Putting the Pieces Together: Strategies for Pain Management
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August 6, 2015

Providers’ Clinical Support System – Opioid Therapies (PCSSO)

- Grant funded by SAMHSA
- Coalition of professional organizations
- Overarching goal: To offer evidence-based trainings on the safe and effective prescribing of opioid medications in the treatment of pain and/or opioid addiction.
- AAP = 2 Webinars per grant year (6 total)
- www.pcso-o.org

CME

CME credit is available for this Webinar upon completion of an evaluation.

More information will be provided near the end of this presentation.

Educational Objectives

At the conclusion of this activity participants should be able to:

- Describe common pharmacologic interventions, including opioid interventions where appropriate for pediatric and adolescent patients with chronic pain.
- Summarize the efficacy of common non-pharmacologic approaches to child and adolescent pain management.
- Assess a child/adolescent’s potential for medication misuse using the CRAFFT screening tool.
- Provide anticipatory guidance to the family regarding appropriate use, storage, and safe disposal.

Quick Refresher From Webinar #1

- Webinar #1 – July 2nd
  - “Unraveling the Mystery of Acute and Chronic Pain in the Child & Adolescent”
- Pain can be broadly divided:
  (a) Nociceptive pain - the sensation or noxious stimulus associated with tissue-damage, and is usually protective.
  (b) Inflammatory pain - hypersensitivity associated with tissue damage due to inflammatory mediators.
  (c) Pathological pain - disease state caused by injury to either peripheral or central nervous system (neuropathic) or by its abnormal function (dysfunctional).

Woolf CJ. What is this thing called pain? The Journal of Clinical Investigation. 2010;120(11), 3742–3744
Types of Pain (Refresher cont’d)

<table>
<thead>
<tr>
<th>Pain Type</th>
<th>Descriptive Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>Pain &lt; 3 months</td>
</tr>
<tr>
<td>Chronic</td>
<td>Pain &gt; 3 months</td>
</tr>
</tbody>
</table>

Acute vs Chronic

Acute Pain = Pain < 3 Months
Chronic Pain = Pain > 3 Months

Opioids

- Exert effects through mu, delta, and kappa receptors
- Most profound analgesia effect at the mu receptor
- Side effects
  - Nausea and vomiting
  - Delayed gastric emptying & constipation
  - Cardiovascular effects
  - Biliary tract: Sphincter of Oddi dysfunction
  - Genitourinary system: Urinary retention
  - Skin: Pruritus
- Opioid Induced Hyperalgesia

Codeine

- CYP2D6 converts pro-drug into active metabolite
  - Codeine to Morphine, Hydrocodone to Hydromorphone, Tramadol to O-D Tramadol

We no longer prescribe codeine as an analgesic in our practice.

- Approximately 47% are "poor metabolizers"; they have little CYP2D6, and codeine is less effective for analgesia in these patients
- Conversely, 10% of the population are “ultra rapid metabolizers” – FDA alert

Choice of PO Opioids for Acute Pain

- Hydrocodone
- Oxycodone IR or SR
- Morphine IR or SR
- Hydromorphone
- Methadone

- Tramadol - SNRI and weak mu-receptor agonist - Avoid using with TCAs, probably all the SSRIIs, and hydrocodone to avoid accumulation of tramadol and attendant risk of seizures
Nociceptive Pain

- Acetaminophen
- NSAIDS
- Opioids
  - Moderate to severe acute pain
  - Refractory neuropathic pain
  - BEWARE!!! Chronic nonmalignant pain

Neuropathic Pain

<table>
<thead>
<tr>
<th>Therapeutic Class</th>
<th>Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antidepressants</td>
<td>Tricyclic antidepressants, SSRI, SNRI</td>
</tr>
<tr>
<td>Antiepileptics / Anti-convulsants</td>
<td>Carbamazepine, Oxcarbazepine, Phenytoin, Topiramate, Lamotrigine, Levetiracetam, Gabapentin, and Pregabalin</td>
</tr>
<tr>
<td>Anti-Arrhythmics</td>
<td>Lidocaine, Mexiletine</td>
</tr>
<tr>
<td>Topical Formulations</td>
<td>Lidocaine, Capsaicin, Diclofenac</td>
</tr>
<tr>
<td>Analgesics</td>
<td>NSAIDs, Tramadol, Opioids</td>
</tr>
<tr>
<td>NMDA-Antagonists</td>
<td>Ketamine, Dextromethorphan, GABA-Antagonists</td>
</tr>
<tr>
<td>GABA-Antagonists</td>
<td>Clonazepam and Baclofen</td>
</tr>
<tr>
<td>Alpha-2 Agonists</td>
<td>Clonidine, Tizanidine</td>
</tr>
</tbody>
</table>

Case Scenario #1

Your next patient is a 16-year-old male with a history of Crohn’s disease who has had a number of flares in the past year. He is requesting a refill for hydrocodone. You have not seen him for 6 months. He has been going to local urgent care clinics and emergency rooms due to abdominal pain and has been prescribed hydrocodone which he has been taking every 6 hours with partial success.

Multidisciplinary Model for Pain Management

- Physicians/ ARNP/ PA
- Nurses
- Psychologists
- Social workers
- Physical / occupational therapists
- Other providers

Acupuncture Clinical Studies


Biofeedback Modalities

- Electromyograph (EMG)
- Skin Temperature
- Galvanic Skin Response (GSR)/ Electrodermal Response (EDR)
- Respiratory rate
- Cardiac rate
- Heart Rate Variability
- EEG (neurofeedback)
Biofeedback Research


- 86 outcome studies; 55 studies met inclusion criteria
- BFB was more effective than control conditions.
- Blood-volume-pulse feedback yielded higher effect sizes than peripheral skin temperature feedback and electromyography feedback.
- BFB in combination with home training to be more effective than therapies without home training.

Massage Research


Music Therapy


WHO Analgesic Ladder

- Initially developed for treatment of cancer pain
- Has grown to include most types of pain, malignant and non-malignant
- Time course and progression of pain an important consideration

Considerations for Chronic Opioid Prescribing

- Persistent pain unable to be managed with other means
- Improvement in pain and function, low SE
- Able to utilize therapy appropriately, returns for F/U
- Stable mood and psychological functioning

Evidence-Based Guidelines

- American Society of Interventional Pain Physicians (ASIPP) Guidelines for Responsible Opioid Prescribing in Chronic Non-Cancer Pain – Evidence and Guidelines
- (ASIPP Opioid Guidelines 2012)
### ASIPP 2012 Evidence
- Prescribing, supply, non-medical use increasing
- Long-acting opioids contribute to increasing fatalities.
- Long term effectiveness not well studied
- Co-morbid conditions at more risk
- Non-compliance difficult to track

### ASIPP 2012 Guidelines for Opioid Therapy
- Diagnosis physical and psychological, treatment goals, contraindications, monitoring; consider pain consult
- A robust agreement by all parties is essential in initiating and maintaining opioid therapy and such agreements reduce overuse, misuse, and diversion

### ASIPP 2012 Guidelines
- Start low dose, short acting drugs
- Escalation to long-acting >> caution
- Methadone - experienced clinicians; check EKG
- Bowel regimen
- Chronic opioid therapy may be continued with continued adherence monitoring in well-selected populations, in conjunction with or after failure of other modalities with improvement in physical and functional status and minimal adverse effects

### Databases
- State Specific Inquiry: [www.nascoa.org/stateprofiles.htm](http://www.nascoa.org/stateprofiles.htm)
- Emergency Department Information Exchange (EDIE)

### Tolerance and Substance Use Disorder or Addiction
- Tolerance – a physiologic process of adaptation
- Substance Use Disorder or addiction – a psychological process

### Case Scenario #2
Your next patient is a 15-year-old female who had anterior cruciate ligament replacement surgery 4 months ago. She had been going to physical therapy regularly but has gotten frustrated at her lack of progress and still has intermittent pain. Her surgeon thinks she is on target in her recovery.

She has been taking ibuprofen 2 to 3 times a week with only partial pain relief and wants something stronger. She also wants something for sleep.

What should you do?
Assessing for Potential Misuse

- **CRAFFT**
  - Questions to identify adolescents at risk for substance use
  - Quick assessment
  - Not a diagnostic tool

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CRAFFT

- **C** Have you ever ridden in a car driven by someone (including yourself) who was “high” or had been using alcohol or drugs?
- **R** Do you ever use alcohol or drugs to relax, feel better about yourself, or fit in?
- **A** Do you ever use alcohol or drugs while you are by yourself, or alone?
- **F** Do you ever forget things you did while using alcohol or drugs?
- **F** Do your family or friends ever tell you that you should cut down on your drinking or drug use?
- **T** Have you ever gotten into trouble while you were using alcohol or drugs?

2 or more “yes” answers suggest that the adolescent may have a serious problem with substance use, and additional assessment is warranted.

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Case Scenario #2

- On CRAFFT screening she does answer yes to one question.
- You refer back to physical therapy and work on alternative methods to help her including massage biofeedback and acupuncture.
- You discuss sleep hygiene and ask her to follow up with you in a month.

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Back to the Case Scenario #1

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Back to the Case Scenario #1

- On further questioning with your patient without parents in the room, you discover that your patient has many other stressors in his life including conflict between his parents and financial difficulties.
- On CRAFFT screening he answers yes to 3 questions.
- You ask if you can bring in other health care professionals to help him and his family such as a pain psychologist or social worker, and chemical dependency counselor.
Anticipatory Guidance for Families

- Appropriate use, storage, and safe disposal
- Discuss storage of parents’ or other family members’ prescriptions
- Talk to your kids about use of drugs and alcohol and other drugs including narcotics

Changes You May Wish to Make In Practice

- Screen your patients for substance abuse using CRAFFT
- Limit prescription and refill
- Consider using an opioid contract with the adolescent
- Utilize Prescription Monitoring Databases according to State requirements.
- Communicate with patient and families about medicine cabinets and how to properly dispose of unused narcotics and other prescription medicine