

The Opioid Crisis: How it is Manifesting Itself in Pain Management

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Objectives

- Discuss myths that surround treating pain
- Describe various types of pain
- Discuss the opioid crisis and obstacles it creates
- Describe pain management techniques

The Opioid Crisis

- ▶ How big is the problem?
 - ▶ 42,000 deaths due to opioid overdoses in 2016 according to the CDC
 - ▶ President Trump - Manchester, NH - March 2018
 - ▶ Working with Congress to find \$6 billion in new funding for 2018 and 2019 to fight the opioid crisis
 - ▶ Seeking to cut opioid prescriptions by 1/3 over 3 years by changes in federal programs
 - ▶ Medicaid
 - ▶ Medicare

<http://www.reuters.com/article/us-usa-trump-opioids/as-us-opioid-crisis-grows-trump-calls-for-death-penalty-for-dealers-idUSKBN1GV2C>

The Opioid Crisis

- ▶ According to the Morbidity and Mortality Weekly Report from March 30, 2018
 - ▶ From administrative data from 31 states and Washington DC
 - ▶ Overdoses increased by more than 20% from 2015-2016
 - ▶ Synthetic opioids (e.g. fentanyl) caused a doubled overdose death rate from 2015-2016 (3.1 to 6.2 per 100,000)
 - ▶ Prescription Opioids increased by 11% in that same period

The Opioid Crisis - Long-Term Care

- ▶ NIH is doubling funding to find a solution more quickly
- ▶ The US Surgeon General recently issued an advisory about Naloxone
 - ▶ The first from that office since 2005
- ▶ The NIH pledged to double funding on pain and opioid addiction from about \$600 million in 2016 to \$1.1 billion this year
 - ▶ Long-term study on pain and progression from acute to chronic pain after surgery
 - ▶ Development of non-addictive pain remedies
 - ▶ Improved options for treating addiction
- ▶ New initiative is called "HEAL" - Helping to End Addiction Long-term

<https://www.nih.gov/news-events/press-releases/2018/08/08/nih-doubles-funding-to-address-opioid-crisis>

The Opioid Crisis - Long-Term Care

- ▶ At the same time as the NIH was making their announcement a Senate committee released a discussion draft of legislation responding to the opioid crisis
 - ▶ April 11, 2018 hearing on the "Opioid Crisis Response Act"
 - ▶ Grants for entities establishing opioid recovery centers
 - ▶ Grants for workforce shortages
 - ▶ Studying the result of laws that regulate length and quantity of opioid prescriptions
 - ▶ Advancement of educational information on the crisis to providers

<https://www.changefix.com/news/help-addressing-opioid-crisis-in-long-term-care-in-the-usa/article/7585831.html>

Risks of Opioid Use

- ▶ Falls and Death in Older Adults
 - ▶ Canadian Medical Association Journal linked falls and death in older adults is linked to opioid use
 - ▶ Opioid use 2 weeks before an injury in 65 years and older
 - ▶ Increased risk of falling by 2.4 times
 - ▶ Falls linked to opioid use were also more likely to die in the hospital

https://eemhalert.org/pub_releases/2018-04/cmaj-out041718.php

7

QUIZ

- 1) According to the National Center for Health Statistics, in 2006, what percent of Americans suffered from pain lasting longer than 24 hours?

8

Definition

- ▶ According to Merriam-Webster



Pain -

- ▶ usually localized physical suffering associated with bodily disorder (such as a disease or an injury)
- ▶ A basic bodily sensation induced by a noxious stimulus, received by naked nerve endings, characterized by physical discomfort (such as pricking, throbbing, or aching), and typically leading to evasive action

<https://www.merriam-webster.com/dictionary/pain>, Accessed 10/2/17

9

What is pain?

- ▶ Unpleasant
- ▶ Subjective
- ▶ Pain is what the resident says that it is
 - ▶ But in facilities, residents are notorious for not verbalizing their pain
 - ▶ Actions speak louder than words

10

Fears of Pain Treatments

- ▶ Side effects of pain medications
 - ▶ Cognitive impairment
- ▶ Addiction
- ▶ Abuse
- ▶ Pain
 - ▶ Something more serious is wrong
 - ▶ Death is imminent



11

Fears of Dependence and Addiction

- ▶ Physical dependence is a physiological phenomenon defined by the development of an abstinence syndrome following:
 - ▶ Abrupt discontinuation of therapy
 - ▶ Substantial dosage reduction
 - ▶ Agonist administration
- ▶ Addiction is compulsive use resulting in physical, psychological or social harm to the user and continued use despite that harm

12

Fears and Other Misconceptions

Tolerance has not been proven to be a prevalent limitation to long-term opioid use. Respiratory depression is less important than treating pain adequately.

Factors that cause greater risk of respiratory depression:

- Opioid naïve
- Advanced Age
- Rapid infusion rates
- Respiratory disease
- Using of accumulating agents

13

Diversion Concerns

- ▶ Less likely with long-acting medications
- ▶ Regulations
 - ▶ Shift-shift count sheets
 - ▶ Policies and Procedures

14

Verbal Communication of Pain

- ▶ Sighing
- ▶ Moaning
- ▶ Groaning
- ▶ Crying
- ▶ Blowing
- ▶ Screaming
- ▶ Requests for help
- ▶ Requests for meds
- ▶ And the list goes on . . .



15

Non-Verbal Communication of Pain

- ▶ Frowning,
- ▶ Grimacing,
- ▶ Fearful look
- ▶ Grinding of teeth
- ▶ Bracing,
- ▶ Guarding,
- ▶ Rubbing
- ▶ Fidgeting
- ▶ Agitation
- ▶ Restlessness
- ▶ Poor appetite
- ▶ Poor sleep
- ▶ Sighing
- ▶ Groaning
- ▶ Crying
- ▶ Heavy breathing
- ▶ Decreased activity
- ▶ Resisting Care
- ▶ Changes in gait
- ▶ Changes in behavior
- ▶ And the list goes on



16

When pain goes untreated

- Quality of Life declines
 - General health
 - Functional capability
 - Cognitive abilities
- Health care utilization increases
- There is an impact on all care givers
- Regulatory and legal liability
 - Can also be a barrier to treatment
 - Laws
 - 3rd party rules
- Effects on the health care center
 - Reputation
 - Referrals

17

Impacts of pain

- ▶ Physical
- ▶ Spiritual
- ▶ Social
- ▶ Psychological

18

Physical Impact

- ▶ Decrease in functional capabilities
 - ▶ ROM limitations
- ▶ Strength and endurance declines
- ▶ Nausea
- ▶ Appetite declines
 - ▶ Weight loss
- ▶ Sleep
 - ▶ Sleep cycle
- ▶ Skin
 - ▶ Breakdown



19

Spiritual

- ▶ Increased suffering
- ▶ Religious beliefs



Social Impact

- ▶ Diminished social relationships
- ▶ Altered appearance
- ▶ Increased burden on caregivers



20

Psychological Impact

- ▶ Decreased ability to enjoy leisure
- ▶ Decreased ability to enjoy "normal" activities
- ▶ Increased anxiety
- ▶ Increased fear
- ▶ Depression
- ▶ Distress
- ▶ Poor concentration
- ▶ Feeling of being "out of control"
- ▶ Changes in mood



21

Impact of Pain

- ▶ Journal of the American Geriatrics Society looked at the impact of pain on outcomes
 - ▶ A review of LTC facilities in Missouri in retrospective analysis
 - ▶ MDS; Activities of Daily Living Scale, Cognitive Performance Scale
 - ▶ Pain was associated with
 - ▶ Physical disability
 - ▶ Pressure ulcers
 - ▶ Depression
 - ▶ Cognitive

Newland, P. K., Wigke-Tervis, D. D., Williams, D. A., Rantiz, M. J. and Petroski, G. F. (2005). Impact of Pain on Outcomes in Long-Term Care Residents with and without Multiple Sclerosis. Journal of the American Geriatrics Society, 53: 1490-1496. doi:10.1111/j.1532-5415.2005.53465.x

22

How Do We Miss Pain?

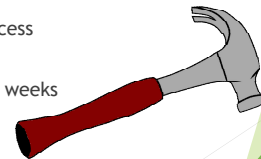
- ▶ "It's part of aging"
- ▶ Inadequate assessment
- ▶ Inadequate treatment
- ▶ "I don't want to bother anyone"



23

Types of Pain - Acute

- ▶ Acute Pain
 - ▶ Definition: "the normal, predicted physiological response to an adverse chemical, thermal or mechanical stimulus"¹
 - ▶ "Useful" biologic process
 - ▶ Self-Limiting
 - ▶ Resolves over days to weeks



1. Carr DB, Goudas LC. Acute pain. Lancet. 1999; 353:2051-2058

24

Types of Pain - Chronic or Persistent

▶ Chronic Pain

- ▶ May be considered a disease state
 - ▶ Or associated with a disease state
- ▶ Pain that lasts longer than the normal time of healing (usually >3 months)
- ▶ May arise from a psychological state
- ▶ Serves no purpose
- ▶ Has no recognizable endpoint

25

Types of Pain - Chronic or Persistent

▶ Musculoskeletal problems

- ▶ Arthritis
- ▶ Wounds
- ▶ Dental problems

▶ Bone

- ▶ Pain increases with movement
- ▶ Osteoporosis
- ▶ Fractures
- ▶ Cancer

26

Types of Pain - Chronic or Persistent

▶ Nerve

- ▶ Neuropathy
 - ▶ Herpes zoster
- #### ▶ Spasms

27

Severity of Pain

▶ Mild - Treat with 1st line therapies

- ▶ Acetaminophen
- ▶ NSAIDs
- ▶ Hydrocodone combinations

▶ Moderate

- ▶ Long-acting opioids with/without adjuvants

▶ Severe

- ▶ Long-acting opioids with/without adjuvants

28

Severity of Pain

▶ Mild Pain

- ▶ Nagging/annoying
- ▶ Doesn't interfere with most ADL
- ▶ Able to adapt to pain with psychological methods (think of something else, go to happy place) and pain medication

29

Severity of Pain

▶ Moderate Pain

- ▶ Interferes significantly with ADL
- ▶ Lifestyle changes are required, but still able to function independently
- ▶ Unable to adapt/cope with pain without intervention (medication, other treatment modalities)

30

Severity of Pain

- ▶ Severe Pain
 - ▶ Unable to perform ADL
 - ▶ Unable to engage in normal activities
 - ▶ Disabled/unable to function independently


What's the big deal?

- ▶ Quality of life
- ▶ More awareness about pain
- ▶ Liability for inadequate treatment of pain
- ▶ Fifth Vital Sign

Assessing and Following Up

- ▶ There are wide variations in the amount of pain that is experienced in response to a particular insult.
- ▶ There are also wide varieties in response to therapy
- ▶ Assessment and follow-up are essential to successfully managing pain.

Assessing and Following Up

- Patient report
 - Where does it hurt?
 - Severity
 - Description of the pain
 - Aggravating/Relieving factors
 - Previous therapy experiences
 - Use "Yes" and "No" questions when possible
 - Include family members
- 

Assessing and Following Up

- Pain is subjective (it is what the patient says it is)
- Pain is different from patient to patient (pain tolerance)
- Multiple Scales available to assess pain
 - ▶ 1 to 10 scale
 - ▶ Face Scale

Pain Assessment

- ▶ How should pain be assessed?
 - ▶ Consistently (numeric rating system, verbal descriptor, non-verbal indicators)
- ▶ When should pain be assessed?
 - ▶ Upon Admission
 - ▶ With each quarterly/annual review
 - ▶ Significant decline or change
 - ▶ When administering PRN medications for pain

Pain Assessment - The Interview

The Pain Interview

ABCDE Mnemonic

- A** Ask about pain regularly; Assess pain systematically
- B** Believe the patient and family in their reports of pain
- C** Choose pain control options appropriate for the patient, family, and setting
- D** Deliver interventions in a timely, logical, and coordinated fashion
- E** Empower patients and their families

<https://www.uspharmacist.com/article/pain-assessment-in-the-elderly>

37

Pain Assessment - Mnemonic

PQRST Mnemonic

- P** Palliative/provocative factors
What makes the pain better/worse?
- Q** Quality
Describe the pain
- R** Radiation
Where is the pain? ← Results
- S** Severity
Compare this pain to other pain
- T** Temporal factors
Does the intensity of the pain change with time?

<https://www.uspharmacist.com/article/pain-assessment-in-the-elderly>

38

Pain Assessment - FLACC Scale

Categories	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disoriented	Frequent to constant frown, squinting eyes, clenched jaw
Legs	Normal position or relaxed	Clonus, restlessness, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid, or jerking
Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaints	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractible	Difficult to console or comfort

Source: Apfelner 20

<https://www.uspharmacist.com/article/pain-assessment-in-the-elderly>

39

Barriers to Effective Pain Management

- Anxiety or Depression
- Decreased mobility or impairment from normal functions
- Agitation or Aggression
- Patient concerns regarding controlled medications
- Patient knowledge, preferences and expectations
- Weight loss
- Sleep disturbances

40

Treatment of Pain

- ▶ Keep it simple - stepwise
- ▶ Utilize adjuvants
- ▶ Keep in mind side effects
- ▶ Treat the cause of the pain and the type of pain
- ▶ Keep in mind the goal and set realistic goals
- ▶ Comorbidities

41

Treatment Goals

- ▶ Acute Pain Treatment Goals
 - ▶ Treat cause of pain
 - ▶ Interrupt pain signals (pain relief)
- ▶ Chronic Pain Treatment Goals
 - ▶ Manage Pain
 - ▶ Use a multidisciplinary approach

42

Route Selection

- Oral - simple, cost effective, long-acting forms
- Rectal - easy alternative to oral, minimal options, patient preferences
- Transdermal - Poor titratability, slow onset
- Parental - Expensive, invasive, fast

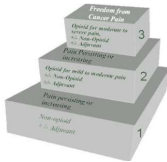
WHO Pain Ladder

- ▶ Three step ladder
- ▶ Designed for treating cancer pain
- ▶ Step 1: non-opioids
- ▶ Step 2: mild opioids (codeine)
- ▶ Step 3: Strong opioids (morphine)



WHO Pain Ladder

- ▶ Adjuvants used at each step to calm fears and anxiety
- ▶ Drugs should be given “by the clock”



Pain Treatment

- ▶ 100% Relief may not be possible
 - ▶ Or desirable
- ▶ Work with patient/prescriber to have specific goals of treatment
 - ▶ Be able to walk to go to the bathroom with minimal pain
 - ▶ Uninterrupted sleep pattern (sleep better)
 - ▶ Be able to have meaningful conversation without being too sedated

Non-NSAID Analgesic - Acetaminophen

- ▶ Available in both Rx and OTC formulations and in OTC and Rx combination products
- ▶ Inhibits synthesis of prostaglandins
- ▶ Antipyretic activity via inhibition of hypothalamic heat regulation center
- ▶ Dosing: 325mg-650mg Q 6-8 hrs as needed

Non-NSAID Analgesic - Acetaminophen

- ▶ Onset of action: typically < 1 hr
- ▶ BBW: High doses associated with acute liver failure, chronic use may also result in liver damage
- ▶ Package Insert limits dose to 4000 mg daily
 - ▶ FDA recommends max dose of 3000 mg daily

Non-NSAID Analgesic - Acetaminophen

- ▶ Often found in combination products
 - ▶ Read the labels especially cough/cold combinations (acetaminophen, APAP)
- ▶ 2014 Changes
 - ▶ Vicodin 5/500 and Vicodin ES 7.5/750mg
 - ▶ FDA Limited the amount of APAP allowed in combination products to try and reduce the potential of accidental APAP toxicity

Non-narcotic - Tramadol

- ▶ Available as a single agent
 - ▶ Available in combination with Acetaminophen
 - ▶ Concomitant use of BZDs and other CNS depressants - use caution
 - ▶ Reduces seizure threshold
- ▶ Serotonin Syndrome
 - ▶ Agitation
 - ▶ Ataxia
 - ▶ Sweating
 - ▶ Diarrhea
 - ▶ Fever
 - ▶ Hyperreflexia
 - ▶ Myoclonus
 - ▶ Shivering

NSAIDS

- ▶ Available as Over the Counter vs Prescription
 - ▶ OTC (Ibuprofen, Naproxen)
 - ▶ Rx (Celebrex, Mobic, Voltaren, Toradol)

NSAIDS

- ▶ Work by inhibiting cyclooxygenase which reduces the precursors for prostaglandins which creates analgesic, anti-inflammatory, antipyretic effects
- COX-1: involved in protecting stomach lining, kidney and platelet function
- COX-2: primarily found at sites of inflammation/injury
- OTC NSAIDS Inhibit both COX-1 and COX-2
 - ▶ Risk of stomach ulcers, decreased kidney function, increased bleeding time
 - ▶ Lower doses available OTC, higher doses available by Rx

OTC NSAIDS

- ▶ Ibuprofen
 - ▶ OTC Dosing: 200-400mg Q 4-6 hours as needed (max of 1200mg daily for 10 days)
 - ▶ Rx Dosing: 400-800mg Q 6 hrs as needed (max of 3200mg daily)
- ▶ Naproxen
 - ▶ OTC Dosing: 200mg Q 8-12 hrs as needed, maximum of 400mg in 8-12hr period and 600mg/24hrs
 - ▶ Rx Dosing: 250mg Q 6-8hrs or 500mg Q 12 hrs, maximum of 1000mg/24hr

Rx NSAIDS

- ▶ Some can selectively bind COX-2
 - ▶ Try to reduce the side-effects of non-selective COX inhibition
- ▶ Black Box Warnings
 - ▶ Increased risk of CS thrombotic events (MI, Stroke)
 - ▶ Increased risk of GI bleeding (can happen at any time in treatment)

Rx NSAIDs - Continued

- ▶ Mobic (meloxicam) - non-selective
 - ▶ Dosing: 7.5-15mg daily
 - ▶ Use not recommended with CrCl < 20ml/min
 - ▶ Common Side Effects: GI upset, diarrhea, edema
- ▶ Celebrex (celecoxib) - Cox2 Inhibitor
 - ▶ Dosing: 100-200mg BID
 - ▶ Monitor renal function, edema
 - ▶ Common Side-Effects: GI upset, diarrhea, edema

Rx NSAIDs - Continued

- ▶ Voltaren (diclofenac) - non-selective
 - Available oral and topical gel/patch
 - 100-200mg oral in 3-4 divided doses
 - Apply 1 patch twice daily to affected area
 - Gel: Max total body dose not to exceed 32g per day
 - ▶ Lower Extremity: 4g per dose 4 times/day, max of 16g per joint/day
 - ▶ Upper Extremity: 2g per dose 4 times/day, max of 8g per joint/day

Opioids vs Non-opioids

- ▶ JAMA article comparing 12 months on pain related function, intensity and adverse effects
 - ▶ Moderate to severe chronic back pain or hip/knee osteoarthritis
 - ▶ 240 randomized patients
 - ▶ Treat to target (3 steps)

Group 1 started with

- MSIR
- OXYIR
- Hydrocodone/APAP

Group 2 started with

- Acetaminophen
- NSAID

Pain-related function and Pain intensity

Conclusion: Treatment with opioids was not superior for improving pain

Yankel EE, Gravelly A, Hagen S, et al. Effect of Opioid vs Nonopioid Analgesics on Pain-Related Function in Patients With Chronic Back Pain or Hip or Knee Osteoarthritis: The SPACE Randomized Clinical Trial. JAMA. 2016;315(19):2427-35. doi:10.1001/jama.2016.0899

Opioids

- ▶ Bind to opiate receptors in CNS causing inhibition of the pain pathway
- ▶ Alters the perception and response to pain
- ▶ Causes generalized CNS depression

Opioids - Continued

- ▶ BBW: Has the potential for abuse, addiction and misuse
 - ▶ Controlled Substances - special prescribing regulations
- ▶ BBW: Respiratory depression
- ▶ Class side-effects: sedation/drowsiness, constipation, nausea, pruritus

Short-acting Opioids vs Long-acting Opioids

- ▶ Short-acting opioids are better for acute pain
- ▶ Short-acting opioids reinforce the cycle of discomfort and dysfunction due to their rapid onsets and their rapid loss of action
- ▶ Short-acting opioids have greater fluctuation in blood levels when compared to long-acting opioids

Opioid Side Effects

- Constipation
- Nausea/vomiting
- Respiratory Depression
- Allergies

Oxycodone

- ▶ All doses should be titrated to appropriate effect
- ▶ Available as immediate release and extended release formulations
 - ▶ Immediate release Dosing: 5-15mg Q 4 - 6 hrs PRN, use lowest dose possible to control pain
 - ▶ Extended Release Dosing: 10mg - 80mg Q 12 hrs routine
 - ▶ Doses > 40mg/dose or 80mg/day are only for opioid tolerant patients
 - ▶ Opioid Tolerant Pts: 60mg PO morphine daily, 30mg PO oxycodone daily, Fentanyl Patch 25mcg/24hr or another equivalent opioid dose for at least 1 week

Oxycodone - Continued

- ▶ Tolerance can occur
 - ▶ Occurs over time, need a higher dose to provide the same relief that a lower dose previously provided

Fentanyl Patch

- ▶ Active Drug: Fentanyl (available in multiple different preparations)
- ▶ Very Potent drug (mcg dosing vs mg dosing for other opioids)
- ▶ Dosing: 12mcg to 100mcg patches available
 - ▶ Titrate to effect
 - ▶ Apply patches every 72 hrs, REMOVE old patch before placing new patch

Fentanyl Patch - Continued

- ▶ Medication is absorbed through the skin, so you do not need to place patch "where it hurts"
- ▶ Clip (do not shave) excess hair before application
- ▶ Apply to intact, non-irritated skin on chest or upper/outer arm
- ▶ Press patch on skin for 30 sec to ensure adhesion

Fentanyl Patch - Continued

- ▶ Apply a new patch if the old one falls off
- ▶ Can cover with First Aid Tape or Tegaderm if patch has trouble staying on
- ▶ Do not cut patch
- ▶ Some patients may require patches to be changed Q 48 hrs
- ▶ Avoid external heat sources (heating pads, electric blankets, hot tubs, heat lamps)
 - ▶ Could cause increased absorption

Opioid Induced Constipation

- ▶ Monitoring
- ▶ Prevention
 - ▶ Water
 - ▶ Fiber
 - ▶ Laxatives
 - ▶ Relistor (methylnaltrexone)
 - ▶ Indicated for Opioid induced constipation
 - ▶ Once daily oral or injectable

Adjuvants

General Principles

- Use the right one
- Titrate one medication at a time
- Watch of additive side effects
- Increase slowly

Adjuvants - continued

- | | |
|-------------------|-------------------|
| • Anticonvulsants | • Antihistamines |
| • Gabapentin | • Hydroxyzine |
| • Pregabalin | • Miscellaneous |
| • Carbamazepine | • Baclofen |
| • Antidepressants | • Bisphosphonate |
| • Duloxetine | • Calcitonin |
| • Amitriptyline | • Corticosteroids |

Specialized Pain Treatments

- ▶ Bone Pain
 - ▶ Dull, Aching, Localized
 - ▶ NSAID with/without opioid
 - ▶ Bisphosphonate
- ▶ Neuropathic Pain
 - ▶ Burning, aching, extremely painful, shock
 - ▶ Corticosteroid with/without opioid
 - ▶ With/without antidepressant or anticonvulsant
 - ▶ Adjuvants

Specialized Pain Treatments

Muscle Spasms and Spasticity

- ▶ Diazepam
- ▶ Baclofen
- ▶ Local Anesthetics/Topicals
 - ▶ EMLA
 - ▶ Lidoderm
 - ▶ Sprays/Creams
 - ▶ Capsaicin - Counterirritant

Agents to avoid

- Talwin - low activity, hallucinations, delirium, agitation
- Meperidine (Demerol) - short duration of action, seizures, erratic and variable absorption orally



Non-Pharmacological Treatments

- ▶ Ice/Heat
- ▶ Massage
- ▶ PT
- ▶ Acupuncture
- ▶ Chiropractor
- ▶ Relaxation
- ▶ Music
- ▶ Aromatherapy
- ▶ TENS
- ▶ Repositioning
- ▶ Distraction

71

Non-Pharmacological Treatments

- ▶ Pet Therapy
- ▶ Virtual reality
- ▶ Meditation
- ▶ Yoga
- ▶ Dry needling
- ▶ Spiritual Support and comfort
- ▶ Coping techniques
- ▶ Education
- ▶ Art

74

Pharmacogenomics

- ▶ CYP 2D6
 - ▶ 25% of drugs use this pathway
 - ▶ Tramadol and Codeine
 - ▶ 29% of Ethiopians are ultra-rapid metabolizers



75

Pharmacogenomics - continued

- ▶ CYP 2C9
 - ▶ NSAIDs
 - ▶ Caucasians highest percentage of poor metabolizers
 - ▶ Side effects
 - ▶ Decreased doses
 - ▶ Polymorphisms

76

Pharmacogenomics - continued

- ▶ OPRM1
 - ▶ G allele - can indicate better pain tolerance
- ▶ OPRK1 & OPRD1
 - ▶ Show a relation with potential addiction and dependence

77

Pharmacogenomics - continued

- ▶ COMT
 - ▶ Breaks down adrenaline and dopamine, these modulate pain.
 - ▶ This can cause increased perception or decreased perception of pain
- ▶ 5HTT
 - ▶ Serotonergic system modulates depression. Serotonin works with analgesic agents to reduce pain; chronic pain patients are more likely to develop depression which will respond to treatment
 - ▶ Knowing about a genetic predisposition to depression may affect the way we want to treat pain

78

Effective Pain Management

- ▶ Identify
 - ▶ Baseline knowledge
 - ▶ Staff AND Families
 - ▶ Needs
 - ▶ Attitudes
 - ▶ Competency
- ▶ Educate
 - ▶ Dispel myths
 - ▶ Multi-disciplinary
- ▶ Measure and Assess

Solutions for Everyone

- ▶ Display a caring attitude
- ▶ Talk to the resident (regardless of comprehension)
- ▶ Talk **TO** the resident
- ▶ Communicate about what works
- ▶ Take care of basic needs

Conclusion and Other Caveats

- ▶ Use non-pharmacological treatments
- ▶ Be clear about the use of multiple PRNs
- ▶ Watch for Side Effects
- ▶ Assess & Document
- ▶ Who's responsible?

Questions?

