

**UCSF Pain Summit 2013
Multidisciplinary Approach to Acute and Chronic Pain**

**UCSF NIH Center of Excellence in Pain Education (CoEPE)
UCSF Pain Research Group**

**May 16, 2013, 8:30am-3:30pm
Millberry Union, City Lights and Golden Gate Rooms**

UCSF Medical Center

UCSF Benioff Children's Hospital



Pre and Post Test (Answers)

1. Which of the following is NOT a known risk factor for opioid overdose or misuse?
- a. History of a substance use disorder
 - b. Untreated depression
 - c. Female gender**
 - d. Tobacco use
 - e. White race

The answer is C.

- a. A personal history of substance use disorder is one of the strongest risk factors for opioid overdose and should be considered a relative contraindication to prescribing opioids. Patients with a history of substance use disorders should be very closely supported and monitored if they are started on controlled substances. Close supervision would include: support from a behavioral health specialist or a relapse prevention group; short prescription lengths (i.e. 2 weeks to begin with) and frequent medical visits; frequent urine drug testing; pill counts to assess for diversion; regular use of the statewide Prescription Drug Monitoring Program (PDMP); and use of a clear patient-provider agreement. Patients with a personal history of opioid misuse are at particularly high risk. In these patients, opioids for chronic pain are a very last resort and require very close monitoring.
- b. Untreated depression is also a risk factor for opioid misuse and for overdose. Patients with anxiety, bipolar disorder, depression, PTSD, ADHD and psychotic disorders are all at elevated risk for misuse and overdose. It is believed that this elevation in risk is multifactorial. Often, patients use opioids to self-medicate for these disorders and are more prone to

overdose because of dose escalation during periods of psychological distress. For the same reason, their risk of developing psychological dependence is increased. These populations are generally at increased risk for all substance use disorders. Additionally, they are at increased risk for intentional overdose.

- c. **Female gender is not a risk factor for opioid overdose or misuse.** In fact, male patients are at higher risk than female patients of opioid misuse and overdose. Other evidence based risk factors for overdose or misuse include: age less than 45; concurrent heavy alcohol use; concurrent tobacco use; mental health disorders including depression, bipolar disorder, PTSD, and ADHD; history of more than 5 prescribers in one year; more than 50% increase in dose over 2 months; a history of requesting one or more early refills; combined prescription of benzodiazepines; use by non-medical routes (e.g. intranasal or injected); and concurrent use of illicit substances, especially cocaine.
- d. Tobacco use: like other substance use disorders, tobacco use disorder is correlated with higher rates of opioid misuse and, relatedly, overdose.
- e. In both national and local studies, White race is associated with increased risk of prescription opioid misuse when compared to African American or Asian race. In studies of medical provider perception, medical providers are more likely to predict that African American patients are misusing opioids than White patients. In these same populations, White patients are in fact more likely to be misusing their opioid prescriptions.

2. When treating pain in the pediatric population, which of the following is true?

- a. Infants and children exhibit pharmacokinetics similar to adults except they are smaller so weight based dosing should be applied.
- b. It is easier to assess pain in infants and children because they more readily verbalize their degree of pain.
- c. **A multimodal approach to pain management in children may include integrative therapies, adjuvant medications and opiates.**
- d. Children rarely respond to behavioral therapies for pain management.
- e. Mind-body techniques are most effective in children if introduced during an acute pain crisis.

The answer is C.

A multimodal approach to pain management in children may include a variety of different therapies – ranging from integrative modalities such as acupuncture and biofeedback, to opioid-sparing medications, opioids, and potentially interventional techniques. Infants and children do not exhibit the same pharmacokinetics as adults. Pain assessment in children can be more difficult due to their behavioral and developmental stage. Children can be extremely amenable to behavioral therapies and mind-body techniques as they have a

natural developmental drive for mastery and autonomy. Mind-body techniques are more likely to be successful if introduced during a non-acute phase of an illness.

3. Which of the following are considered safety strategies for patients receiving patient-controlled analgesia?
- a. Using concurrent opioids via different routes
 - b. Extending the dosing lockout interval**
 - c. Using hydromorphone as opioid of choice
 - d. Assessing institutional use of naloxone

The answer is B.

Both morphine and hydromorphone may not peak in serum concentration until 15-20 minutes after each bolus dose. If a patient continues to receive PCA doses before previous doses have peaked, they could unintentionally overdose themselves, leading to sedation or the need for naloxone rescue. To avoid this, a PCA pump is programmed with a lockout interval determined by the provider. Best practice standards recommend conservative initial dosing parameters for PCA, including a 10-minute lockout interval, which could be increased to 15 minutes in high-risk patients. In a UCSFMC pilot study, increasing the PCA lockout to 10 minute standard did not inadvertently decrease the safety or quality of pain control delivered to the patients receiving PCA. Using concurrent different routes has the potential to decrease safety as each route has its own time for peak effect. In UCSFMC studies use of PCA hydromorphone was associated with an increased need for rescue naloxone compared with morphine. Although assessment of naloxone use is important in determining which areas need further improvement, mere assessment is only the first step in developing safer strategies for patient opioid use.

4. According to the 2009 American Pain Society practice guidelines for the treatment of low back pain, intensive interdisciplinary rehabilitation with a cognitive-behavioral emphasis is strongly recommended for patients with:
- a. Acute low back pain
 - b. Chronic low back pain and depression
 - c. Radicular low back pain who are being considered for surgery
 - d. Nonradicular low back pain who have not responded to usual, noninterdisciplinary interventions**
 - e. All of the above

The answer is D.

The 2009 APS guidelines state in Recommendation 2, “In patients with nonradicular low back pain who do not respond to usual, non interdisciplinary interventions, it is recommended that clinicians consider intensive interdisciplinary rehabilitation with a cognitive/behavioral emphasis (strong recommendation, high-quality evidence). Chronic back pain is a complex condition that involves biologic, psychological, and environmental factors. For patients with persistent and disabling back pain despite recommended noninterdisciplinary therapies, clinicians should counsel patients about interdisciplinary rehabilitation (defined as an integrated intervention with rehabilitation plus a psychological and/or social/occupational component) as a treatment option.”

Reference:

Chou R, et al. Interventional therapies, surgery, and interdisciplinary rehabilitation for low back pain: an evidence-based clinical practice guideline from the American Pain Society. *Spine (Phila Pa 1976)*. 2009 May 1;34(10):1066-77.

5. Which of the following is not a standard management strategy before surgical intervention for abdominal pain resulting from chronic pancreatitis?
- a. Extracorporeal shock wave lithotripsy (ESWL) for pancreatic stones
 - b. ERCP to stent pancreatic ductal strictures and remove pancreatic calculi
 - c. A step up approach for the treatment of intractable pain
 - d. Extracorporeal shock wave lithotripsy (ESWL) for gallstones
 - e. Assessment for possible endocrine insufficiency after total pancreatectomy

The answer is D.

A number of endoscopic and medical management options exist for the pain associated with acute pancreatitis. These include ESWL of pancreatic stones to facilitate endoscopic extraction, ERCP to stent associated pancreatic ductal strictures, and a conservative step up approach before proceeding to endoscopy. Surgical strategies for the treatment of pain in chronic pancreatitis can be categorized into three major groups: drainage procedures, procedures combining drainage and resection, and resectional procedures. To reduce the incidence of brittle diabetes after total pancreatectomy, interest in the addition of islet autotransplantation has been renewed---further studies are necessary to determine efficacy.

The most frequent cause of chronic pancreatitis is alcohol toxicity. In addition, a genetic predisposition such as cystic fibrosis, uses of certain types of medication, anatomic abnormalities, and autoimmunity can play a role. Biliary tract disease and gallstones are a less frequent cause of chronic pancreatitis,

and while a cholecystectomy could play an important role in the prevention of recurrent acute pancreatitis, neither cholecystectomy nor extracorporeal shock wave lithotripsy for gallstones would be utilized as the principal modality for the chronic pain symptoms associated with the condition.

Reference:

Issa Y, van Santvoort HC, van Goor H, Cahen DL, Bruno MJ, Boermeester MA. Surgical and Endoscopic Treatment of Pain in Chronic Pancreatitis: A Multidisciplinary Update. Dig Surg 2013; 30:35-50.

6. Which of the following is NOT included in the UCSF Pain Assessment hierarchy?
- Self Report
 - Behaviors
 - Individual Patient Pain Tolerance
 - Physiologic Measures
 - Assume Pain Present

The answer is C.

7. Which of the following is **NOT** currently a resource for pain management at UCSF?
- IP3 (Integrated Pediatric Pain and Palliative Care Service)
 - UCSF Helen Diller Family Comprehensive Cancer Center - Symptom Management Service
 - Inpatient Center for the Management of Chronic Pain and Addiction
 - Pain Management Center (PMC) Mount Zion
 - Osher Center for Integrative Medicine

The answer is C.

UCSF Pain Management Resources include:

- Anesthesia Pain Medicine Services:
 - Pain Management Center
 - Inpatient Acute Pain Service
 - Inpatient Chronic Pain Consult Service
- Clinical Pharmacy
- Emergency Medicine
- Hematology/Oncology
- Integrated Pediatric Pain and Palliative Care Service (IP3)
- Medicine
 - Genomic Medicine
 - Hospital Medicine
 - Palliative Medicine
 - Rheumatology Clinic
- Neurology
- Neurosurgery
- OB/Gyn Pelvic Pain
- Oral and Maxillofacial Surgery
- Orthopedic Surgery

- Osher Center for Integrative Medicine
- Otolaryngology
- Physical Therapy/Rehab
- Radiology
- Urology

8. Multimodal Analgesia at UCSF can be described by all the following except?

- a. Ordering Morphine for moderate pain and Hydromorphone (Dilaudid) for severe pain.
- b. Ordering scheduled doses of acetaminophen (PO/IV) plus Morphine as needed for severe break through pain.
- c. Ordering a combination of an oral analgesic plus a peripheral nerve catheter infusion of local anesthetics
- d. Ordering a combination of analgesics that act on different pathways such as acetaminophen, gabapentin and celecoxib.
- e. Combining acupuncture with scheduled doses of acetaminophen and ibuprofen.

The answer is A.

Ordering practices may reveal the use of a single opioid, but given at a ‘low’ dose for the treatment of moderate pain and a higher dose for severe pain. Although not supported by evidence, a review of practices also reveals the use of Hydromorphone (Dilaudid) for severe pain – often following the use of Morphine. Rotation from one opioid to another may result in superior analgesia – however, use of two different opioids does not constitute a different modality (opioids). However, the combined use of an opioid (Morphine) with a non-opioid such as acetaminophen, that is known to reduce opioid requirements, has been shown to be an effective analgesic strategy. Multimodal analgesia may also include other strategies such as combining an oral pharmacologic analgesics with administration of local anesthetics to specific nerves and the inclusion of non-pharmacologic approaches such as acupuncture / mind body techniques. The combination of several non-opioid analgesics administered in a schedule has increasingly been shown to direct significant analgesia and at times minimize or eliminate opioid requirements – especially in the perioperative domain. Although such strategies can avoid or reduce opioid – associated adverse side effects such as respiratory depression, they can be (rarely) associated with other types of risks, such as CAD, Renal and hepatic toxicity.

9. In 2012 the “WHO Guidelines on the pharmacological treatment of persisting pain in children with medical illness” were published: Four pharmacological principles were recommended to achieve good analgesia in children with cancer or other persistent pain specific to situations with tissue damage where there is a clear role for pharmacological treatment.

Which of the following statement regarding the 2012 WHO Guideline is correct:

- a. According to the “WHO Pain Ladder Step 2”, codeine is appropriate for mild-to-medium pain, if acetaminophen and ibuprofen are not effective.
- b. Medications should be administered to children by the fastest and most effective route, making intravenous formulations the preferred route of administration.
- c. Opioid dosing “to effect”, i.e. on an as-needed (“PRN”) basis should be the preferred modality of administration.
- d. Pharmacological treatment should be tailored to the individual disease and opioid analgesics should be titrated following fixed guidelines.
- e. The WHO recommends 2 steps: acetaminophen and ibuprofen for mild pain and morphine for medium-severe pain.

The answer is E.

It is recommended by the WHO to use the analgesic treatment in two steps according to the child’s level of pain severity. Acetaminophen and ibuprofen are the medicines of choice in the first step (mild pain). If pain severity associated with a medical illness is assessed as moderate or severe, the administration of a strong opioid is necessary. Morphine is the medicine of choice for the second step, although other strong opioids should be considered and made available to ensure an alternative to morphine in case of intolerable side-effects. The decision to prescribe and administer opioid analgesics bypassing the first step should be based on a clinical judgement of the severity of a child’s pain, on careful considerations of the disability caused by pain, on the cause of the pain, and expected prognosis and other aspects. The use of codeine is not recommended anymore.

- a. In 2012 the WHO recommendations changed from a three-step pain ladder (the now obsolete middle step was “weak opioids such as codeine”) to a two-step strategy for the treatment of persisting pain in children with medical illness. Codeine is a weaker analgesic than commonly believed and ineffective a large number of children (up to 36%). Furthermore, approximately 5% of white Caucasians (29% of Ethiopians) have multiple copies of the enzyme CYP 2D6, are “ultra rapid metabolizers”, and as a result therefore metabolize unusually high doses of morphine. Pediatric deaths due to codeine at recommended dosing have been published.
- b. Medications should be administered to children by the simplest, most effective and least painful route, making oral formulations the most convenient and least expensive route of administration. If possible, the route of administration should be chosen by the child. Painful

intramuscular administration of pain medication is unnecessary and obsolete. Novel Routes usually make use of high lipophilicity of certain opioids to cross skin or mucosa.

- c. When pain is constantly present, analgesics should be administered, while monitoring side-effects, at regular intervals (by the clock” and NOT as an “as needed” basis). Regular scheduling ensures a steady blood level, reducing the peaks and troughs of PRN (“as needed”) dosing. “PRN only” (without scheduled analgesia) may take several hours and higher opioid doses to relieve pain and results in cycle of under medication and pain, alternating with periods of over medication and drug toxicity.
 - d. The WHO Principles state, that the treatment should be tailored to the individual child and opioid analgesics should be titrated on an individual basis.
10. Which of the following statements regarding acute, chronic and neuropathic pain is NOT correct?
- a. "Chronic Pain" in children usually is defined as "pain beyond the expected time of healing" and in adults usually as "pain lasting longer than 3 months"
 - b. There is reasonable evidence for the administration of opioids to treat patients with chronic pain conditions such as fibromyalgia, chronic musculoskeletal pain, functional abdominal pain, headaches/migraines
 - c. The administration of codeine (e.g. Tylenol #3) and meperidine (e.g. Demerol) is NOT recommend in the treatment of acute pain conditions
 - d. First line adjuvant analgesia for neuropathic pain include low-dose tricyclic antidepressants and gabapentinoids
 - e. The choice of an analgesic does NOT depend on the pain score

The answer is B.

There is NO evidence for the administration of opioids to treat patients with chronic pain conditions such as fibromyalgia, chronic musculoskeletal pain, functional abdominal pain, headaches/migraines, in fact their use would be considered contraindicated by most pain specialists in the US.