Oxycodone	
Imipramine		Methadone	
Methadone			
Nortriptyline			
Oxycodone			
Tramadol			
Venlafaxine			

Table 3. Clinical Consequences of Opioid Cytochrome P450 Drug Interactions

Opioid	CYP2D6 Inhibition or Patient is PM	Patient is CYP2D6 UM (enzyme not inducible by other drugs)	CYP3A4 Inhibition	CYP3A4 Induction	CYP2B6 Inhibition or PM
Codeine	Decreased analgesia (less morphine produced); UDS may show no metabolite present	Increased analgesia and toxicity (more morphine produced)	Increased analgesia and toxicity (more codeine and possibly more morphine)	Decreased analgesia (decreased codeine and morphine)	N/A
Hydrocodone	Possible decreased analgesia and/or increased toxicity (more hydrocodone and less hydromorphone produced); UDS may show fewer or absent metabolite present	Possible increased analgesia and toxicity (more hydromorphone produced); UDS may show fewer or no parent molecules present	Increased analgesia and toxicity (more hydrocodone and possibly more hydromorphone)	Decreased analgesia (decreased hydrocodone and hydromorphone)	N/A
Methadone	Increased analgesia and toxicity risk	Decreased analgesia risk	Increased analgesia and toxicity risk	Decreased analgesia risk	Increased toxicity (QTc prolongation risk)
Oxycodone	Possible decreased analgesia and/or increased toxicity (more oxycodone and less oxymorphone produced); UDS may show fewer or absent metabolite present	Possible increased analgesia and toxicity (more oxymorphone produced);UDS may show fewer or no parent molecules present	Increased analgesia and toxicity (more oxycodone and possibly more oxymorphone)	Decreased analgesia (decreased oxycodone and oxymorphone)	N/A
Tramadol	Decreased analgesia and increased risk of pro-serotonergic side effects, including a decrease in seizure threshold	Increased analgesia and toxicity	Slight increased analgesia and risk of toxicity	Possible decreased analgesia	Slight increased analgesia and risk of toxicity
Hydromorphone	N/A	N/A	N/A	N/A	N/A
Morphine	N/A	N/A	N/A	N/A	N/A
Oxymorphone	N/A	N/A	N/A	N/A	N/A
Tapentadol	N/A	N/A	N/A	N/A	N/A

NA, not applicable, PM, poor metabolizer; UDS, urine drug screen; UM, ultra rapid metabolizer

Fibromyalgia Guidelines



- Nonpharmacological with active patient participation
  - Aerobic exercise, Tai Chi, Yoga
  - CBT, Mindfulness
  - Possible acupuncture, chiropractor, and therapeutic massage
  - FDM??
- Other triggers: mood or sleep disorders (CPAP??)
- Duloxetine or milnaciprin
- Amitriptyline and cyclobenzaprine
- Pregabalin or gabapentin
- Recommend AGAINST opioids- often makes it worse
- Tramadol- only 1 RCT with positive results-short-term?
- Avoid BZD or zolpidem, etc

Myofascial Pain

- WORK IT OUT
- NSAIDs
  - Oral
  - Diclofenac patch
  - Cox-2 inhibitors
- Lidocaine patch/cream
- Tizanidine, cyclobenzaprine, and BZD
- Duloxetine
- Sumatriptan
- Tramadol?
- TENS, Trigger point inj, manual therapy, US, steroid injections

Neuropathic Pain

Geriatric Pain

- APAP (For ALL…except liver failure)
- NSAIDs- risk vs benefit (+ PPI)
- Opioids
- Gabapentin, Pregabalin (decrease dose for renal dysfunction)
- Topical lidocaine, diclofenac, capsaicin, menthol
- AVOID cyclobenzaprine, metaxalone, orphenadrine, methocarbamol, carisoprodol, chlorzoxazone
- AVOID TCAs (amitriptyline, nortriptyline, doxepin)
- Adequate therapeutic trial before D/C

ESRD

- The recommended medications of choice for ESRD include: tapentadol, APAP, antidepressants, TCAs, and potentially Savella (although half-life may be increased). "Opioids primarily undergoing hepatic phase II metabolism that yields inactive metabolites (such as tapentadol) are highly protein bound, have larger molecular weights, and have higher lipophilicity (to avoid being dialyzed), should be considered first in this population of patients."
- It is recommended to avoid duloxetine and venlafaxine.

Liver Dysfunction

- APAP – 2-3 g per day
- AVOID NSAIDs (risk of varicea; and other upper GI bleeding, renal failure, and diuretic resistant ascites)
- Gabapentin and pregabalin
- TCAs-low dose and gradually titrate
- AVOID carbamazepine
- Fentanyl and hydromorphone
- Methadone-avoid with alcohol

Pregnancy

- Best time to consider non-pharmacologic approaches
- APAP
- NSAIDs-first and early second trimester
- Opioids
- Sumatriptan
- Low-dose naltrexone NOT recommended
- Pregabalin and gabapentin-risk vs benefit
- Duloxetine and TCAs- risk vs benefit
  - Avoid parexitine, fluoxetine, clomipramine
- AVOID valproic acid

Smoking

- Decrease blood flow
- Pro-inflammatory cytokine release
- Decrease bone integrity
- Drug Interactions
- Risk of addiction
- Poor Coping Skills

Other Potential Lab Work

- Vitamin D
- Hormone Testing
  - Testosterone
    - Low levels decrease efficacy of opioids, reduce energy, strength, motivation, libido, sleep, and appetite
  - Pregnenolone
    - Opioids suppress this
    - CNS protection and regeneration properties
  - early AM cortisol
    - High-uncontrolled pain
    - >1mcg/dL may be life-threatening
  - ACTH-uncontrolled pain
    - Biomarker for centralized pain (high or low)
  - DHEA
    - precursor for testosterone, progesterone, and estrogen
    - Neurosteroid with CNS regenerative properties
  - Progesterone-reduces pain and symptoms of centralized pain
- Replace and recheck every 2-4 weeks, increase daily dose over 6-8 weeks

MOST COMMON REPLACEMENTS

HORMONE	USUAL DAILY DOSAGES
Hydrocortisone	5 to 15 mg
Pregnenolone	100 to 300 mg
Testosterone	Male:10 – 100 mg Female: 2.5 – 25 mg
Dehydroepiandrosterone (DHEA)	100 to 300 mg

- ➢ Medroxyprogesterone
  - ✓ 20 to 40 mg a day

Hormones & Pain Care Information Network

Patient Empowerment

- www.PainToolkit.org
- What is their responsibility?
- Maintain a pain diary or log
  - Apps
  - See handout
- Bullet journaling and bullet journal charting
- Active involvement in medication options
- Encourage development of other tools
- Explain everything in detail
- Encourage further education (reputable sources)
- Join support groups-get involved
- Celebrate successes

Resources

- Patient
  - American Chronic Pain Association www.theacpa.org
    - https://www.theacpa.org/wp-content/uploads/2018/03/ACPA_Resource_Guide_2018-Final-v2.pdf
  - Pain Toolkit www.paintoolkit.org
  - National Fibromyalgia and Chronic Pain Association www.fmcpaware.org
  - MedLine Plus: Drugs, Herbals, and Supplements - http://www.nlm.nih.gov/medlineplus/druginformation.html
  - American Society of Health-System Pharmacists: http://www.safemedication.com/
  - Understanding Pain in Less than Five Minutes, and What to Do About It: https://www.youtube.com/watch?v=C_3phB93rvI
  - Back Pain Video:
  - https://internationalpain.org/
- Provider
  - www.painEDU.org
  - www.PainDr.com - Resources
  - Substance Abuse and Mental Health Services Administration (SAMHSA) http://www.samhsa.gov/atod
  - American Academy of Integrative Pain Management http://www.aapainmanage.org/
  - www.practicalpainmanagement.com
  - The Pain Practitioner
  - Attend conferences
  - Read one pain article a week

Mind-Body Resources

- Decrease pain and anxiety
- Improve focus and sleep
- Mindfulness apps
  - Mindfulness Training (Apple only)
  - Mindfulness Coach –VA
  - Remindfulness
- Meditation apps
  - Insight Timer
  - Calm
  - Omvana
  - Stop, Breathe, Think

Medication Affordability

- Encourage the patient to print out a “List of Formulary”
- More restrictions on opioids
- More Prior Authorizations Needed
- Relaxing restrictions on Butrans (buprenorphine patch)
- There are more options than JUST short-acting opioids

After Visit Summary

- **OPIOIDS AND DRIVING**
- "As of 2018, Minnesota and Wisconsin consider driving while taking **any amount** of a Schedule II drug as driving “while impaired” or “under the influence.” A patient/driver could face legal consequences even if the patient has a legitimate prescription and may not actually be impaired."

- **Chronic Pain Education and Action Plan Development**
- Chronic pain analogy from The American Chronic Pain Association and the Paintoolkit.org (summarized): Chronic pain is a medical condition that can be very frustrating. Pain triggers stress, which triggers more pain. It is common to focus more on the pain and not be able to see what is important and the small progress that you are making. Having chronic pain is like being a car with four flat tires. Medical treatment only puts air in one of our tires. You still have three flat tires and can't move forward. “Successful” treatment of chronic pain is when you have learned how to independently manage your pain to lead a productive, satisfying, and happy life.
- Living a full life with pain requires that the person take an active role in the recovery process, and working with your providers to get what is needed to fill up the other three tires. Biofeedback (pain psychology), counseling, physical therapy, occupational therapy, injections/procedures, medical equipment (TENS unit, etc), massage, myofascial work, fascial distortion model (FDM), chiropractor, nutritional changes, acceptance, being patient, teamwork, getting involved in a support group, relaxation/meditation, exercise, pacing of daily activities, pain journaling, prioritizing, setting goals, tracking progress, and a host of medical modalities are a few examples of the ways we can fill those other tires (**www.paintoolkit.org/tools and https://theacpa.org/Ten-Steps**). The combination of therapies and interventions needed may differ among people and at different times, but it is your responsibility to actively participate to learn and use the tools needed for your pain toolkit to fill up all four tires and to maintain it (adjusting if necessary). Pain management is complex and requires multiple tools. It takes a team effort, with YOU taking an active role, to live a full life in spite of chronic pain. Developing strategies, setting obtainable long and short term goals, and journaling the major changes in pain, diet, life stressors, etc can help to start making those baby steps in a positive direction to regain control of your life.

Recommendations

- Listen to your patients
  - Work through problems and concerns
  - Get buy-in
  - Give options when possible
- Controlled Substance Agreements
- Regular visits-every week, if necessary
- LABS
  - urine drug screens-often and random
  - cortisol, pregnenolone, and testosterone- early morning fasting blood draw
  - Vitamin D
- Refer – Pain psychology, psychiatry, addictionology, PT, OT, Massage

Conclusions

- Pain management is subjective
- Treating the cause is ideal
- MANY DRUGS choices
- Do your research
- Need functional goals
- Treatment plans should include all pharmacologic and non-pharmacologic options
- Refer the patient
- Documentation is the key
- Re-evaluate the plan regularly
- Complete the loop of communication
- Continued education for you and your patients

Congratulations…YOU MADE IT TO THE END

- Thank you for your dedication to patients
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