Course Title: Opiates and Ocular Pain Management

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Course outline:

I. Understanding "pain"
- A. Pathophysiology of pain
  - 1. Protective function
    - a. Sensory feed-back to avoid adverse event
    - b. Example: getting close to a hot object
  - 2. Normal response to injury or disease
    - a. Sensory feed-back that a tissue is compromised
    - b. Example: corneal pain due to contact lens over-wear
  - 3. The pain pathway
    - a. Role of the peripheral nervous system
    - b. Role of the central nervous system

- B. Physiologic sources of pain
  - 1. Cutaneous or superficial (skin and subcutaneous tissues)
    - a. Sensory receptors
      - 1). Nociceptors – respond to heat, pressure, chemical exposure
        - a). All parts of the body except the brain
          - (1). Skin contains specific types of nociceptors
            - (a). Mechanonociceptors, thermal, chemical, polymodal
          - (2). Joint capsules and ligaments
            - (a). Mechanonociceptors, polymodal, "silent"
          - (3). Visceral organs
            - (a). Mechanonociceptors, thermal, chemical, "silent"

        - b). Detect signals from damaged tissue
        - c). Cell bodies located in trigeminal or dorsal root ganglia
      - 2). Thermoreceptors – temperature of the skin and blood
        - b). Hemostatic control via the thalamus
      - 3). Photoreceptors – light absorbing pigments that detect light
  - 2. Deep somatic
    - a. Bone, muscle, blood vessels, connective tissue
  - 3. Visceral pain
    - a. Organs and the linings of body cavities
  - 4. Neuropathic pain
    - a. Nerve fibers, spinal cord, and other central nervous system

II. Assessing pain
A. “The fifth vital sign”
1. Assessment of pain when examining patients
a). Historical questions specific to presentation
1). Frequency, onset, location, duration, associated signs and symptoms, relief
b.) Utilization of a pain scale
1.) Survey with the use of numbers or images to quantify degree of pain
2. Controversial in medicine
a). Originally suggested to assure pain was included in patient care
1). Acute disease
2). Chronic disease
3). Peri-operative patient care
b). Resistance due to controversies in focus of care
1). Patient satisfaction surveys
(a). Complaints on surveys if pain was not adequately managed
(b). Agenda to inappropriately obtain supply of pain medications

III. General cause of ocular pain
A. Acute onset
1. Secondary to injury
2. Secondary to progression or exacerbation of ocular disease
a. Example: Uveitis flare-up
B. Chronic pain
1. Secondary to an existing ocular diagnosis
a. Example: Dry eye syndrome
2. Secondary to general medical diagnosis
a. Example: Rheumatoid arthritis
3. Secondary to syndromes with pain as primary symptom
a. Chronic pain syndrome
b. Forms of cancer
C. Post-operative pain
1. Pain resulting from surgical procedure (acute, chronic)
2. Taking into consideration that pain management is limited to post-operative course

IV. Modalities to manage ocular pain
A. Supportive, non-ophthalmic (ice/heat, elevation, rest, discontinuation of product or activity) (5 MINUTES)
1. Ice for acute pain
a. How ice helps (versus heat)
b. Effect on both pain and inflammation
2. Rest and use of positioning to improve pain
a. Somnolence for example, in the case of hyphema

b. Elevation of a body part to relieve pressure

3. Discontinuation of product or activity

a. Contact lenses

b. Stopping a therapy (medication) that may be causing an adverse event

B. Supportive, ophthalmic

1. Artificial tears of various viscosities
2. Sodium chloride
3. Homeopathic preparations

C. Supportive first aid

1. Bandage contact lens
2. Pressure patching

D. Prescription ophthalmic

1. Nonsteroidals (NSAIDs)
2. Steroids

a. May be topical or injectable

3. Cycloplegics
4. Antibiotics (indirectly)

a. May be topical or injectable

5. Anti-glaucoma (indirectly)

b. May be topical, oral, or surgical interventions

E. Oral preparations

1. Over the counter

a. NSAIDs

1). Acetaminophen

2). Ibuprofen

3). Naproxen

b. Cautious of adverse response or interactions with other medications

c. Potential for “near opiate level” degree of analgesia

2. Prescription non-opioid

a. NSAIDs

b. Steroids

c. Antibiotics (indirectly)

3. Prescription opioid

a. Awareness of scope of practice

1). Example: In state of Pennsylvania – Schedule III and IV narcotics

2). “Just because you can, does not mean you have to”

a). If prescribing an opiate is out of your comfort zone - refer

b. Discuss with patient what medication may have been used in the past

1). Potential drug sensitivity

2). How effective did medication relieve pain

3). Past history of dependence on medication

a). Have to rely on patient responses to questions (poly-pharmacy)

b). Medical chart review
c). Incorporate other providers (primary care, mental health, pharmacist)
d). Discussion with family members

c. Individual state drug monitoring programs
1). Awareness of how to contact monitoring programs
2). Awareness of individual state requirements
a). Name, dose, duration of use of a narcotic

d. Discussion of opiate medications
1). Medications within Schedules II, III, and IV
a). Discussion will be specific to case examples and state regulations
2). Proper dosage
3). Proper frequency of use
4). Proper number of pills to supply no patient
5). For acute eye care – NEVER SUPPLY REFILLS
6). When to re-assess to be certain therapy is effective

e. Abuse deterrent strategies
1). Non-opioid treatments first, adhere to standard of care
(a). Medications that may be over the counter or non-opioid options
(b). Therapeutic treatments – rest, heat/ice, massage, many others
2). Drug selection
(a). Medication designed to manage acute versus chronic pain
(b). Naïve use of opioid vs. past-history of opioid use
3). Dosage
(a). Lowest dose indicated for the problem
(b). Shortest duration of use to resolve problem
4). Abuse deterrent formulations (ADFs)
(a). US Food and Drug Administration (FDA), 2015 industry guidance report.
(b). ADFs help to prevent alterations of prescription opioids and the extraction of the active ingredients by the user.
(1). Physical barriers – prevention of chewing, crushing, cutting, grating, grinding
(2). Chemical barriers – gelling agents or solvents to limit manipulation
(3). Agonist/antagonist combinations – antagonist added to release upon manipulation and interfere, reduce, or defeat euphoria
(4). Aversion – added substances to produce unpleasant effects upon manipulation (such as a nasal irritant)
(5). High tech delivery systems – release designs (immediate vs. sustained)
(6). New drug or prodrug – different receptor binding profiles, need for enzymatic activation, CNS penetration, other novel effects
(7). Combination types – two or more of the above technologies
5). Prescription Drug Monitoring Programs (PDMP)
(a). Designed to track controlled drug prescriptions for an individual by prescriber name, dates, volumes, and pharmacy site.

(b). Should be used prior to prescribing an opioid
(c). Evaluates whether there are multiple other prescribers for the patient, frequency of prescriptions, and drug names.