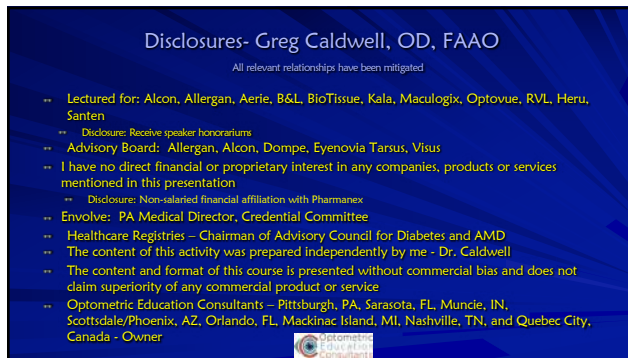
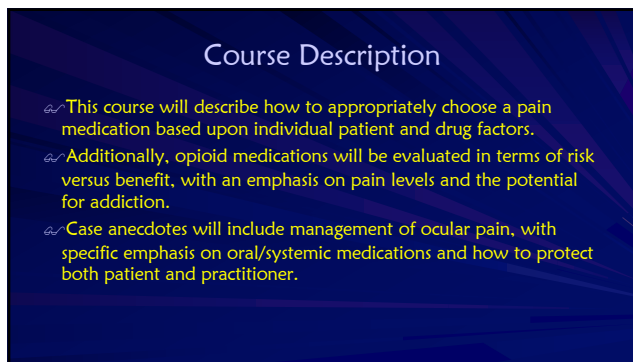


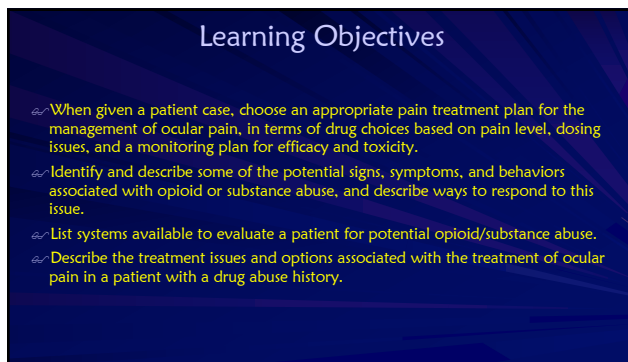
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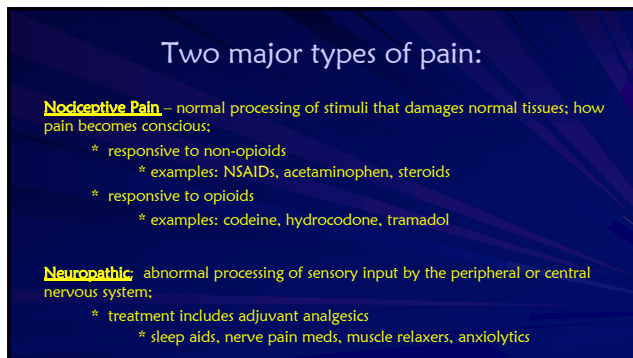
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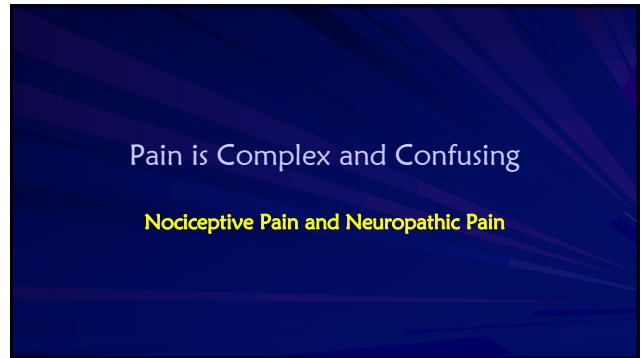
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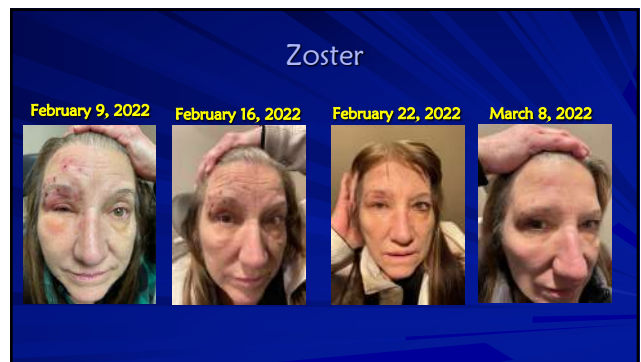
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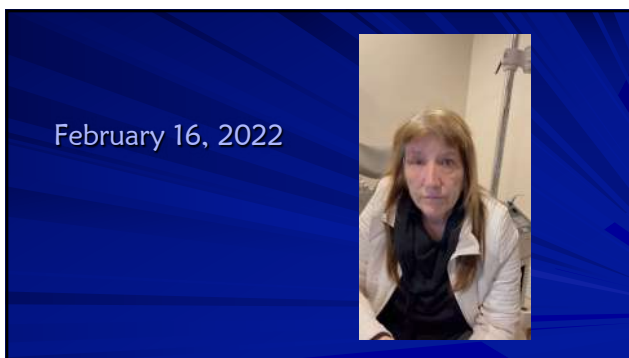
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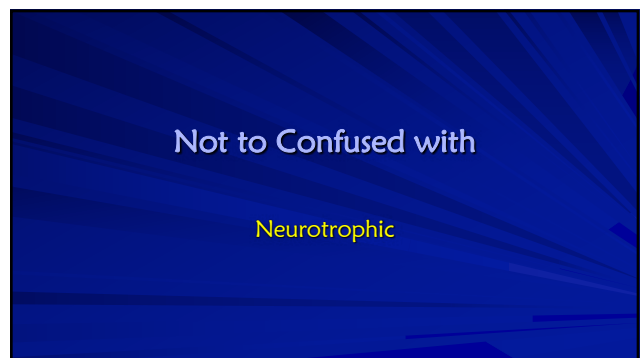
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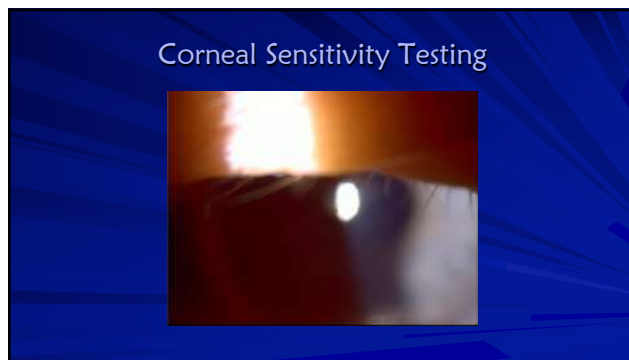
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Drug Treatment Options...Neuropathic Pain

☞ Why is this relevant?

☞ Adjuvants – means: “add on” medications

- * Some of them have addiction potential
 - ☐ Anti-seizure medications that address nerve damage/inflammation
 - MOA: work on the GABA system – similar to benzodiazepines (ex. Xanax)
 - Gabapentin (Neurontin) – controlled substance in multiple states
 - Pregabalin (Lyrica) – controlled substance in all 50 states
 - ☐ Anti-anxiety and sleep medications
 - Zolpidem (Ambien)
 - Alprazolam (Xanax), Lorazepam (Ativan), Diazepam (Valium)

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Pain Assessments and Scales

☞ Adds objective data to a patient’s feeling of pain

- * It is a subjective problem to assess!
- * Remember...no patient should needlessly suffer!

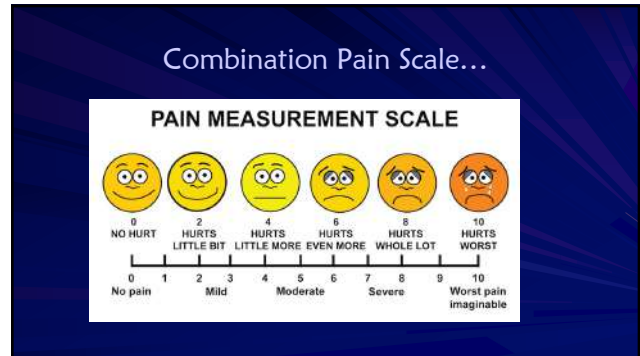
☞ “Does the injury or wound or diagnosis fit the patient’s presentation?”

- * It is important to be able to assess the degree of pain in a patient.

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Drug Treatment Options... Nociceptive Pain

3 Groups of analgesics

- * Non-opioids
 - Acetaminophen (Tylenol)
 - NSAIDs (Ibuprofen, naproxen sodium)
 - Glucocorticosteroids (methylprednisolone, prednisone)
- * Opioids –
 - Codeine (Tylenol with codeine)
 - Hydrocodone (Vicodin)
 - Tramadol (Ultram)

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Controlled Substance Schedules

Schedule I – not considered to be medically necessary, research only

- * Heroin
- * “Medical” Marijuana
 - State control of marijuana and CBD
- * LSD
- * Mushrooms
- * Ecstasy

Schedule II – more likely to be abused (as compared to Schedule III, IV, V)

- * Opioids, AKA “Narcotics”
 - Oxycodone (OxyContin)
 - Hydrocodone (Vicodin, Lorcet, Norco)
 - Morphine (MSContin, MSIR)
 - Hydromorphone (Dilaudid)
 - Methadone
 - Fentanyl (Duragesic)
- * ADD/ADHD meds:
 - Methylphenidate (Ritalin)
 - Mixed amphetamine salts (Adderall)

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Controlled Substance Schedules

Schedule III - Safer, less likely to be abused (as compared to Schedule II)

- * Combination products with APAP or ASA (codeine)
- * Esketamine – nasal spray for treatment resistant depression

Schedule IV – Safer, less likely to be abused (as compared to Schedule II and III)

- * Tramadol (Ultram)
- * Benzodiazepines (lorazepam, diazepam, oxazepam)
- * Sleep agents (zolpidem, etc.)

Schedule V – safest, least likely to be abused

- * Expectorants with codeine

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Opioids “narcotics”

- ☞ Mainstay of therapy for the treatment of pain
- ☞ NO maximum daily dose limitation
- ☞ Useful for acute and chronic pain

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Morphine Products

Morphine

*Standard for comparison of other agents

- MSIR (IR caps) (q 3-4 hours prn)
- MS Contin (CR tabs) (q 8-12 hours)
- Kadian (CR caps) (q 12 - 24 hours)
- Avinza (CR caps) (q 24 hours)

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Hydromorphone Products

Hydromorphone (Dilaudid) tablets – immediate release

Hydromorphone ER (Exalgo) tablets – extended release

• Used for severe pain

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Codeine-Based

- Codeine – C3; Schedule III
- Hydrocodone – C2; Schedule II
- Oxycodone – C2; Schedule II

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Codeine tablets

- WEAK analgesic: commonly used, so MOST have heard of it!
- Add acetaminophen/aspirin – Schedule III
 - * **Tylenol #3** = 300 mg acetaminophen & 30 mg codeine
- Add expectorant – Schedule V
 - * If you think someone won't try to get their hands on "codeine cough syrup" as a drug of abuse, you'd be surprised!!!

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Oxycodone Products

Long-Acting, Extended-Release

OxyContin

Immediate Release, short-acting tablets

OxylIR (IR cap)
Roxicodone solution

with Acetaminophen:
Percocet and Endocet (oxycodone/APAP dose)

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OxyCONTin (Controlled release tablets (q 12 hours...once in a while q 8 hours);
new formulation is out to help control abuse

Manual Crushing Followed by Dissolution



Crushed New Formulation

Crushed Original Formulation

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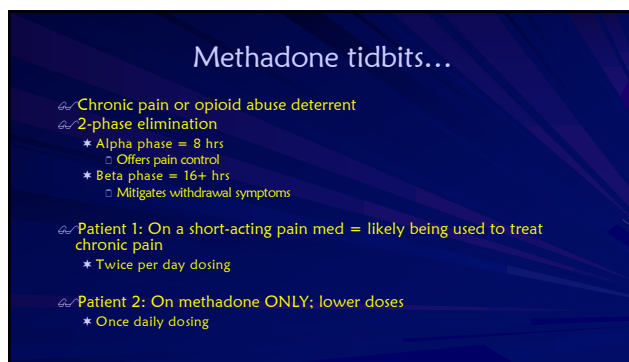
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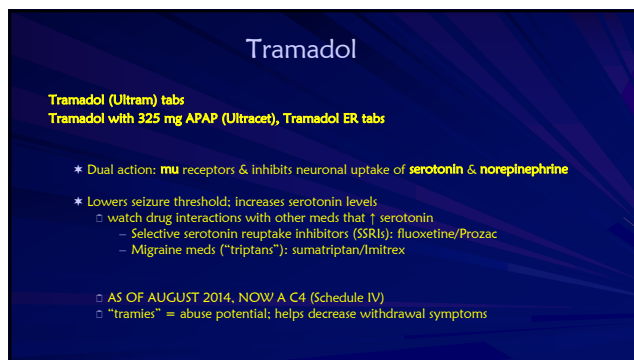
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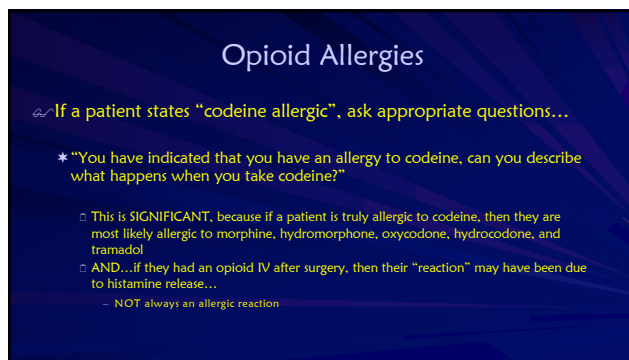
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Opioid Allergies

~ DO YOU KNOW WHAT A PATIENT CAN TAKE?

- ☐ Fentanyl
- ☐ Methadone
- ☐ Meperidine

~ Assessing "allergies" appropriately helps practitioners sort through ACTUAL allergy potential and "placebo allergies"

- ☐ Fear versus drug seeking

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Specific Medications Using Numeric Pain Scale

Mild pain = 1 – 3

- ~ Acetaminophen (APAP; Tylenol)
- ~ Ibuprofen (Advil, Motrin)
- ~ Naproxen sodium (Aleve)
- ~ Tramadol (Ultram) - low dose

Moderate pain = 4 – 6

- ~ Tramadol (Ultram) – mid to high dosing
- ~ Tylenol with codeine (Tylenol #3)
- ~ Acetaminophen with oxycodone (Percocet)
- ~ Acetaminophen with hydrocodone (Vicodin, etc.)

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Specific Medications Using Numeric Pain Scale

Severe pain = 7 – 10

- ~ Tylenol with hydrocodone (Vicodin, etc.) – higher doses
- ~ Tylenol with oxycodone (Percocet, etc.) – higher doses
- ~ Morphine (MSIR)
- ~ Hydromorphone (Dilaudid)
- ~ Fentanyl (Duragesic patch; Actiq lozenge on a stick)

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Opioid Effects/ADRs

- ~ Sedation
- ~ Euphoria – mu receptors
- ~ Dysphoria/Hallucinations
- ~ Pruritis – allergy versus normal release of histamine
- ~ Nausea/vomiting
 - * Triggers CTZ
 - * Codeine "allergy"

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Opioid Effects/ADRs

- ~ Confusion
- ~ Miosis
- ~ Respiratory depression – this is what kills a patient
 - * **Mixing opioids with other CNS depressants**
 - ☐ Alcohol
 - ☐ Benzodiazepines
 - ☐ Muscle relaxers
 - ☐ Sleep agents
 - ☐ Antihistamines
 - ☐ Anti-seizure medications

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Opioid Effects/ADRs


- ~ Withdrawal symptoms:
 - * Short half-life agents are more likely to cause abrupt withdrawal symptoms
 - * Sweating
 - * High sympathetic tone: increase in heart rate and blood pressure, mydriasis
 - * Agitation
 - * Irritation
 - * Irrational behavior
 - * Symptoms disappear with (immediate) use of an opioid

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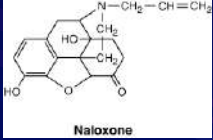
Opioid Antagonists

Naloxone (Narcan) & Naltrexone (ReVia)

- * Used to treat opioid overdose



Morphine



Naloxone

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Mixed Opioid Agonist-Antagonist

- Exhibit partial agonist or antagonist activity at the opioid receptors
- Agonist/Antagonist combinations for the **TREATMENT** of chronic pain
 - * **NOT** appropriate for the treatment of acute pain
- Morphine/Naltrexone (Embeda)
- Oxycodone/Naltrexone (Troxycas ER)
- Schedule II controlled substance

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Mixed Opioid Agonist-Antagonist

- Exhibit partial agonist or antagonist activity at the opioid receptors
- Agonist/Antagonist combinations for the **TREATMENT** of opioid abuse/addiction
 - Buprenorphine (Buprenex)
 - Buprenorphine/Naloxone (Suboxone)
- Schedule III
- Adverse effects
 - * Less respiratory depression & less abuse potential?
- Precipitate withdrawal in an opioid-dependent patient

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Painful Ocular Problems – things to consider...

- Acute or chronic?
 - * YOU are in charge!
 - * Legal and ethical issues – do not allow yourself to be bullied by the patient!
- Work with other practitioners!
- Only a pain specialist should write RXs for CII medications for chronic pain issues
 - * If something looks suspicious, then make inquiries! Especially before you write an RX for a drug that can be abused and/or sold!

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Painful Ocular Problems – things to consider...

- Use the tools that are available!
 - State databases
 - PDMP = Prescription Drug Monitoring Program
 - Pharmacists

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Tolerance

- Escalation of dose to maintain effect (analgesia or euphoria)
 - * Happens to everyone
- Regarding euphoria = may be life threatening because respiratory depression does not show much tolerance

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"True Addiction" (formerly "psychological dependence")

- ~ Compulsive use despite harm
- ~ Many times triggered by cravings in response to specific cues
 - * Lifestyle is geared to the acquisition of the drugs
 - * Borrowing from others, injecting oral formulations, prescription "loss", requesting specific drugs (not always a sign...as some drugs just work better)
- ~ Quality of life is not improved by the medication and eventually it becomes compulsive ("wanting without liking")
- ~ Relapse is very common even after "successful" withdrawal...it is a relapsing disease that is incredibly hard to treat

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Identifying Behaviors of Abuse/Addiction

- ~ New patients that don't seem to "fit"
- ~ "fast talkers"
- ~ Strange allergies
- ~ Excuses for "loss" of meds or why they need "a strong pain medication"

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Ways to respond

- ~ Avoid getting "bullied"
- ~ Avoid acting like you are judging the patient
- ~ State data bases
 - * Call your local pharmacy/pharmacist
- ~ Legal/ethical issues
 - * If you didn't write it down, then it didn't happen!
 - * If you accidentally give an addict a script for a pain medication, you won't get into "trouble"...

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Substance abuse history...

- ~ Avoid all opioids in a patient with a history of heroin use
 - * This includes tramadol
 - * May trigger dopamine reward and the drug "need"
 - * Stick with higher doses of a NSAID +/- acetaminophen
- ~ Patients with abuse history for other substances (ex. Benzodiazepines, alcohol, amphetamines)?
 - * It is a judgement call
 - * Some evidence to suggest that all addictive meds should be avoided!


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Conditions Which May Require Pain Management


- ~ Large cornea abrasions
 - * Cornea burn
 - * PRK/PTK
- ~ Orbital trauma
- ~ Orbital blowout fractures
- ~ Scleritis



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Optometric
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Consultants



Questions and Thank You!

Treatment of Pain
Opioid Choices and Considerations

Greg Caldwell, OD, FAO
Phoenix, AZ
Sunday, April 16, 2023



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