Learning Objectives

- Scope of problem, including long term care applications
- How to best address the problem: education, evidence based prescribing, PDMP as a tool
- Best practice treatments of pain: acute and chronic
- Best practice PDMP use/function
- Best practice SNF/LTCF feedback loop with physicians
- Best practice on avoiding co-prescribing
- Best practice naloxone usage

What is a Narcotic/Opioid?

- Drugs that affect the brain’s own natural pain relieving receptors
- Used for thousands of years was opium, a residue of the poppy plant
Progression to Modern Narcotics

- 1830's - Codeine was chemically created by altering opium
- 1850's - Morphine was created from opium
- 1890's - Bayer Pharmaceuticals chemically altered morphine trying to find a less addicting opiate. --- They created Heroin.

Every single time a new opioid formulation was created, it was thought to be less addictive than predecessors, but most times was more addictive.

Advertisements

1850's

1860's

1890's

The U.S. makes up 5% of the world's population
But, consumes 80% of the prescription opioids
Scope of Problem

- 64,000 opioid overdose deaths in 2016
- (<7,000 deaths so far in all military operations since the war on terror -2001)
- 91 US deaths/day (almost 4/hr)
- Now leading cause of accidental death
- US life expectancy down 3.5 months

Scope of Problem

- 400% increase in amount of opioids prescribed
- Over 400% increase in overdose deaths
- Over 9 BILLION vicodin Rx'd last year, approx 2/3 are “Leftovers”
- 50% of opioid starts from “Leftovers”
- 80% of heroin users start with Rx

Scope of Problem

- Teens that use Rx opioids are 20 times as likely to use heroin
- Rx Opioids seen as “Safe”
- Supply has increased explosively, and diversion from LTC has contributed somewhat
- Pills are “Stairway to Heroin”(and fentanyl)
Fentanyl

Counterfeit Opioids

Drug Cartels
The Dilemma

- Patient Rights Groups:
- JCAH:
- Press-Ganey:
- Attorneys: Treat Pain Aggressively!

- State Licensing Boards:
- DEA/Law Enforcement:
- The Press:
- Attorneys: Don’t Feed Addiction!

Some Historical Background

- 1996: OxyContin approved by FDA
  - Claimed “non-addictive” due to extended release
  - Advocated use in chronic non-cancer pain
- 1996: APS promotes pain as “5th Vital Sign”
- 1998: JCAHO and CMS adopted pain as the “5th Vital Sign,” mandated that hospitals enforce it
  - Not implemented until ~2001

Why Now???

- Prescriptive cultural change
- Societal cultural change
- Huge increase in supply (both prescription and illicit)
Question #1

Should we be using chronic opioid therapy at all??

What are the consequences?

The Cause of the Problem

The prescription opioid addiction epidemic is an iatrogenic disease based on multiple provider misconceptions:

“Opioids are the best drugs for pain”
“There’s an infinite dose-response curve”
“My patients aren’t abusing”
“Addiction is a moral failing”
“It’s impossible to ID a potential abuser”
The Reality - Physiological

This is the basis for opioid tolerance and hyperalgesia. Initially, opioids help pain; later, they tend to worsen it.

The Reality - Clinical

Multiple meta-analyses on opioids in chronic pain have been done:

<table>
<thead>
<tr>
<th>Mo.</th>
<th>Evidence of Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>Good</td>
</tr>
<tr>
<td>2-6</td>
<td>Weak</td>
</tr>
<tr>
<td>&gt; 6</td>
<td>None</td>
</tr>
</tbody>
</table>

- ~ 15%, less than patients consider effective
- No decent studies > 6 mo
- Longer studies < 6 mo tend to have less benefit

Do Higher Doses Work for More Severe Chronic Pain?

- Numerous large-scale studies show this is not true.
- Patients on high doses have:
  - More pain, disability, psychological distress
  - Worse quality of life
  - Lower probability of recovering from chronic pain
  (NOTE: These studies have selection bias, but they all show that opioids are not effective at what they are being prescribed to do)
- More than linear ↑ in annualized mortality/overdose:
  - at 100 MMEs, risk ratio 8.8 x normal
  - at 200 MMEs, risk ratio 24 X normal
- NOTE: Rofecoxib (Vioxx®) risk ratio was 1.9 x normal, and it was taken off the market!
So why do patients say they work??

- The Reward System
  - Opioids bind in the VTA, causing it to release dopamine on the nucleus accumbens
  - The nucleus accumbens then affects the motivation system, increasing the drive to repeat whatever action caused its stimulation
  - Continued stimulus strengthens the drive

So why do patients say they work?

AmeriTox data: 12 mo: 400,000 tests
61% showed aberrant behavior:
- 38% Prescribed drug not present
- 31% Non-prescribed controlled substances
- 13% Illicit drugs
- 17% Levels > 2 std. dev. from expected

And these patients knew they could be tested!

Also possible:
- Linus' blanket
- Reverse placebo effect

So what is the answer?
POP = Heroin

• Prescription Opioid Pill Equals Heroin
• Treat it like a bottle of heroin

The Answer: Cultural Shift of Physicians and Patients

Prescriber Education
• Treat the cause first and foremost
• Build proper patient expectations
• Non-narcotic Tx, low-euphoria opioids
• Abuse risk stratification
• Evidence-based MEB-driven guidelines
• MEB guideline mandated CME
• Wise use of tools (PDMP), reform/mandate

The Wisconsin Prescription Opioid Reform Strategy

• Commonly seen as leading the nation
• Legislation/regulation that fosters cultural change from within, not just top down
• Currently working with and being studied by PEW Charitable Trust as a national model
The Wisconsin Prescription Opioid Reform Strategy

- Started in 2014 with NGA Best Practice Policy Academy for Reducing Prescription Drug Abuse
- Close collaboration with Rep Nygren (Hope Agenda Legislation) and Attorney General Schimel
- Board promulgated evidence-based best-practice guidelines
- Targeted CME to reinforce guidelines
- PDMP mandatory review only after PDMP IT reforms
PDMP - What is It, What’s the Best Way to Use It?

Data on all dispensed controlled substances

Analysis of total dosage (MME), mapping, alerts

Alerts - High dosage, benzo co-prescribing, overdose and law enforcement (theft, or arrest)

Configurability, EMR integration

Who can access (primary and delegate)?
Who Is Permitted to Be a Delegate?

- Almost anyone that a doctor, nurse, or pharmacist allows/trusts to do so
- Easy to do so
- Any LTCF clerk or CNA could pull PDMP data to be reviewed by other staff

How to Use the ePDMP

- Usage trail starts at dispensing - (use may occur in LTCF’s before logged in to facility, but record exists in ePDMP within 24 hours of being dispensed)
- Identify use and pattern of use on scheduled and PRN meds
- Learn to recognize concerning patterns (for either abuse or diversion)

Abuse risk stratification

Identifying Opioid Abuse Risk in Chronic Pain
(Available on WMS CME website)

Low: Low-med euphoria opioids
Mod: Low-euphoria opioids
High: Refer to pain management
Very high: Refer to pain management
Unacceptably high: Non-opioid Tx only
Not all opioids are created equal

The McNett Scale of Opioid Euphoria

**Low**
- buprenorphine (Butrans), tapentadol (Nucynta), tramadol
- nalbuphine (Nubain), butorphanol (Stadol)
- methadone
- fentanyl (transdermal)
- codeine, hydrocodone, morphine
- 
- fentanyl (sublingual)
- 
- oxycodone, oxymorphone (Opana)

**High**
- hydromorphone (IV), meperidine, heroin

What about Press-Ganey??

Keys:  
- Build appropriate expectations
- Time horizon for opioid Tx
- Low euphoria opioids = easy weaning
- Pleasing a drug-seeker is feeding addiction, which is unethical
- As expectations standardized, all doctors will have to deal with some dissatisfaction, P-G percentiles will say fairly constant

Common Alternatives to Opioids

- Acetaminophen
- NSAIDs (acute, inflammatory)
- SNRIs: venlafaxine, duloxetine, milnacipran
- TCAs: desipramine, amitriptyline, nortriptyline
- Anticonvulsants: gabapentin, pregabalin, topiramate, carbamazepam, etc.
- Topicals: lido, NSAID, capsaicin
- Procedures: blocks, epidurals, facet block
- PT, OT, braces, stimulators
- CBT, hypnosis, meditation, acupuncture
Non-narcotic Treatment of Acute Pain

What is Pain?

- Perceptual awareness of stimuli
- Perception increased with psychiatric comorbidities
- Perseveration/distraction
- Color study (red/blue on temp. pain)

Non-Pharmacological Treatment of Pain

- CBT (Cognitive Behavioral Therapy)
- Movement based (Yoga/Pilates/exercise)
- Treatment of psychiatric co-morbidities
- Meditation/relaxation/guided imagery
- Massage
- Complementary/alternative medicine
- Biofeedback
- Breathing/mind body integration
Cognitive Behavioral Therapy

- Used 1st to treat mood disturbances, now used to treat chronic pain
- Structured self-management intervention
- Cognitive (distraction/guided imagery/cognitive restructuring)
- Behavioral (activity pacing/pleasant activities/relaxation training)
- Coping skills taught via clinical instruction/home practice
- 8-12 sessions

Alternatives to opioids in Acute Pain
Physical Therapy

- Thermal
- Electrical
- Mechanical traction
- Manual treatments
- Phoresis
- Bracing
- Exercise

Alternatives to opioids in Chronic Pain
OT approaches may be helpful

- Health Promotion to use skills to full capacity
- Prevent disability
- Maintain functionality/capabilities
- Establish new abilities to replace lost ones
- Modify environment to maximize function with lost abilities
Alternatives to opioids in Chronic Pain

Interventional approaches

- Blocks helpful, though less so
- Corticosteroid injections (epidural, SI, facet, other joints)
- Nerve ablations (knees, facets, SI joints, etc.)
- Adhesiolysis
- Spinal stim
- Intrathecal pumps (baclofen, ziconitide)
- Etc. (discectomy)

Alternatives to opioids in Acute Pain

Acetaminophen

- Highly effective, despite OTC status
- IV now available but pricey
- Cochrane:
  - APAP 500 + ibuprofen 200 is 3 times as likely to cut postop pain in half as 15 mg of OxyIR! (NNT = 1.6 vs. 4.6)
- Dosing:
  - Acute: up to 6 g/d
  - Chronic: try to keep < 3 g/d, never > 4 g/d
  - Beware of combination opioids w/ APAP
- Avoid if poor liver function, heavy drinker
  - ↑ LFTs a relative contraindication, ↑↑ absolute

Alternatives to opioids in Acute Pain: NSAIDs - General Considerations

- Anti-inflammatory, some analgesic effects
  - Best for OA, autoimmune arthropathy, etc.
  - Little if any benefit for chronic non-inflammatory pain: avoid
- Paralyze renal compensatory mechanisms
  - Constriction of efferent arteriole is prostaglandin-dependent
  - Avoid if ≥ Stage II CKD
  - Consider APAP, tramadol
Alternatives to opioids in Acute Pain

NSAIDs - ADRs

- Can cause ulcers.

  **Indications for gastroprotection:**
  - Hx ulcers, dyspepsia
  - Hx neuropathy
  - > 50 yo
  - DM

- Contraindicated if:
  - Bleeding disorder
  - Anticoagulation
  - Hx bleeding ulcer
  - ≥ Stage III kidney disease
  - ASA allergy

Alternatives to opioids in Acute Pain

NSAIDS commonly used

- Nonacetylated: salsalate, diflunisal, choline Mg trisalicylate
- Propionic acids: ibuprofen, naproxen, ketoprofen
- Indoles: indomethacin, sulindac, tolmetin, etodolac
- Others: diclofenac, meloxicam, piroxicam, nabumetone, ketorolac (available IV)
- Cox-II: celecoxib
  
  If tolerance develops, may try changing to a different class.

Alternatives to opioids in Acute Pain

Anticonvulsants: Physiology

- α-2-δ ligands (gabapentin, pregabalin)
  - Presynaptic inhibition by ↓ neurotransmitter release
Alternatives to opioids in Acute Pain

Anticonvulsants: Physiology

- Na channel agents

  • α-2-δ ligands
    - gabapentin (Neurontin)
    - pregabalin (Lyrica)
  
  • Na channel agents
    - carbamazepine (Tegretol)
    - valproic acid (Depakote)
    - lamotrigine (Lamictal)
    - levetiracetam (Keppra)
    - tiagabine (Gabitril)
  
- AMPA Receptor Blocker
  - topiramate (Topamax)

**NOTE:** Agents of each type can’t be used together but can be used with one of the other types

Alternatives to opioids in Acute Pain

Anticonvulsants commonly used for pain

- α-2-δ ligands
  - gabapentin (Neurontin)
  - pregabalin (Lyrica)

- Na channel agents
  - carbamazepine (Tegretol)
  - valproic acid (Depakote)
  - lamotrigine (Lamictal)
  - levetiracetam (Keppra)
  - tiagabine (Gabitril)

- AMPA Receptor Blocker
  - topiramate (Topamax)

**NOTE:** Agents of each type can’t be used together but can be used with one of the other types

Alternatives to opioids in Acute Pain

Anticonvulsant ADRs

- α-2-δ’s: drowsy, weight gain, dizzy, edema
- Topiramate: weight loss (>>) cognitive dysfunction, paresthesias, fatigue, taste change (esp. soda), metabol acidosis (→ osteoporosis, kidney stones)
- Carbamazepine: bone marrow suppression, rash (poss SJS), drowsy: need to check CBC, drug levels
- Lamotrigine: rash (poss SJS), drowsy, dizzy, vision, incoordination
- All can cause birth defects
Alternatives to opioids in Acute Pain

Topicals
- Topicals work best for superficial pathology
  - NOTE: occlusive seal ↑ absorption 10-40x!
- Lidocaine (Lidoderm)
- NSAIDs (Voltaren patch/gel/liquid, Flector patch)
- Capsaicin (mostly OTC, except Zostrix)
- Salicylates (OTC: “BenGay”)
- Compounded (Rx: mix of multiple meds)
- Advantages: lack of systemic ADRs
- Disadvantages: $$$, often limited benefit, poss. messy

Alternatives to opioids in Acute Pain

Integrative Medicine
- Manipulation: chiro, osteo, PT, nurse
- Energy Medicine: therapeutic touch, Reiki, homeopathy, etc.
- Physical modalities: massage, yoga, tai chi, qi gong, etc.
- Acupuncture, acupressure, suction
- Music, light, aromatherapy
- Meditation, mindfulness, distraction, etc.

Alternatives to opioids in Acute Pain

Non-pharmacologic
- Interventional: regional blocks
- Psychological
  - CBT: proven beneficial (esp. for poor copers)
  - Distraction: ↑ desc. inhibition at dorsal horn
  - Mindfulness meditation: may provide similar benefit
  - Biofeedback: shown to ↓ pain (more for chronic)
  - Hypnosis: effective for susceptible patients
  - Other psych Tx may help: grief, family, anxiety/depression
Alternatives to opioids in Acute Pain

Pre-emptive analgesia before surgery

May include any/all of:

- **Preoperative**
  - Celecoxib, gabapentinoid, steroids

- **Intraoperative**
  - Incisional block, regional block, ketamine

- **Postoperative**
  - Celecoxib, gabapentinoid, α blockers, APAP, regional/spinal/epidural block

Check out: www.postoppain.org

Alternatives to opioids in Acute Pain

Effects of pre-emptive analgesia

- Dramatic reduction in opioid need
  - Many patients get out without using any

- Better outcomes

- Markedly improved HCAHPS Scores

Non-narcotic Treatment of Chronic Pain
All of the above, plus…

- Virtually all non-narcotic acute pain treatments can be used chronically.
- Opioids, however, have imperceptible benefit in chronic pain.
- Chronic pain often has a neuropathic component (neuroplasticity).
- APAP requires a lower dose (3 g./day).
- Regional blocks less applicable.
- NSAIDs: only for inflammatory conditions (RA, etc.) and OA.
- Psych Tx’s probably more important.

Alternatives to opioids in Chronic Pain

TCA/SNRIs – mechanism of action

- Reduce pain by increasing NE, 5-HT at dorsal horn; hyperpolarize nerve.

Alternatives to opioids in Chronic Pain

SNRIs commonly used

NOTE: depression commonly seen in chronic pain.

- Duloxetine (Cymbalta)
  - Generally well-tolerated (80%). Avoid if ↑ LFTs.
- Venlafaxine (Effexor)
  - Lots of ADRs: venlafaxine ER less so.
  - Wicked withdrawal syndrome: taper, can use fluoxetine.
  - Oddly, desvenlafaxine (Pristiq) doesn’t seem to work.
- Milnacipran (Savella)
  - High incidence CV ADRs (effective dose ↑ pulse 8 BPMs!)

- Opioids, however, have imperceptible benefit in chronic pain.
Alternatives to opioids in Chronic Pain
TCAs commonly used

- Amitriptyline – sedating, lots of cognitive dysfunction
- Nortriptyline – sedating, possibly fewer ADRs
- Desipramine – pure NE (safe w/ SSRIs, tramadol)
  - Some SSRIs (esp. Paxil, Prozac) ↓ metabolism
  - ↓ muscarinic effects, so fewer cognitive ADRs:
    - Watch for ↑ QTc
    - Avoid in elderly: All except desip are on the Beers Criteria

Benzodiazepines and Opioids

- Risk of overdose increases 400% when co-prescribed
- Alert sent in PDMP
- Use extreme caution when thinking of co-prescribing

Narcan/Naloxone

- Illustration showing the binding and active sites of opioids and naloxone at the receptor level.
Narcan Availability and Protocols

- Can be used in LTCF’s to save lives
- Assisted living - possible substance abuse/active opioid users/abusers
- SNF’s - accidental overdose (wrong resident/wrong dose/multiple drug interaction)

Pain Won’t Kill You - But Painkillers Will!
Thank you for your time & attention!